ELECTRONIC REPORT SUBMITTAL

Piedmont Regional Office

PC#: 2015-4105

Site Name: Old Oaks Neighborhood

Phase: Post Site Characterization Case

Manager Name: John Spangler Date

Submitted: December 7, 2017

POST SITE CHARACTERIZATION MONITORING REPORT

Old Oaks Neighborhood
Crozier, Goochland County, Virginia
PC # 2015-4105

Submitted To:

Mr. John Spangler
Commonwealth of Virginia
Department of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, Virginia 23060

Prepared By:

Apex Companies, LLC
203 Wylderose Court
Midlothian, Virginia 23113

Apex Job Number: 757004.001
State Lead Contract# 15-01-CP-01
December 7, 2017

Prepared By:	Reviewed By:	Reviewed By:
Samuel J. Tolton	Mark V. Ryland	Christopher L. Cheatham, PE
Environmental Scientist	Project Manager	Program Manager

EXECUTIVE SUMMARY

Apex Companies, LLC (Apex) has completed this Post-Site Characterization Monitoring Report (PSCMR) associated with a release of gasoline from an unknown source in the Old Oaks Neighborhood located in Crozier, Goochland County, Virginia (site). A release of gasoline was suspected following the detection of petroleum constituents in the supply well serving the Monger residence, addressed as 1489 Old Oaks Lane. The source of the release is currently unknown. The release was reported to the Commonwealth of Virginia Department of Environmental Quality (DEQ) Piedmont Regional Office (PRO) on September 19, 2014 and is being addressed under pollution complaint (PC) number 2015-4105.

In accordance with DEQ directives, Apex performed PSCMR activities including monitoring well gauging, the collection and analysis of groundwater samples, domestic supply well sampling and analyses, manual free product recovery, and one six-hour aggressive fluid/vapor recovery (AF/VR) event.

Volatile organic compounds were detected in seven of the 16 monitoring wells sampled. Total petroleum hydrocarbons gasoline range organics was detected at a maximum concentration of 145 milligrams per liter in MW-12. Benzene and methyl tertiary-butyl ether (MTBE) were detected at maximum concentrations of 21,500 micrograms per liter (µg/L) and 6.86 µg/L in monitoring wells MW-14 and MW-4, respectively. EDB was detected at a maximum concentration of 448 µg/L in monitoring well MW-3.

Apex performed one six-hour AF/VR event on September 7, 2017, recovering a total of 123 gallons of free-phase petroleum/water from monitoring wells MW-3, MW-12 and MW-14. TPH-DRO was detected at a maximum concentrating of 1,240 milligram per cubic meter in the sample collected from MW-12. The liquids were recovered via a vacuum truck and transported offsite for disposal at Atlantic Industrial Services, Inc. in Chester, Virginia.

Apex collected supply well samples from 16 properties located in the Crozier area. MTBE was detected in the Williams residence (DW-1490 Old Oaks) pre-treatment sample at a concentration of 1.38 µg/L. Chloroform was detected at concentrations of 0.9 µg/L in the Yarbrough residence supply well sample (DW-1267 Cardwell), 0.53 µg/L in the Bechter residence supply well sample (DW-1510 Old Oaks), and 1.76 µg/L in the Martin residence supply well sample (DW-1241 Cardwell). The presence of chloroform is likely attributed to the chlorination and disinfection of the supply wells and is not related to the petroleum release. No petroleum compounds were detected in any of the other supply wells samples collected during this investigation.

Based on the current dissolved-phase petroleum concentrations and surrounding residences' sole dependence on groundwater for potable purposes, risk to additional private water supplies is considered possible. DEQ, in cooperation with Goochland County Public Utilities and Aqua-VA, is currently planning a proposed extension of the

existing Aqua-VA public water line utility along River Road West to connect all at-risk and willing residents along Cardwell Road and Old Oaks Lane. At the request of the DEQ, Apex is currently developing a Corrective Action Plan to address connection of area groundwater users to the Aqua-VA public water supply. Apex recommends continued gauging and sampling of monitoring wells, supply well sampling, and free product recovery until the public water line connection can be completed. This PSCMR was prepared in accordance with DEQ PRO directives and the approved scope of work.

TABLE OF CONTENTS

EXECUTIVE SUMMARY i

1.0 INTRODUCTION 1

2.0 BACKGROUND 1

3.0 SITE DESCRIPTION 5

4.0 GROUNDWATER MONITORING 6

4.1 Free Product Recovery 6
4.2 Groundwater Sampling 6

5.0 AGGRESSIVE FLUID/VAPOR RECOVERY 7

6.0 SUPPLY WELL SAMPLING 8

7.0 SUMMARY 8

List of Figures

Figure 1. *Site Location Map*
Figure 2. *Site Plan*
Figure 3. *Water Table Gradient Map (10/13/2016)*
Figure 4. *BTEX Isoconcentration Map (Shallow Aquifer)*
Figure 5. *Supply Well Location Map*

List of Tables

Table 1. *Current and Historical Groundwater Elevation Data*
Table 2. *Current and Historical Groundwater Analytical Data*
Table 3. *AF/VR Vapor Effluent Analytical Data*
Table 4. *Current and Historical Supply Well Analytical Data (Culligan)*
Table 5. *Domestic Supply Well Survey*

List of Appendices

Appendix A *Apex Field Notes*
Appendix B *Laboratory Certificates of Analysis and Chain-of-Custody Documentation*
Appendix C *Liquids Disposal Manifests*

1.0 INTRODUCTION

Apex Companies, LLC (Apex) has completed this Post-Site Characterization Monitoring Report (PSCMR) associated with a release of gasoline from an unknown source in the Old Oaks Neighborhood located in Crozier, Goochland County, Virginia (site). The site location is depicted on Figure 1. A release of gasoline was suspected following the detection of petroleum constituents in the supply well serving the Monger residence, addressed as 1489 Old Oaks Lane. The source of the release is currently unknown. The release was reported to the Commonwealth of Virginia Department of Environmental Quality (DEQ) Piedmont Regional Office (PRO) on September 19, 2014 and is being addressed under pollution complaint (PC) number 2015-4105.

From April through October 2017 Apex performed PSCMR activities including the collection and analysis of groundwater samples, domestic supply well sampling, free product recovery, a six-hour aggressive fluid/vapor recovery (AF/VR) event, and vapor effluent sampling. Copies of the field notes recorded during this investigation are included as Appendix A.

2.0 BACKGROUND

In February 2014, Mr. Chris Monger began detecting a petroleum odor in his supply well. Under the guidance of a friend who works for an environmental agency in California, Mr. Monger conducted his own sampling event on September 10, 2014. The analytical results from the onsite supply well indicated the presence of several gasoline constituents in groundwater above laboratory method detection limits. The release was reported to the DEQ PRO on September 19, 2014. Following the sampling event conducted by Mr. Monger, DEQ contracted with Stoner Quality Water, Inc. (Stoner) to resample the Monger residence on September 22, 2014 to verify the analytical results. Subsequently, the initial analytical results were verified and a carbon filtration system was installed on the Monger residence water supply at the direction of DEQ.

Following confirmation of gasoline constituents in the Monger residence supply well, DEQ requested that Stoner sample 16 private water supplies located at the remaining residences in the Old Oaks Lane neighborhood. Six residences (1463, 1476, 1482, 1490, 1498, and 1529 Old Oaks Lane) in addition to the Monger residence were confirmed to have supply wells impacted by gasoline constituents. The supply wells were subsequently connected to carbon filtration systems.

One active gasoline station, Taylor Country Store (1535 River Road West), was identified in the area. DEQ requested that a site check be completed for the Taylor Country Store property to assess soil and groundwater conditions at the site. The investigation was completed by Advanced Environmental Solutions, LLC (Advanced) and included the installation of four soil borings (SB-1A through SB-4A) and the conversion of the soil borings to groundwater monitoring wells (MW-1A through MW-4A). Additional information regarding work completed by Advanced is referenced under

PC# 2015-4215. A site plan showing pertinent features of the Taylor's Market property as well as adjacent properties is provided as Figure 2.

According to available information, two additional properties were identified as potential sources of a petroleum release, the Keith property (1537 River Road West) and the former Briesmaster Motor Company (1543 River Road West). Based on historical records the former Briesmaster Motor Company and the Keith properties both operated with underground storage tanks (USTs) for an undetermined number of years since at least the 1930s. Additional information referencing the removal of a 1,000-gallon gasoline UST at the former Briesmaster Motor Company property is documented under PC# 2000-4557.

Aqua Virginia, Inc. operates a Class VI groundwater supply well that currently supplies potable water to 24 existing connections. The original supply well for Crozier waterworks was completed in 1947 but was permanently disconnected in 2004 due to inadequate supply. The current supply well was completed in 1955 to a depth of 79 feet below ground surface (BGS) and subsequently deepened to 465 feet in 1996. The waterworks consist of the well, a 5,000-gallon hydropneumatic tank, chlorination facilities, corrosion control facilities, and the distribution system, with related controls, piping, and appurtenances. The supply well is located approximately 1,500 feet west of the former Briesmaster Motor Company property on Issequenna Road. The Aqua Virginia well currently supplies potable water to residences and businesses located on Lee Road, Issequenna Road, and River Road West to include Taylor Country Store, the former Briesmaster Motor Company property, and the Keith property.

During site characterization activities from October through December 2014, Apex activities included bottled water delivery, supply well sampling, installation of 13 groundwater monitoring wells (MW-1 through MW-13), and the collection and analysis of soil and groundwater samples. Adsorbed-phase petroleum compounds were detected in six of the 13 soil samples collected during this investigation. Total petroleum hydrocarbon (TPH) gasoline range organics (GRO) was detected at a concentration of 499 parts per million (ppm) in soil sample SS-12-9 at a depth of 45 feet below ground surface. Free-phase petroleum was detected in MW-3 at a maximum thickness of 0.60 feet on January 21, 2015. Dissolved-phase petroleum compounds were detected in 11 of the 13 groundwater monitoring wells sampled. TPH GRO was detected at a maximum concentration of 137 milligrams per liter (mg/L) in MW-3. Methyl tertiary-butyl ether (MTBE) and benzene were detected at maximum concentrations of 28.6 micrograms per liter (µg/L) and 30,500 µg/L, in MW-4 and MW-12, respectively. Additionally, groundwater samples were collected from eight adjacent properties supply wells. Dissolved-phase petroleum compounds were not detected in any of the eight supply wells sampled. Trichlorofluoromethane was detected at a concentration of 49.5 µg/L at the Micken's residence, supply well sample (DW-1491 Oaken Croft). No other volatile organic compounds were detected in the supply well sample. Trichlorofluoromethane, also known as freon-11, CFC-11, or R-11, is a chlorofluorocarbon typically used as a refrigerant. The presence of trichlorofluoromethane is likely attributed to the multiple

refrigeration units located on the property which were located in the vicinity of the supply well and is not related to the petroleum release.

During SCRA activities from January through April 2015, Apex activities included a ground penetrating radar survey, the installation of three groundwater monitoring wells (MW-14 through MW-16), the collection and analysis of soil and groundwater samples, domestic supply well sampling, and an AF/VR event. Adsorbed-phase petroleum compounds were detected in one of the three soil samples collected during this investigation. TPH GRO was detected at a concentration of 771 ppm in soil sample SS-14-9 at a depth of 43 feet BGS. Free-phase petroleum was detected in MW-12 at a thickness of 0.55 feet on February 25, 2015. Dissolved-phase petroleum compounds were detected in 13 of the 16 groundwater monitoring wells sampled. TPH GRO was detected at a maximum concentration of 241 mg/L in MW-14. Benzene and MTBE were detected at maximum concentrations of 25,900 µg/L and 33.2 µg/L in monitoring wells MW-14 and MW-4, respectively. 1, 2-Dibromoethane (EDB) was detected at a maximum concentration of 837 µg/L in monitoring well MW-14.

Apex collected 19 supply well samples from adjacent properties during SCRA activities. Dissolved-phase petroleum compounds were not detected in any of the 19 supply wells sampled. Trichlorofluoromethane was detected at a concentration of 17.4 µg/L at the Mickens residence, supply well sample (DW-1491 Oaken Croft). Trichlorofluoromethane, also known as freon-11, CFC-11, or R-11, is a chlorofluorocarbon typically used as a refrigerant. The presence of trichlorofluoromethane is likely attributed to the multiple refrigeration units located on the property, in the vicinity of the supply well and is not related to the petroleum release.

During the AF/VR Event, a total of 189 gallons of gasoline/water mixture was recovered. The total recovery in the vapor stream for the AF/VR event is estimated to be between 2.6 and 5.0 gallons of gasoline. Approximately 0.01 gallons of free product were recovered via manual bailing during the SCRA investigation.

Additionally, a ground penetrating radar (GPR) survey was performed at the Taylor's Market, Keith, and former Briesmaster Motor Company properties during March 2015. The purpose of the survey was to evaluate the subsurface for potential historical water supply wells to determine if these structures may represent conduits for petroleum to impact the deep aquifer and to identify any potential abandoned USTs. Numerous linear features were observed at various depths across the study area, likely indicative of the septic drainfields associated with each property. Additionally, twelve isolated GPR anomalies were observed with the characteristics indicative of potential underground storage tanks, septic tanks, and/or a septic distribution boxes.

During SCRA II activities from November 2015 through January 2016, Apex activities included the collection and analysis of groundwater samples, domestic supply well sampling, free product recovery, and a five-day dual-phase extraction (DPE) event. Free-phase petroleum was detected in MW-14 at a maximum thickness of 1.95 feet on November 6, 2015. Dissolved-phase petroleum compounds were detected in seven of the

15 groundwater monitoring wells sampled. TPH-GRO was detected at a maximum concentration of 143 mg/L in MW-3. Benzene and MTBE were detected at maximum concentrations of 27,000 µg/L and 14.0 µg/L in monitoring wells MW-3 and MW-4, respectively. EDB was detected at a maximum concentration of 360 µg/L in monitoring well MW-3.

Apex collected 21 supply well samples from properties located in the Crozier area. Dissolved-phase petroleum compounds were detected in one of the 21 supply wells sampled. Benzene, di-isopropyl ether, and 1,2-dichloroethane were detected at concentrations of 46.7 µg/L, 24.1 µg/L, and 4.25 µg/L, respectively, in the Haddon residence supply well (DW-1537 Old Oaks Lane). Trichlorofluoromethane was detected at a concentration of 17.3 µg/L in the Mickens residence supply well sample (DW-1491 Oaken Croft). Trichlorofluoromethane, also known as freon-11, CFC-11, or R-11, is a chlorofluorocarbon typically used as a refrigerant. The presence of trichlorofluoromethane is likely attributed to the multiple refrigeration units located on the Mickens property in the vicinity of the supply well and is not related to the petroleum release. Chloroform was detected at a concentration of 0.90 µg/L in the Yarbrough residence supply well sample (DW-1267 Cardwell), 1.63 µg/L in the Martin residence supply well sample (DW-1241 Cardwell), and 0.57 µg/L in the Bechter residence supply well sample (DW-1510 Old Oaks). The presence of chloroform is likely attributed to the chlorination and disinfection of the supply wells and is not related to the petroleum release. No other volatile organic compounds were detected in the supply well samples.

During the DPE Event, a total of 905 gallons of gasoline/water mixture was recovered. The total recovery in the vapor stream for the DPE event is estimated to be between 10 and 35 gallons of gasoline. Approximately one gallon of free product was recovered via manual bailing during this investigation.

During SCRA III activities from February 2016 through October 2016, Apex activities included the collection and analysis of soil and groundwater samples, domestic supply well sampling, free product recovery, a subsurface investigation, and two AF/VR events. Free-phase petroleum was detected in MW-14 at a maximum thickness of 0.62 feet on July 25, 2016. Dissolved-phase petroleum compounds were detected in seven of the 16 groundwater monitoring wells sampled. Total petroleum hydrocarbon gasoline range organics was detected at a maximum concentration of 145 milligrams per liter (mg/L) in MW-12. Benzene and methyl tertiary-butyl ether (MTBE) were detected at maximum concentrations of 19,000 micrograms per liter (µg/L) and 14.8 µg/L in monitoring wells MW-14 and MW-4, respectively. 1, 2-Dibromoethane was detected at a maximum concentration of 388 µg/L in monitoring well MW-3.

Apex collected supply well samples from 21 properties located in the Crozier area. Dissolved-phase petroleum compounds were not detected in any of the 21 supply wells sampled. Trichlorofluoromethane was detected at a concentration of 10.9 µg/L in the Mickens residence supply well sample (DW-1491 Oaken Croft). Trichlorofluoromethane, also known as freon-11, CFC-11, or R-11, is a chlorofluorocarbon typically used as a refrigerant. The presence of

trichlorofluoromethane is likely attributed to the multiple refrigeration units formerly located on the property, in the vicinity of the supply well and is not related to the petroleum release. Chloroform was detected at a concentration of 0.73 µg/L at the Yarbrough residence supply well sample (DW-1267 Cardwell), 0.82 µg/L at the Martin residence supply well sample (DW-1241 Cardwell), 0.63 µg/L at the Alexander residence supply well sample (DW-1226 Cardwell), and 0.66 µg/L at the Bechter residence supply well sample (DW-1510 Old Oaks). The presence of chloroform is likely attributed to the chlorination and disinfection of the supply well and is not related to the petroleum release. No other volatile organic compounds were detected in the supply well samples.

Apex performed two eight-hour AF/VR events on August 17, 2016 and October 5, 2016, recovering a total of 256 gallons of free-phase petroleum/water from monitoring wells MW-3 and MW-14. The liquids were recovered via a vacuum truck and transported offsite for disposal at Atlantic Industrial Services, Inc. in Chester, Virginia.

On October 6, 2016, Apex mobilized to the site to perform a subsurface investigation to identify the location of a suspected underground storage tank (UST) on the Keith property, addressed as 1537 River Road West Crozier, Virginia. On October 11, 2016, Apex returned to the site to uncover the UST and collect a water sample from the interior of the UST and a soil sample adjacent to the UST exterior. Total petroleum hydrocarbon (TPH) diesel range organics (DRO) was detected at a concentration of 1.67 mg/L in the water sample. No other dissolved-phase petroleum compounds were detected in the water sample. TPH-DRO was detected at a concentration of 2,020 parts per million in the soil sample collected adjacent to the UST. Ethylbenzene and naphthalene were detected at concentrations of 632 parts per billion (ppb) and 2,510 ppb, respectively in the soil sample collected. Based on the data collected, petroleum impact to the surrounding soil and water contained within the UST did not appear related to the impacted supply wells in the Old Oaks Neighborhood. Mr. Jeff Keith, the property owner, was notified of the findings and a new PC number was issued in conjunction with a “No Further Action” letter.

From January through March 2017, Apex performed PSCMR activities including monitoring well gauging and free product recovery. Measurable free-phase petroleum was detected in three monitoring wells and at a maximum thickness of 0.09 feet in MW-12 during this phase. Approximately 0.03 gallons of free product was recovered via hand bailing and placed in a 55-gallon drum staged onsite.

3.0 SITE DESCRIPTION

The site is located in a rural and residential area of Crozier, Goochland County, Virginia with properties in the vicinity consisting of residential dwellings and wooded land. The specific areas of concern consist of a current service station (Taylor Country Store) and two former service stations (former Briesmaster Motor Company and the Keith property). All three sites are supplied potable water by Aqua Virginia from a public water supply well located approximately 1,500 feet west of the site. A site plan showing pertinent features of the site is included as Figure 2.

4.0 GROUNDWATER MONITORING

4.1 Free Product Recovery

In accordance with the DEQ-approved scope of work, Apex conducted manual bailing at the site in conjunction with monitoring well gauging during this phase. Apex used a Solinst™ electronic interface probe to measure the depth to groundwater and investigate for the presence of free-phase gasoline in the site monitoring wells. Free-phase petroleum was detected in three monitoring wells (MW-3, MW-12, and MW-14) at a maximum thickness of 0.21 feet in monitoring well MW-12 on July 14, 2017. Groundwater flow at the site was determined by using the triangulation method from the relative groundwater elevations in the onsite monitoring wells. Relative groundwater elevations indicate that groundwater flow is to the northeast and southwest. A tabular summary of current and historical groundwater elevation data is presented in Table 1. A water table gradient map of the site based on groundwater elevations as measured on October 13, 2017 is included as Figure 3.

As a supplement to gauging activities, free product was recovered from monitoring wells when observed. Approximately 0.01 gallon of free product was recovered via hand bailing and placed in a 55-gallon steel drum staged onsite. On August 18, 2017 absorbent wicks were installed in monitoring wells MW-3, MW-12, and MW-14. On September 7, 2017 the wick in MW-12 was observed as 25% saturated and MW-3 and MW-14 were observed as less than 10% saturated. On September 15, 2017 the absorbent wick in MW-12 was replaced.

4.2 Groundwater Sampling

Groundwater samples were collected on October 13, 2017 from 16 onsite monitoring wells. The groundwater samples were collected using dedicated, high-density polyethylene bailers, and were transferred directly into the appropriate sample containers. Prior to sampling, Apex purged the monitoring wells to remove suspended solid material from the water column and to collect samples representative of aquifer conditions. Each monitoring well was purged until a minimum of three well volumes had been displaced. The samples were labeled and stored on ice pending delivery to the laboratory. Strict sample security and chain-of-custody documentation were maintained during all phases of transport. The groundwater samples were submitted to Air, Water, and Soil Laboratories, Inc. (AWS), in Richmond, Virgina for volatile organic compounds (VOCs) analysis via U.S. EPA SW-846 method 8260B, TPH GRO analysis via U.S. EPA SW-846 method 8015C, and EDB analysis via U.S. EPA SW-846 modified method 8011. A rinsate blank was also collected from the sampling equipment and analyzed via the same methods as the groundwater samples.

VOCs were detected in seven of the 16 monitoring wells sampled. TPH GRO was detected at a maximum concentration of 145 mg/L in MW-12. Benzene and MTBE were detected at maximum concentrations of 21,500 µg/L and 6.86 µg/L in monitoring wells MW-14 and MW-4, respectively. EDB was detected at a maximum concentration of 448 µg/L in monitoring well MW-3. A tabular summary of groundwater analytical data is provided in Table 2. A total benzene, toluene, ethylbenzene, and xylenes (BTEX) isoconcentration map is included as Figure 4. The laboratory Certificate of Analysis and chain-of-custody records are provided as Appendix B.

5.0 AGGRESSIVE FLUID/VAPOR RECOVERY

Apex personnel gauged the monitoring wells for the presence of free-phase gasoline before and after the six-hour AF/VR event on September 7, 2017 using a Solinst™ electronic interface probe. Based on pre-event gauging data, monitoring wells MW-3, MW-12 and MW-14 were utilized as recovery locations.

Performance of the AF/VR event requires a high vacuum applied at the well locations that exhibit free product. Apex conducted the AF/VR event via a vacuum applied to recovery wells using a vacuum truck. Connection of the vacuum truck to the wellhead was completed using a manifold equipped with a Fernco fitting, a quick disconnect, and a vacuum pressure gauge. Additionally, Apex installed drop tubes equipped with packers to isolate a discrete interval just above the product level (smear zone) to increase recovery effectiveness. The vacuum was applied to each of the three monitoring wells for two hours during the event. A total of 123 gallons of gasoline/water mixture was collected during the AF/VR event. The vacuum truck was gauged to determine volume and to measure for any separation of free-phase gasoline, but no measurable separation of product from the aqueous phase was observed. This is likely due to the high vacuum pressure at which the gasoline/water mixture is under during recovery. The liquids were recovered and transported offsite for disposal at Atlantic Industrial Services, Inc. in Chester, Virginia. The manifests for recovered liquids transportation and disposal are included in Appendix C.

At the request of the DEQ, Apex collected three vapor effluent samples from the vapor discharge stack located on the side of the vacuum truck. Vapor samples were collected from the stack in Tedlar sample bags and submitted AWS for MTBE, benzene, toluene, ethylbenzene, and xylenes (BTEX) and TPH GRO analyses by U.S. EPA method TO-18. During the two-hour extraction period on MW-12, TPH-DRO was detected at a maximum concentrating of 1,240 milligram per cubic meter (mg/m^3). The laboratory Certificates of Analysis and chain-of-custody documentation for vapor effluent samples are provided in Appendix B. A tabular summary of vapor effluent analytical data collected during the AF/VR event is presented in Table 3.

6.0 SUPPLY WELL SAMPLING

Between June and September 2017 Apex collected samples from 16 residential supply wells including the Hill residence (DW-1463 Old Oaks), Morsink residence (DW-1470 Old Oaks), Williams residence (DW-1490 Old Oaks), Steelman residence (DW-1504 Old Oaks), Betcher residence (DW-1510 Old Oaks), King residence (DW-1518 Old Oaks), Carter residence (DW-1534 Old Oaks), Nuckols residence (DW-1548 River), Mickens residence (DW-1491 Oakencroft), Ramsey residence (DW-1231 Cardwell), Valentine residence (DW-1235 Cardwell), Martin residence (DW-1241 Cardwell), Baker residence (DW-1253 Cardwell), Yarbrough residence (DW-1267 Cardwell), L. Harris residence (DW-1327 Cardwell), Bryant residence (DW-991 Briesmaster). One sample (pre-treatment) was collected from the Williams residence supply well (1490 Old Oaks) to investigate for the presence of MTBE. Apex attempted to sample seven additional supply wells (1501 Old Oaks Lane, 1500 River Road, 1497 Oakencroft Lane, 1226 Cardwell Road, 1261 Cardwell Road, 1321 Cardwell Road, and 860 Briesmaster Way), however; no response was received from the property owners. All supply well samples were collected from a spigot prior to the pressure tank and/or house filtration system. Each spigot or faucet was allowed to purge for approximately ten minutes prior to sample collection. Disposable latex gloves were used during all phases of sample collection. Samples were labeled and stored on ice pending delivery to AWS in Richmond, Virginia for VOCs analysis via U.S. EPA SW-846 method 8260B and EDB analysis via U.S. EPA SW-846 modified method 8011. Field blanks were also collected for each supply well sample and analyzed via the same laboratory methods.

MTBE was detected at a concentration of 1.38 µg/L in the Williams residence supply well sample (DW-1490 Old Oaks). Chloroform was detected at concentrations of 0.9 µg/L in the Yarbrough residence supply well sample (DW-1267 Cardwell), 0.53 µg/L in the Bechter residence supply well sample (DW-1510 Old Oaks), and 1.76 µg/L in the Martin residence supply well sample (DW-1241 Cardwell). The presence of chloroform is likely attributed to the chlorination and disinfection of the supply well and is not related to the petroleum release. No other petroleum compounds were detected in any of the supply wells sampled during this investigation. The laboratory Certificate of Analysis and chain-of-custody records are included in Appendix B. A tabular summary of information pertaining to domestic supply wells sampled during this investigation is included as Table 4. A supply well location map is included as Figure 5. The supply well addresses that were sampled during this investigation are depicted in bold font on Figure 5. A tabular summary of current and historical (Culligan) supply well analytical data for the impacted residences located in the Old Oaks Lane neighborhood is included as Table 4. A domestic supply well survey containing ownership and contact information is included as Table 5.

7.0 SUMMARY

In accordance with DEQ directives, Apex performed PSCMR activities including monitoring well gauging, the collection and analysis of groundwater samples, domestic

supply well sampling and analysis, manual free product recovery, one six-hour AF/VR event, and vapor effluent sampling.

Volatile organic compounds were detected in seven of the 16 monitoring wells sampled. Total petroleum hydrocarbons gasoline range organics was detected at a maximum concentration of 145 milligrams per liter in MW-12. Benzene and methyl tertiary-butyl ether (MTBE) were detected at maximum concentrations of 21,500 micrograms per liter (µg/L) and 6.86 µg/L in monitoring wells MW-14 and MW-4, respectively. EDB was detected at a maximum concentration of 448 µg/L in monitoring well MW-3.

Apex performed one six-hour AF/VR event on September 7, 2017, recovering a total of 123 gallons of free-phase petroleum/water from monitoring wells MW-3, MW-12 and MW-14. TPH-DRO was detected at a maximum concentrating of 1,240 milligram per cubic meter in the sample collected from MW-12. The liquids were recovered via a vacuum truck and transported offsite for disposal at Atlantic Industrial Services, Inc. in Chester, Virginia.

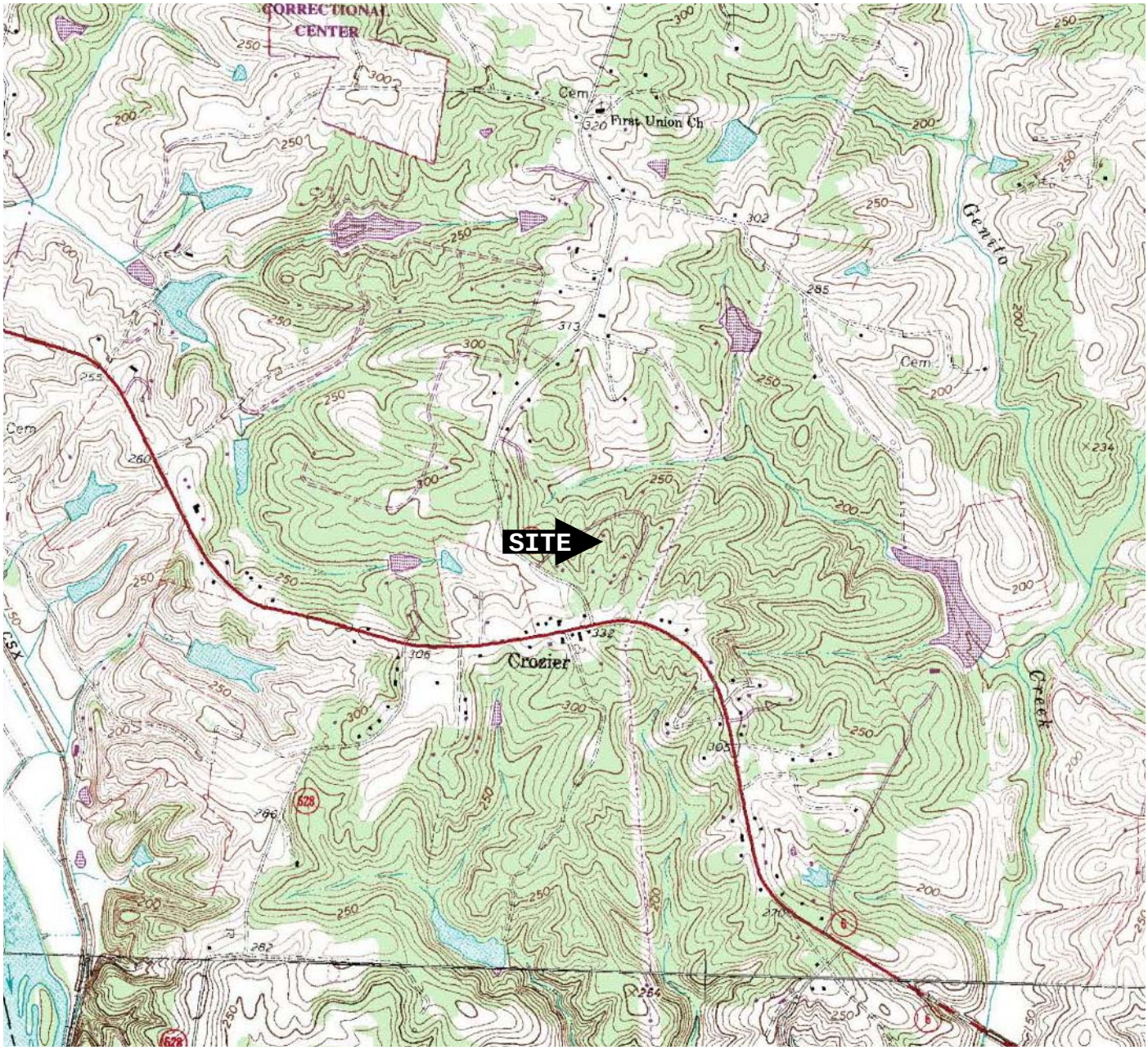
Apex collected supply well samples from 16 properties located in the Crozier area. MTBE was detected in the Williams residence (DW-1490 Old Oaks) pre-treatment sample at a concentration of 1.38 µg/L. Chloroform was detected at concentrations of 0.9 µg/L in the Yarbrough residence supply well sample (DW-1267 Cardwell), 0.53 µg/L in the Bechter residence supply well sample (DW-1510 Old Oaks), and 1.76 µg/L in the Martin residence supply well sample (DW-1241 Cardwell). The presence of chloroform is likely attributed to the chlorination and disinfection of the supply wells and is not related to the petroleum release. No petroleum compounds were detected in any of the other supply wells samples collected during this investigation.

Based on the current dissolved-phase petroleum concentrations and surrounding residences' sole dependence on groundwater for potable purposes, risk to additional private water supplies is considered possible. DEQ, in cooperation with Goochland County Public Utilities and Aqua-VA, is currently planning a proposed extension of the existing Aqua-VA public water line utility along River Road West to connect all at-risk and willing residents along Cardwell Road and Old Oaks Lane. At the request of the DEQ, Apex is currently developing a Corrective Action Plan to address connection of area groundwater users to the Aqua-VA public water supply. Apex recommends continued gauging and sampling of monitoring wells, supply well sampling, and free product recovery until the public water line connection can be completed. This PSCMR was prepared in accordance with DEQ PRO directives and the approved scope of work.

Figures

Figure 1
Site Location Map

Old Oaks Neighborhood
Crozier, Goochland County, Virginia



APEX

APEX COMPANIES, LLC.
203 WYLDEROSE COURT
MIDLOTHIAN, VIRGINIA 23113
(804) 897-2718

(Perkinsville, Virginia)

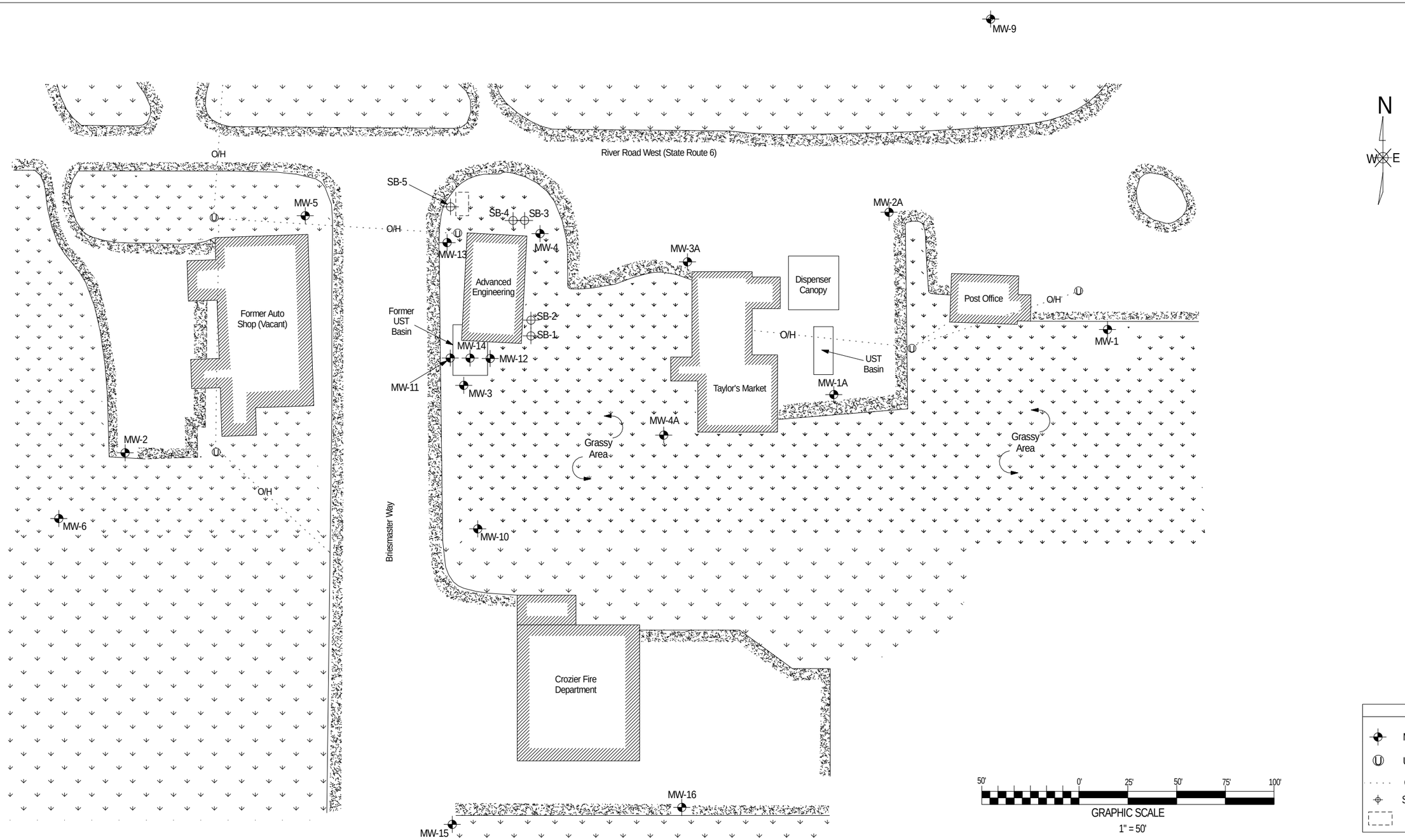
United States Department of the Interior
Geological Survey
7.5 Minute Series Topographic Map
Contour Interval: 10 feet
Scale: 1 inch = 2000 feet
Date: 1987

Project: Post-SCR

Client: DEQ PRO

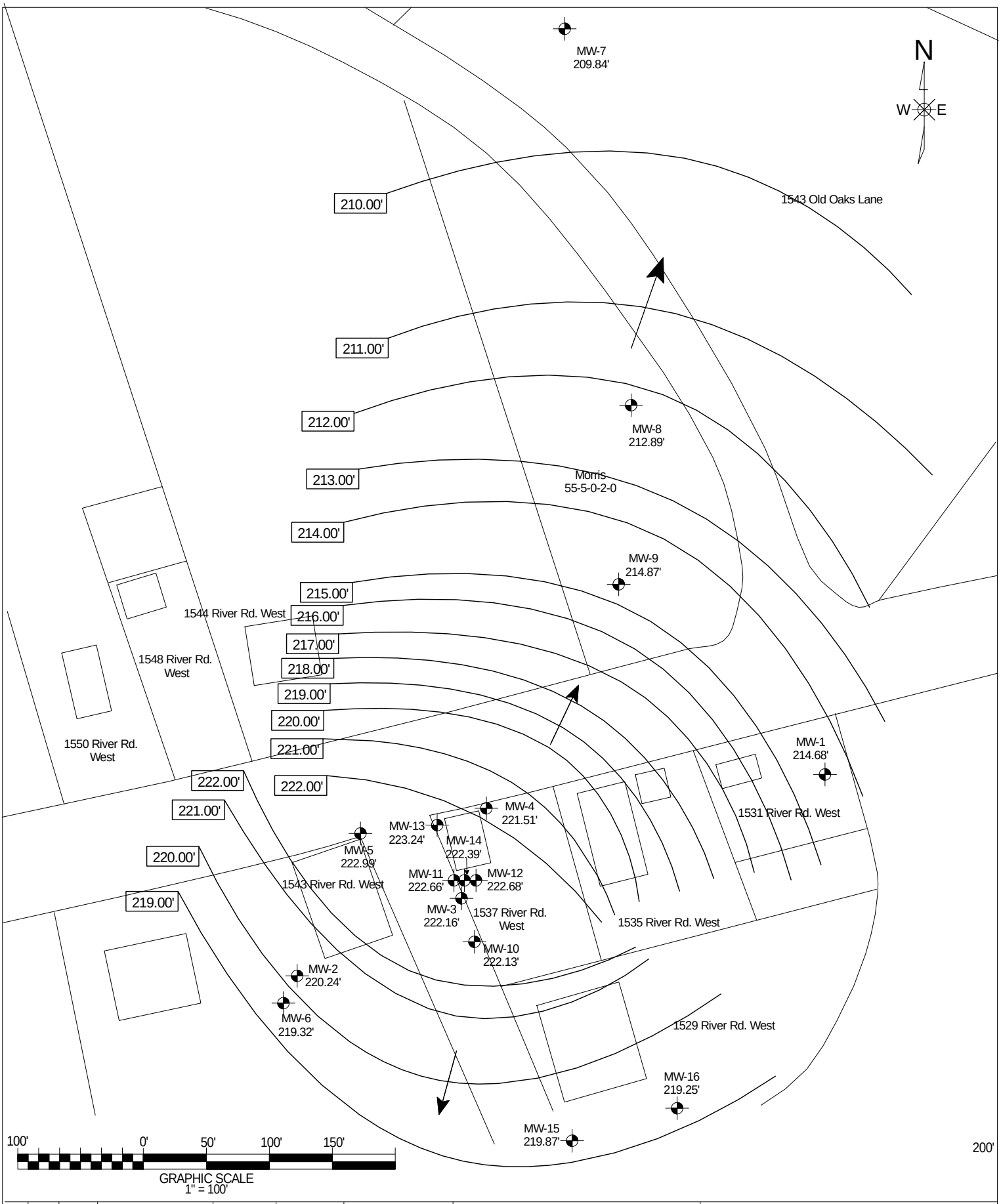
Apex Job #: 757004-001

Date: November 2017



LEGEND	
⊕	Monitoring Well Location
Ⓤ	Utility Pole
- - - -	Overhead Utilities
⌖	Soil Boring/Sample Location
▭	UST Location

DR.: SJT	DATE: Nov 2017	Post-SCR Monitoring	APEX COMPANIES, LLC. 203 WYLDEROSE COURT MIDLOTHIAN, VIRGINIA 23113 (804) 897-2718	DRAWING TITLE: Site Plan Old Oaks Neighborhood Crozier, Virginia
CK.:				
APP'D.:				
SCALE: 1" = 50'				
APEX PROJ. NO.: 757004.001				DRAWING NUMBER: FIGURE No. 2 — REV: 0
www.apexcos.com		PC# 2015-4105		



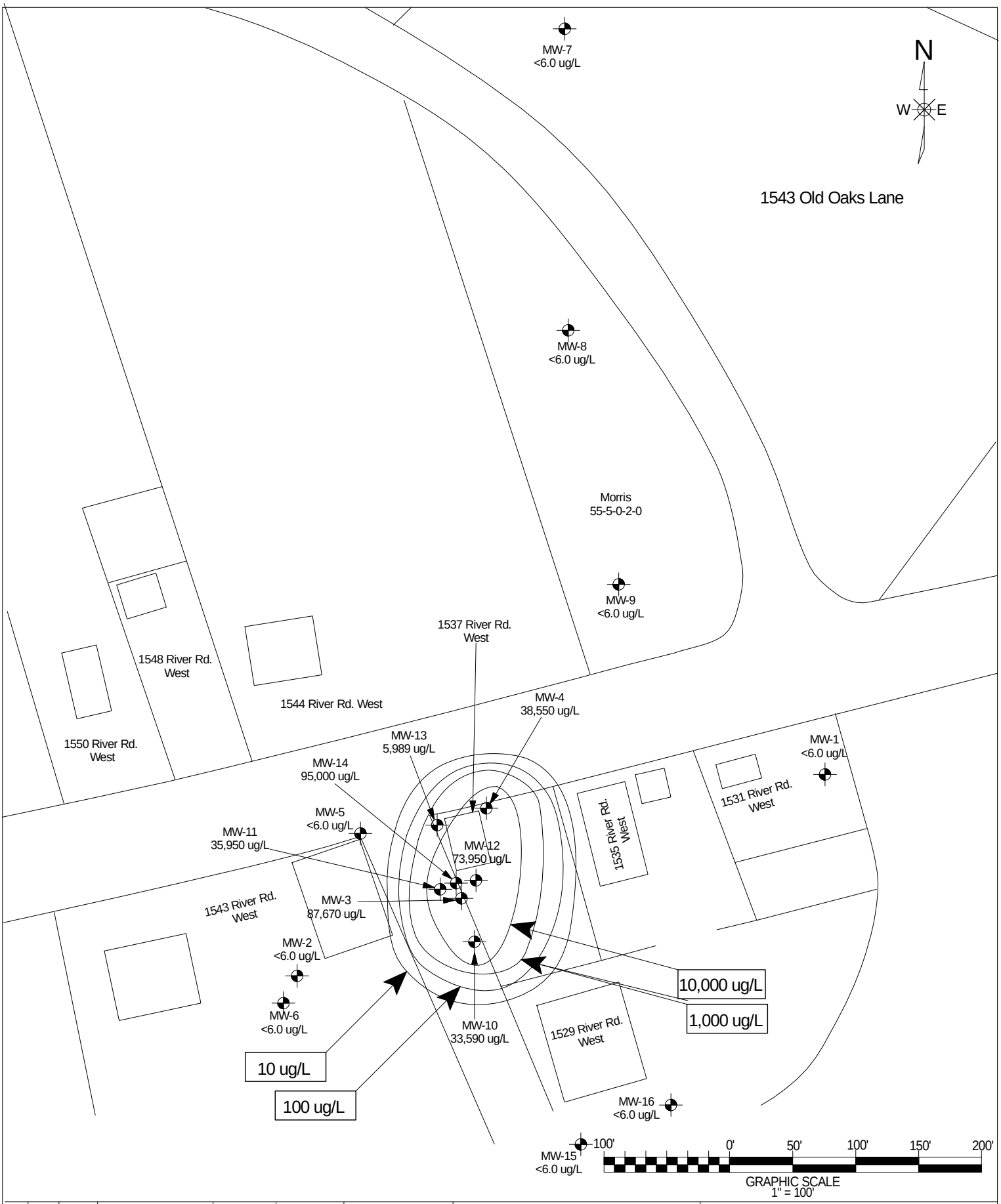
				DR.: SJT	DATE: Oct 2017	Post - SCR Monitoring	APEX COMPANIES, LLC. 203 WYLDEROSE COURT MIDLOTHIAN, VIRGINIA 23113 (804) 897-2718
				CK.:			
				APP'D.:			
				SCALE: 1" = 100'			
				APEX PROJ. NO.: 757004.001			
REV	BY	DATE		www.apexcos.com		PC# 2015-4105	

DRAWING TITLE

Water Table Gradient Map (10/13/2017)
Old Oaks Neighborhood
Crozier, Virginia

DRAWING NUMBER: FIGURE No. 3

REV: 0



				DR.: SJT	DATE: Oct 2017
				CK.:	
				APP'D.:	
				SCALE: 1" = 100'	
				APEX PROJ. NO.: 757004.001	
REV	BY	DATE		www.apexcos.com	

Post-SCR Monitoring

PC# 2015-4105

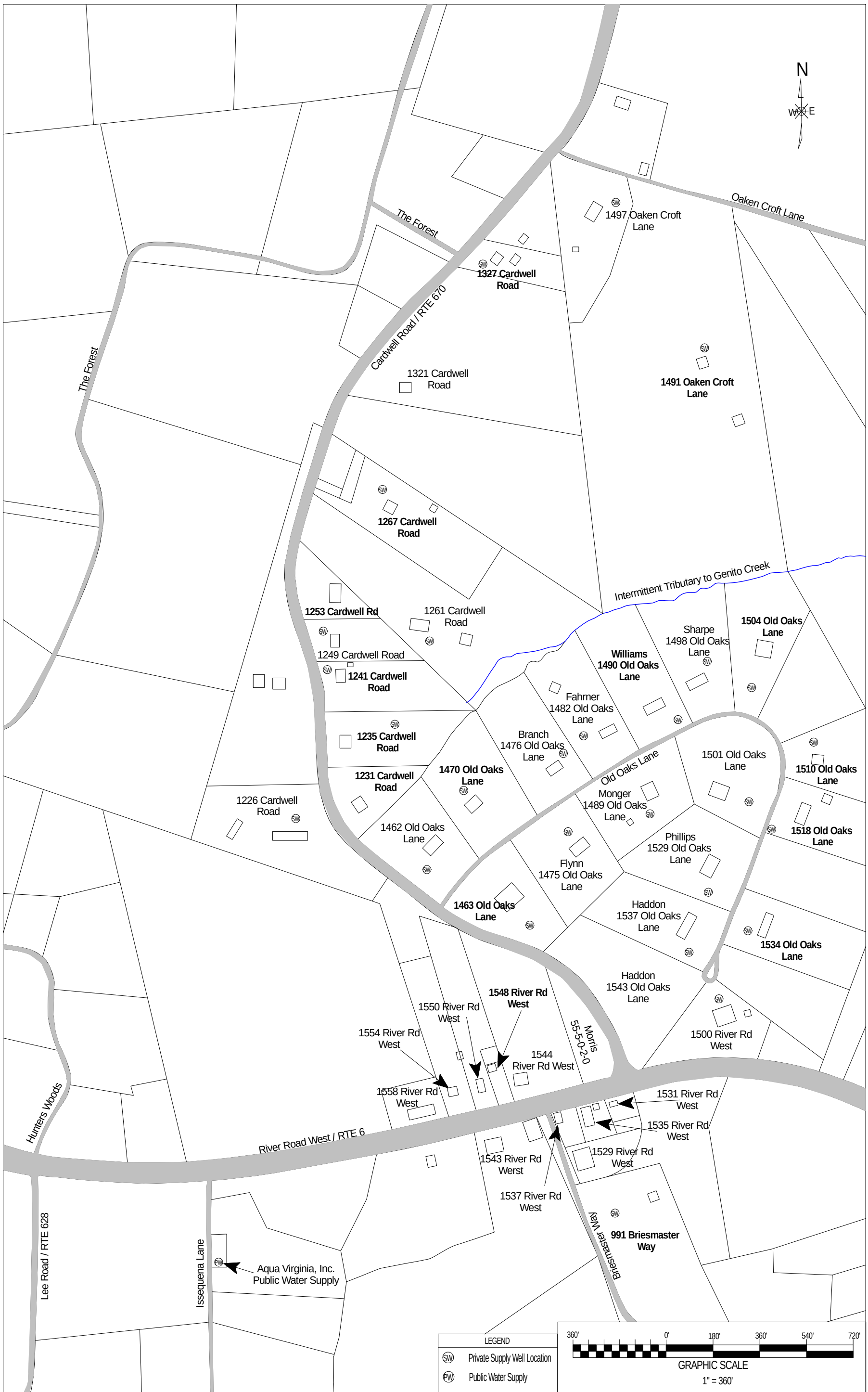
APEX COMPANIES, LLC.
203 WYLDEROSE COURT
MIDLOTHIAN, VIRGINIA 23113
(804) 897-2718

DRAWING TITLE

BTEX Isoconcentration Map (10/13/17)
Old Oaks Neighborhood
Crozier, Virginia

DRAWING NUMBER: FIGURE No. 4

REV: 0



REV	BY	DATE			
				DR.: SJT	Oct 2017
				CK.: MVR	
				APP'D.:	
				SCALE: 1"=360'	
				APEX PROJ. NO.: 757004.001	
				www.apexcos.com	

Post-SCR Monitoring

PC# 2015-4105

APEX COMPANIES, LLC.
203 WYLDEROSE COURT
MIDLOTHIAN, VIRGINIA 23113
(804) 897-2718

DRAWING TITLE

Supply Well Location Map
Old Oaks Neighborhood
Crozier, Virginia

DRAWING NUMBER: FIGURE No. 5

REV: 0

Tables

Table 1
Old Oaks Neighborhood
Current and Historical Groundwater Elevation Data

Well I.D.	Top of Casing Elevation (feet)[1]	Date	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-1	269.53	10/28/2014	53.91	ND[2]	ND	215.62
		1/21/2015	54.16	ND	ND	215.37
		3/10/2015	54.33	ND	ND	215.20
		4/17/2015	54.11	ND	ND	215.42
		11/6/2015	54.56	ND	ND	214.97
		11/30/2015	42.87	ND	ND	226.66
		12/1/2015	44.79	ND	ND	224.74
		12/2/2015	52.18	ND	ND	217.35
		12/3/2015	54.76	ND	ND	214.77
		1/20/2016	54.83	ND	ND	214.70
		7/25/2016	53.61	ND	ND	215.92
		8/17/2016	53.51	ND	ND	216.02
		10/5/2016	53.58	ND	ND	215.95
		10/12/2016	53.57	ND	ND	215.96
		2/2/2017	53.77	ND	ND	215.76
		2/14/2017	53.61	ND	ND	215.92
		3/13/2017	53.90	ND	ND	215.63
		7/14/2017	54.29	ND	ND	215.24
		8/3/2017	54.39	ND	ND	215.14
		8/18/2017	54.39	ND	ND	215.14
		9/7/2017	56.43	ND	ND	213.10
		9/15/2017	54.65	ND	ND	214.88
		10/13/2017	54.85	ND	ND	214.68

Table 1
Old Oaks Neighborhood
Current and Historical Groundwater Elevation Data

Well I.D.	Top of Casing Elevation (feet)[1]	Date	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-2	260.63	10/28/2014	38.81	ND	ND	221.82
		1/21/2015	39.80	ND	ND	220.83
		3/10/2015	40.25	ND	ND	220.38
		4/17/2015	40.21	ND	ND	220.42
		11/6/2015	39.99	ND	ND	220.64
		11/30/2015	42.03	ND	ND	218.60
		12/1/2015	40.23	ND	ND	220.40
		12/2/2015	40.34	ND	ND	220.29
		12/3/2015	40.31	ND	ND	220.32
		1/20/2016	40.44	ND	ND	220.19
		7/25/2016	38.06	ND	ND	222.57
		8/17/2016	37.98	ND	ND	222.65
		10/5/2016	38.31	ND	ND	222.32
		10/12/2016	38.34	ND	ND	222.29
		2/2/2017	39.23	ND	ND	221.40
		2/14/2017	39.20	ND	ND	221.43
		3/13/2017	39.48	ND	ND	221.15
		7/14/2017	39.77	ND	ND	220.86
		8/3/2017	39.89	ND	ND	220.74
		8/18/2017	39.89	ND	ND	220.74
		9/7/2017	40.10	ND	ND	220.53
		9/15/2017	40.09	ND	ND	220.54
		10/13/2017	40.39	ND	ND	220.24

Table 1
Old Oaks Neighborhood
Current and Historical Groundwater Elevation Data

Well I.D.	Top of Casing Elevation (feet)[1]	Date	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-3	267.30	10/28/2014	43.35	**43.14**	**0.21**	223.79
		12/17/2014	43.89	**43.63**	**0.26**	223.22
		1/21/2015	44.57	**43.97**	**0.60**	222.28
		2/25/2015 (Pre-AFVR)	44.60	**44.15**	**0.45**	222.36
		2/25/2015 (Post-AFVR)	46.80	ND	ND	220.50
		3/10/2015	44.56	**44.55**	**0.01**	222.73
		4/17/2015	44.36	**44.34**	**0.02**	222.96
		11/6/2015	44.33	**44.09**	**0.24**	223.15
		11/30/2015	44.51	**44.33**	**0.18**	222.93
		12/1/2015	44.82	**44.71**	**0.11**	222.56
		12/2/2015	44.72	**44.64**	**0.08**	222.64
		12/3/2015	Recovery Well Location			
		12/4/2015	46.55	**46.54**	**0.01**	220.76
		1/20/2016	44.31	ND	ND	222.99
		7/25/2016	42.84	**42.77**	**0.07**	224.51
		8/17/2016	42.75	**42.67**	**0.08**	224.61
		10/5/2016	42.88	**42.85**	**0.03**	224.44
		10/12/2016	42.84	**42.84**	**Sheen**	224.46
		2/2/2017	43.25	**43.23**	**0.02**	224.07
		2/14/2017	43.08	**43.06**	**0.02**	224.24
		3/13/2017	43.54	**43.51**	**0.03**	223.78
		7/14/2017	44.20	**44.04**	**0.16**	223.22
		8/3/2017	44.27	**44.19**	**0.08**	223.09
		8/18/2017	44.19	**44.12**	**0.07**	223.16
		9/7/2017	44.72	**44.70**	**0.02**	222.60
		9/15/2017	44.71	**44.71**	**Sheen**	222.59
		10/13/2017	45.14	**45.14**	**Sheen**	222.16

Table 1
Old Oaks Neighborhood
Current and Historical Groundwater Elevation Data

Well I.D.	Top of Casing Elevation (feet)[1]	Date	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-4	267.31	10/28/2014	44.19	ND	ND	223.12
		1/21/2015	45.39	ND	ND	221.92
		3/10/2015	45.69	**45.69**	**Sheen**	221.62
		4/17/2015	45.30	ND	ND	222.01
		11/6/2015	45.19	ND	ND	222.12
		11/30/2015	45.24	ND	ND	222.07
		12/1/2015	45.13	ND	ND	222.18
		12/2/2015	45.04	ND	ND	222.27
		12/3/2015	45.39	ND	ND	221.92
		1/20/2016	45.08	ND	ND	222.23
		7/25/2016	43.23	ND	ND	224.08
		8/17/2016	43.30	ND	ND	224.01
		10/5/2016	43.71	ND	ND	223.60
		10/12/2016	43.72	ND	ND	223.59
		2/2/2017	44.13	ND	ND	223.18
		2/14/2017	44.08	ND	ND	223.23
		3/13/2017	44.37	ND	ND	222.94
		7/14/2017	44.93	ND	ND	222.38
		8/3/2017	45.09	ND	ND	222.22
		8/18/2017	45.06	ND	ND	222.25
		9/7/2017	45.33	ND	ND	221.98
		9/15/2017	45.42	ND	ND	221.89
		10/13/2017	45.80	ND	ND	221.51

Table 1
Old Oaks Neighborhood
Current and Historical Groundwater Elevation Data

Well I.D.	Top of Casing Elevation (feet)[1]	Date	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-5	266.01	10/28/2014	41.42	ND	ND	224.59
		1/21/2015	42.52	ND	ND	223.49
		3/10/2015	42.96	ND	ND	223.05
		4/17/2015	42.37	ND	ND	223.64
		11/6/2015	42.52	ND	ND	223.49
		11/30/2015	45.63	ND	ND	220.38
		12/1/2015	42.51	ND	ND	223.50
		12/2/2015	41.93	ND	ND	224.08
		12/3/2015	42.72	ND	ND	223.29
		1/20/2016	42.76	ND	ND	223.25
		7/25/2016	40.77	ND	ND	225.24
		8/17/2016	40.67	ND	ND	225.34
		10/5/2016	40.33	ND	ND	225.68
		10/12/2016	40.75	ND	ND	225.26
		2/2/2017	41.69	ND	ND	224.32
		2/14/2017	41.65	ND	ND	224.36
		3/13/2017	41.93	ND	ND	224.08
		7/14/2017	42.41	ND	ND	223.60
		8/3/2017	42.52	ND	ND	223.49
		8/18/2017	42.52	ND	ND	223.49
		9/7/2017	42.27	ND	ND	223.74
		9/15/2017	42.73	ND	ND	223.28
		10/13/2017	43.02	ND	ND	222.99

Table 1
Old Oaks Neighborhood
Current and Historical Groundwater Elevation Data

Well I.D.	Top of Casing Elevation (feet)[1]	Date	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-6	259.48	10/28/2014	38.55	ND	ND	220.93
		1/21/2015	39.58	ND	ND	219.90
		3/10/2015	39.99	ND	ND	219.49
		4/17/2015	39.82	ND	ND	219.66
		11/6/2015	39.79	ND	ND	219.69
		11/30/2015	41.29	ND	ND	218.19
		12/1/2015	39.93	ND	ND	219.55
		12/2/2015	39.89	ND	ND	219.59
		12/3/2015	40.07	ND	ND	219.41
		1/20/2016	40.21	ND	ND	219.27
		7/25/2016	37.62	ND	ND	221.86
		8/17/2016	37.59	ND	ND	221.89
		10/5/2016	38.04	ND	ND	221.44
		10/12/2016	38.09	ND	ND	221.39
		2/2/2017	38.99	ND	ND	220.49
		2/14/2017	38.97	ND	ND	220.51
		3/13/2017	39.22	ND	ND	220.26
		7/14/2017	39.41	ND	ND	220.07
		8/3/2017	39.55	ND	ND	219.93
		8/18/2017	39.58	ND	ND	219.90
		9/7/2017	39.82	ND	ND	219.66
		9/15/2017	39.84	ND	ND	219.64
		10/13/2017	40.16	ND	ND	219.32

Table 1
Old Oaks Neighborhood
Current and Historical Groundwater Elevation Data

Well I.D.	Top of Casing Elevation (feet)[1]	Date	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-7	259.99	12/16/2014	49.35	ND	ND	210.64
		1/21/2015	49.57	ND	ND	210.42
		3/10/2015	49.81	ND	ND	210.18
		4/17/2015	49.32	ND	ND	210.67
		11/6/2015	49.07	ND	ND	210.92
		1/20/2016	49.83	ND	ND	210.16
		7/25/2016	48.67	ND	ND	211.32
		8/17/2016	48.85	ND	ND	211.14
		10/5/2016	48.55	ND	ND	211.44
		10/12/2016	48.95	ND	ND	211.04
		2/2/2017	49.32	ND	ND	210.67
		2/14/2017	49.28	ND	ND	210.71
		3/13/2017	49.45	ND	ND	210.54
		7/14/2017	49.34	ND	ND	210.65
		8/3/2017	49.72	ND	ND	210.27
		8/18/2017	48.03	ND	ND	211.96
		9/7/2017	49.03	ND	ND	210.96
		9/15/2017	49.95	ND	ND	210.04
		10/13/2017	50.15	ND	ND	209.84

Table 1
Old Oaks Neighborhood
Current and Historical Groundwater Elevation Data

Well I.D.	Top of Casing Elevation (feet)[1]	Date	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-8	273.19	12/16/2014	59.35	ND	ND	213.84
		12/17/2014	59.42	ND	ND	213.77
		1/21/2015	59.28	ND	ND	213.91
		3/10/2015	59.84	ND	ND	213.35
		4/17/2015	59.67	ND	ND	213.52
		11/6/2015	Not located due to overgrown vegetation			
		1/20/2016	60.43	ND	ND	212.76
		7/25/2016	58.98	ND	ND	214.21
		8/17/2016	58.82	ND	ND	214.37
		10/5/2016	58.79	ND	ND	214.40
		10/12/2016	58.91	ND	ND	214.28
		2/2/2017	59.29	ND	ND	213.90
		2/14/2017	59.21	ND	ND	213.98
		3/13/2017	59.42	ND	ND	213.77
		7/14/2017	59.78	ND	ND	213.41
		8/3/2017	59.87	ND	ND	213.32
		8/18/2017	59.37	ND	ND	213.82
		9/7/2017	57.62	ND	ND	215.57
		9/15/2017	60.09	ND	ND	213.10
		10/13/2017	60.30	ND	ND	212.89

Table 1
Old Oaks Neighborhood
Current and Historical Groundwater Elevation Data

Well I.D.	Top of Casing Elevation (feet)[1]	Date	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-9	271.04	12/16/2014	55.24	ND	ND	215.80
		1/21/2015	55.46	ND	ND	215.58
		3/10/2015	55.55	ND	ND	215.49
		4/17/2015	55.34	ND	ND	215.70
		11/6/2015	Not located due to overgrown vegetation			
		1/20/2016	55.69	ND	ND	215.35
		7/25/2016	54.63	ND	ND	216.41
		8/17/2016	54.68	ND	ND	216.36
		10/5/2016	54.33	ND	ND	216.71
		10/12/2016	54.34	ND	ND	216.70
		2/2/2017	55.01	ND	ND	216.03
		2/14/2017	54.89	ND	ND	216.15
		3/13/2017	55.11	NN	ND	215.93
		7/14/2017	54.55	ND	ND	216.49
		8/3/2017	57.62	ND	ND	213.42
		8/18/2017	55.12	ND	ND	215.92
		9/7/2017	55.39	ND	ND	215.65
		9/15/2017	55.87	ND	ND	215.17
		10/13/2017	56.17	ND	ND	214.87

Table 1
Old Oaks Neighborhood
Current and Historical Groundwater Elevation Data

Well I.D.	Top of Casing Elevation (feet)[1]	Date	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-10	268.22	12/16/2014	44.95	**44.94**	**0.01**	223.26
		12/17/2014	45.03	**45.03**	**Sheen**	223.19
		1/21/2015	45.38	**45.38**	**Sheen**	222.84
		3/10/2015	45.79	ND	ND	222.43
		4/17/2015	45.80	ND	ND	222.42
		11/6/2015	45.63	ND	ND	222.59
		11/30/2015	45.74	ND	ND	222.48
		12/1/2015	45.87	ND	ND	222.35
		12/2/2015	45.70	ND	ND	222.52
		12/3/2015	45.93	ND	ND	222.29
		12/4/2015	46.26	ND	ND	221.96
		1/20/2016	45.91	ND	ND	222.31
		7/25/2016	44.24	ND	ND	223.98
		8/17/2016	44.12	ND	ND	224.10
		10/5/2016	44.21	ND	ND	224.01
		10/12/2016	44.22	ND	ND	224.00
		2/2/2017	44.56	ND	ND	223.66
		2/14/2017	44.46	ND	ND	223.76
		3/13/2017	44.85	ND	ND	223.37
		7/14/2017	45.39	ND	ND	222.83
		8/3/2017	45.48	ND	ND	222.74
		8/18/2017	45.41	ND	ND	222.81
		9/7/2017	45.67	ND	ND	222.55
		9/15/2017	45.74	ND	ND	222.48
		10/13/2017	46.09	ND	ND	222.13

Table 1
Old Oaks Neighborhood
Current and Historical Groundwater Elevation Data

Well I.D.	Top of Casing Elevation (feet)[1]	Date	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-11	266.83	12/16/2014	43.30	**43.30**	**Sheen**	223.53
		12/17/2014	43.10	**43.10**	**Sheen**	223.73
		1/21/2015	43.55	**43.55**	**Sheen**	223.28
		2/25/2015 (Pre-AFVR)	43.70	ND	ND	223.13
		2/25/2015 (Post-AFVR)	43.66	ND	ND	223.17
		3/10/2015	43.95	ND	ND	222.88
		4/17/2015	43.81	ND	ND	223.02
		11/6/2015	43.62	ND	ND	223.21
		11/30/2015	43.78	ND	ND	223.05
		12/1/2015	44.10	ND	ND	222.73
		12/2/2015	43.96	ND	ND	222.87
		12/3/2015	43.80	ND	ND	223.03
		12/4/2015	44.69	ND	ND	222.14
		1/20/2016	43.89	ND	ND	222.94
		7/25/2016	42.12	ND	ND	224.71
		8/17/2016	42.09	ND	ND	224.74
		10/5/2016	42.07	ND	ND	224.76
		10/12/2016	42.21	**42.21**	**Sheen**	224.62
		2/2/2017	42.64	**42.64**	**Sheen**	224.19
		2/14/2017	42.50	**42.50**	**Sheen**	224.33
		3/13/2017	42.94	**42.94**	**Sheen**	223.89
		7/14/2017	43.46	ND	ND	223.37
		8/3/2017	43.59	ND	ND	223.24
		8/18/2017	43.52	ND	ND	223.31
		9/7/2017	43.61	ND	ND	223.22
		9/15/2017	43.83	ND	ND	223.00
		10/13/2017	44.17	ND	ND	222.66

Table 1
Old Oaks Neighborhood
Current and Historical Groundwater Elevation Data

Well I.D.	Top of Casing Elevation (feet)[1]	Date	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-12	267.18	12/16/2014	43.32	**43.19**	**0.13**	223.76
		12/17/2014	43.30	**43.30**	**Sheen**	223.88
		1/21/2015	43.97	**43.68**	**0.29**	222.99
		2/25/2015 (Pre-AFVR)	43.80	**43.25**	**0.55**	222.97
		2/25/2015 (Post-AFVR)	46.96	ND	ND	220.22
		3/10/2015	44.20	**44.19**	**0.01**	222.97
		4/17/2015	43.90	**43.76**	**0.14**	223.39
		11/6/2015	44.18	**43.62**	**0.56**	223.42
		11/30/2015	44.14	**43.79**	**0.35**	223.30
		12/1/2015	Recovery Well Location			
		12/2/2015	Recovery Well Location			
		12/3/2015	Recovery Well Location			
		12/4/2015	45.68	**45.66**	**0.02**	221.52
		1/20/2016	43.97	**43.94**	**0.03**	223.23
		7/25/2016	42.21	**42.21**	**Sheen**	224.97
		8/17/2016	42.16	**42.16**	**Sheen**	225.02
		10/5/2016	42.37	**42.36**	**0.01**	224.82
		10/12/2016	42.39	**42.37**	**0.02**	224.81
		2/2/2017	42.84	**42.76**	**0.08**	224.40
		2/14/2017	42.74	**42.69**	**0.05**	224.48
		3/13/2017	43.17	**43.08**	**0.09**	224.08
		7/14/2017	43.83	**43.61**	**0.21**	223.51
		8/3/2017	43.94	**43.75**	**0.19**	223.38
		8/18/2017	43.81	**43.70**	**0.11**	223.45
		9/7/2017	44.12	**44.11**	**0.01**	223.07
		9/15/2017	44.13	**44.13**	**Sheen**	223.05
		10/13/2017	44.50	**44.50**	**Sheen**	222.68

Table 1
Old Oaks Neighborhood
Current and Historical Groundwater Elevation Data

Well I.D.	Top of Casing Elevation (feet)[1]	Date	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-13	266.76	12/16/2014	42.41	ND	ND	224.35
		12/17/2014	42.50	ND	ND	224.26
		1/21/2015	43.02	ND	ND	223.74
		2/25/2015 (Pre-AFVR)	43.21	ND	ND	223.55
		2/25/2015 (Post-AFVR)	43.15	ND	ND	223.61
		3/10/2015	43.45	ND	ND	223.31
		4/17/2015	43.18	ND	ND	223.58
		11/6/2015	42.43	ND	ND	224.33
		11/30/2015	42.99	ND	ND	223.77
		12/1/2015	42.97	ND	ND	223.79
		12/2/2015	42.91	ND	ND	223.85
		12/3/2015	43.28	ND	ND	223.48
		1/20/2016	43.04	ND	ND	223.72
		7/25/2016	41.09	ND	ND	225.67
		8/17/2016	40.95	ND	ND	225.81
		10/5/2016	41.03	ND	ND	225.73
		10/12/2016	41.19	ND	ND	225.57
		2/2/2017	41.97	ND	ND	224.79
		2/14/2017	41.89	ND	ND	224.87
		3/13/2017	42.27	ND	ND	224.49
		7/14/2017	42.72	ND	ND	224.04
		8/3/2017	42.87	ND	ND	223.89
		8/18/2017	42.83	ND	ND	223.93
		9/7/2017	43.09	ND	ND	223.67
		9/15/2017	43.14	ND	ND	223.62
		10/13/2017	43.52	**43.52**	**Sheen**	223.24

Table 1
Old Oaks Neighborhood
Current and Historical Groundwater Elevation Data

Well I.D.	Top of Casing Elevation (feet)[1]	Date	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-14	267.22	3/10/2015	44.33	ND	ND	222.89
		4/17/2015	44.28	**44.02**	**0.26**	223.14
		11/6/2015	45.26	**43.31**	**1.95**	223.42
		11/30/2015	43.79	**43.46**	**0.33**	223.68
		12/1/2015	Recovery Well Location			
		12/2/2015	Recovery Well Location			
		12/3/2015	Recovery Well Location			
		12/4/2015	45.61	ND	ND	221.61
		1/20/2016	44.35	**44.13**	**0.22**	223.04
		7/25/2016	42.93	**42.31**	**0.62**	224.76
		8/17/2016	42.22	**42.08**	**0.14**	225.11
		10/5/2016	42.06	**42.00**	**0.06**	225.21
		10/12/2016	42.60	**42.58**	**0.02**	224.64
		2/2/2017	43.05	**43.00**	**0.05**	224.21
		2/14/2017	42.93	**42.88**	**0.05**	224.33
		3/13/2017	43.36	**43.32**	**0.04**	223.89
		7/14/2017	43.92	**43.81**	**0.11**	223.38
		8/3/2017	44.05	**43.99**	**0.06**	223.22
		8/18/2017	43.94	**43.91**	**0.03**	223.30
		9/7/2017	44.37	**44.35**	**0.02**	222.87
		9/15/2017	44.44	**44.44**	**Sheen**	222.78
		10/13/2017	44.83	**44.83**	**Sheen**	222.39

Table 1
Old Oaks Neighborhood
Current and Historical Groundwater Elevation Data

Well I.D.	Top of Casing Elevation (feet)[1]	Date	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-15	268.68	3/10/2015	48.46	ND	ND	220.22
		4/17/2015	48.66	ND	ND	220.02
		11/6/2015	48.69	ND	ND	219.99
		11/30/2015	44.12	ND	ND	224.56
		12/1/2015	48.71	ND	ND	219.97
		12/2/2015	48.66	ND	ND	220.02
		12/3/2015	48.68	ND	ND	220.00
		1/20/2016	49.05	ND	ND	219.63
		7/25/2016	47.68	ND	ND	221.00
		8/17/2016	47.49	ND	ND	221.19
		10/5/2016	47.36	ND	ND	221.32
		10/12/2016	47.34	ND	ND	221.34
		2/2/2017	47.45	ND	ND	221.23
		2/14/2017	47.31	ND	ND	221.37
		3/13/2017	47.66	ND	ND	221.02
		7/14/2017	48.13	ND	ND	220.55
		8/3/2017	48.30	ND	ND	220.38
		8/18/2017	48.22	ND	ND	220.46
		9/7/2017	48.49	ND	ND	220.19
		9/15/2017	48.49	ND	ND	220.19
		10/13/2017	48.81	ND	ND	219.87

Table 1
Old Oaks Neighborhood
Current and Historical Groundwater Elevation Data

Well I.D.	Top of Casing Elevation (feet)[1]	Date	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-16	269.28	3/10/2015	49.53	ND	ND	219.75
		4/17/2015	49.59	ND	ND	219.69
		11/6/2015	49.97	ND	ND	219.31
		11/30/2015	44.37	ND	ND	224.91
		12/1/2015	49.23	ND	ND	220.05
		12/2/2015	49.87	ND	ND	219.41
		12/3/2015	49.94	ND	ND	219.34
		1/20/2016	50.14	ND	ND	219.14
		7/25/2016	48.67	ND	ND	220.61
		8/17/2016	48.47	ND	ND	220.81
		10/5/2016	48.47	ND	ND	220.81
		10/12/2016	48.53	ND	ND	220.75
		2/2/2017	48.54	ND	ND	220.74
		2/14/2017	48.53	ND	ND	220.75
		3/13/2017	48.73	ND	ND	220.55
		7/14/2017	49.32	ND	ND	219.96
		8/3/2017	49.46	ND	ND	219.82
		8/18/2017	49.47	ND	ND	219.81
		9/7/2017	49.66	ND	ND	219.62
		9/15/2017	49.70	ND	ND	219.58
		10/13/2017	50.03	ND	ND	219.25

[1] Elevations measured by Apex Companies, LLC relative to arbitrary site datum of 270 feet.

[2] ND = Free product not detected.

Table 2
Old Oaks Neighborhood
Current and Historical Groundwater Analytical Data

Sample ID	102814001-4	31015001-10	12015001-7	101216001-6	101317001-6	102814001-6	31015001-9	12015001-4	101216001-3	101317001-3	102814001-9	31015001-19	12015001-13	101216001-12	101317001-12	102814001-8	31015001-17	12015001-14	101216001-13	101317001-13
Sample Location	**MW-1**					**MW-2**					**MW-3**					**MW-4**				
Date	10/28/14	3/10/15	1/20/16	10/12/16	10/13/17	10/28/14	3/10/15	1/20/16	10/12/16	10/13/17	10/28/14	3/10/15	1/20/16	10/12/16	10/13/17	10/28/14	3/10/15	1/20/16	10/12/16	10/13/17
TPH GRO (mg/L)[1]	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	**137**	**112**	**143**	**123**	**113**	**60.8**	**61.2**	**56.3**	**51.6**	**53.7**
1,1,2-Trichloroethane (ug/L)[2]	<1.00	<1.00	<1.00	<0.11	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	8	<5.00	<5.00	<5.00	<1.00	<5.00	<5.00	<5.00	<5.00
1,2,4-Trimethylbenzene (ug/L)	<1.00	<1.00	<1.00	<0.12	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**1,980**	**2,070**	**2,840**	**3,460**	**2,690**	**2,050**	**2,350**	**2,270**	**2,290**	**1,930**
1,2-Dichloroethane (ug/L)	<1.00	<1.00	<1.00	<0.13	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**798**	**415**	**188**	**258**	**145**	**327**	**304**	**228**	**181**	**146**
1,3,5-Trimethylbenzene	<1.00	<1.00	<1.00	<0.14	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**682**	**582**	**901**	**806**	**670**	**554**	**650**	**546**	**616**	**453**
2-Butanone (MEK) (ug/L)	**15.8**	**30.5**	<5.00	<0.15	<10.0	**16.8**	<10.0	<5.00	<10.0	<10.0	**529**	**686**	**616**	**652**	**635**	**139**	**<50.0**	<25.0	<50.0	<50.0
2-Hexanone (MBK) (ug/L)	<10.0	<10.0	<5.00	<0.16	<5.00	<10.0	<10.0	<5.00	<5.00	<5.00	**75.4**	**91.1**	**120.0**	**124**	**106**	**202**	**231**	**194**	**186**	**168**
4-Isopropyltoluene (ug/L)	<1.00	<1.00	<1.00	<0.17	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	<5.00	<5.00	<5.00	<5.00	**6.23**	**6.24**	**5.83**	**6.72**	**6.67**
4-Methyl-2-pentanone (ug/L)	<10.0	<10.0	<5.00	<0.18	<5.00	<10.0	<10.0	<5.00	<5.00	<5.00	<50.0	58.0	**72.8**	**81.4**	**60.8**	**89.7**	**106.0**	**85**	**76.0**	**61.3**
Acetone (ug/L)	**15.8**	**18.0**	<10.0	<0.19	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<50.0	<50.0	<50.0	<50.0	<50.0	<10.0	<50.0	<50.0	<50.0	<50.0
Benzene (ug/L)	<1.00	<1.00	<1.00	<0.20	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**27,800**	**24,700**	**27,000**	**17,100**	**21,100**	**8,590**	**8,420**	**7,740**	**6,280**	**5,910**
Di-isopropyl ether (DIPE) (ug/L)	<5.00	<5.00	<5.00	<0.21	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	**7,100**	**5,240**	**2,210**	**2,860**	**2,560**	**1,100**	**1,260**	**778**	**723**	**480**
Ethylbenzene (ug/L)	<1.00	<1.00	<1.00	<0.22	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**3,090**	**3,620**	**3,690**	**4,210**	**3,570**	**2,190**	**2,500**	**2,300**	**2,270**	**2,340**
Isopropylbenzene (ug/L)	<1.00	<1.00	<1.00	<0.23	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**63**	**68**	**100.0**	**78.2**	**71.1**	**79.2**	**95.8**	**85.9**	**80.8**	**81.8**
MTBE (ug/L)	<1.00	<1.00	<1.00	<0.24	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	<5.00	<5.00	<5.00	<5.00	**28.6**	**33.2**	**14.0**	**14.8**	**6.86**
Naphthalene (ug/L)	<1.00	<1.00	<1.00	<0.25	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**615**	**601**	**667**	**611**	**529**	**717**	**901**	**798**	**767**	**728**
n-Butylbenzene (ug/L)	<5.00	<5.00	<1.00	<0.26	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<5.00	15.2	**27.5**	**24.1**	**21.1**	<5.00	23.2	**20.8**	**25.0**	**21.4**
n-Propylbenzene (ug/L)	<1.00	<1.00	<1.00	<0.27	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**311**	**277**	**391**	**371**	**265**	**257**	**297**	**241**	**309**	**221**
sec-Butylbenzene (ug/L)	<1.00	<1.00	<1.00	<0.28	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**10.5**	**<5.00**	<5.00	13.8	**11.5**	**11.1**	**<5.00**	<5.00	**12.0**	**10.4**
Styrene (ug/L)	<1.00	<1.00	<1.00	<0.29	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**299**	**329**	**388**	**269**	**264**	**14.8**	**9.7**	<5.00	**8.98**	<5.00
tert-Butylbenzene (ug/L)	<1.00	<1.00	<1.00	<0.30	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	<5.00	<5.00	<5.00	<5.00	**1.16**	**<5.00**	<5.00	<5.00	<5.00
Toluene (ug/L)	<1.00	<1.00	<1.00	<0.31	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**45,000**	**45,300**	**42,600**	**39,000**	**39,500**	**21,900**	**21,000**	**23,500**	**18,100**	**17,200**
Total BTEX (ug/L)	<6.00	<6.00	<6.00	<0.32	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	**93,690**	**94,920**	**97,490**	**85,110**	**87,670**	**44,680**	**46,420**	**47,040**	**39,850**	**38,550**
Total Xylenes (ug/L)	<3.00	<3.00	<3.00	<0.33	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	**17,800**	**21,300**	**24,200**	**24,800**	**23,500**	**12,000**	**14,500**	**13,500**	**13,200**	**13,100**
1,2-Dibromoethane (EDB) (ug/L)[3]	<0.01	<0.010	<0.010	<0.34	<0.010	<0.01	<0.010	<0.010	<0.010	<0.010	**562**	**605**	**360**	**388**	**448**	**264**	**290**	**90.2**	**198.0**	**182**

[1] Total petroleum hydrocarbons (TPH) gasoline range organics (GRO) analyzed via method 8015C and reported in milligrams per liter (mg/L).

[2] Volatile organic compounds (VOCs) analyzed via method 8260B and reported in micrograms per liter (ug/L).

[3] 1,2-Dibromoethane (EDB) analyzed via method 8011 and reported in micrograms per liter (ug/L).

Table 2
Old Oaks Neighborhood
Current and Historical Groundwater Analytical Data

Sample ID	**102814001-7**	**31015001-16**	**12015001-6**	**101216001-5**	**101317001/-5**	**102814001-5**	**31015001-11**	**12015001-5**	**101216001-4**	**101317001-4**	**121714001-3**	**31015001-6**	**12015001-9**	**101216001-8**	**101317001-8**	**121714001-4**	**31015001-7**	**12015001-8**	**101216001-7**	**101317001-7**
Sample Location	**MW-5**					**MW-6**					**MW-7**					**MW-8**				
Date	10/28/14	3/10/15	1/20/16	10/12/16	10/13/17	10/28/14	3/10/15	1/20/16	10/12/16	10/13/17	12/16/14	3/10/15	1/20/16	10/12/16	10/13/17	12/17/14	3/10/15	1/20/16	10/12/16	10/13/17
TPH GRO (mg/L)[1]	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,2-Trichloroethane (ug/L)[2]	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
1,2,4-Trimethylbenzene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
1,2-Dichloroethane (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
1,3,5-Trimethylbenzene	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
2-Butanone (MEK) (ug/L)	**17.9**	<10.0	<5.00	<10.0	<10.0	**25.9**	<10.0	<5.00	<10.0	<10.0	<10.0	**16**	<5.00	<10.0	<10.0	<10.0	**30.7**	<5.00	<10.0	<10.0
2-Hexanone (MBK) (ug/L)	<10.0	<10.0	<5.00	<5.00	<5.00	<10.0	<10.0	<5.00	<5.00	<5.00	<10.0	<10.0	<5.00	<5.00	<5.00	<10.0	<10.0	<5.00	<5.00	<5.00
4-Isopropyltoluene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
4-Methyl-2-pentanone (ug/L)	<10.0	<10.0	<5.00	<5.00	<5.00	<10.0	<10.0	<5.00	<5.00	<5.00	<10.0	<10.0	<5.00	<5.00	<5.00	<10.0	<10.0	<5.00	<5.00	<5.00
Acetone (ug/L)	<10.0	<10.0	<10.0	<10.0	<10.0	**10.0**	<10.0	<10.0	<10.0	<10.0	<10.0	**25.3**	<10.0	<10.0	<10.0	<10.0	**24.7**	<10.0	<10.0	<10.0
Benzene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Di-isopropyl ether (DIPE) (ug/L)	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Ethylbenzene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Isopropylbenzene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
MTBE (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Naphthalene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
n-Butylbenzene (ug/L)	<5.00	<5.00	<1.00	<1.00	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00
n-Propylbenzene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
sec-Butylbenzene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Styrene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
tert-Butylbenzene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Toluene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Total BTEX (ug/L)	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00
Total Xylenes (ug/L)	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00
1,2-Dibromoethane (EDB) (ug/L)[3]	<0.01	<0.010	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.010

[1] Total petroleum hydrocarbons (TPH) gasoline range organics (GRO) analyzed via method 8015C and reported in milligrams per liter (mg/L).

[2] Volatile organic compounds (VOCs) analyzed via method 8260B and reported in micrograms per liter (ug/L).

[3] 1,2-Dibromoethane (EDB) analyzed via method 8011 and reported in micrograms per liter (ug/L).

Table 2
Old Oaks Neighborhood
Current and Historical Groundwater Analytical Data

Sample ID	121714001-5	31015001-8	12015001-12	101216001-11	101317001-11	121714001-6	31015001-14	12015001-16	101216001-15	101317001-15	121714001-7	31015001-15	12015001-15	101216001-14	101317001-14	121714001-8	31015001-18	12015001-18	101216001-17	101317001-17
Sample Location	**MW-9**					**MW-10**					**MW-11**					**MW-12**				
Date	12/16/14	3/10/15	1/20/16	10/12/16	10/13/17	12/16/14	3/10/15	1/20/16	10/12/16	10/13/17	12/16/14	3/10/15	1/20/16	10/12/16	10/13/17	12/16/14	3/10/15	1/20/16	10/12/16	10/13/17
TPH GRO (mg/L)[1]	<0.10	<0.10	<0.10	<0.10	<0.10	**17.5**	**51.9**	**53.1**	**39.5**	**43.4**	**39.8**	**53.3**	**56.1**	**37.9**	**49.5**	**118**	**107**	**117**	**145**	**145**
1,1,2-Trichloroethane (ug/L)[2]	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	<5.00	<5.00	<5.00	<1.00	<5.00	<5.00	<5.00	<5.00	<1.00	<5.00	<5.00	<5.00	<5.00
1,2,4-Trimethylbenzene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	**638**	**1940**	**1970**	**1,750**	**1,570**	**1,340**	**1,870**	**1,510**	**1,700**	**1,510**	**2,310**	**2,800**	**3,550**	**3,330**	**4,510**
1,2-Dichloroethane (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	**16.5**	**18.6**	**15.9**	**19.0**	**15.4**	**702**	**543**	**425**	**340**	**530**	**275**	**8.92**	<5.00	**7.50**	**7.68**
1,3,5-Trimethylbenzene	<1.00	<1.00	<1.00	<1.00	<1.00	**167**	**610**	**621**	**653**	**508**	**439**	**689**	**602**	**682**	**542**	**808**	**787**	**1,010**	**1,010**	**1,280**
2-Butanone (MEK) (ug/L)	<10.0	23.8	<5.00	<10.0	<10.0	**277**	**719**	**645**	**657**	**640**	**158**	**135**	<25.0	**179**	<50.0	**283**	**216**	<25.0	<50.0	**195**
2-Hexanone (MBK) (ug/L)	<10.0	<10.0	<5.00	<5.00	<5.00	**63.4**	**99.2**	**93**	**96.8**	**95.4**	<50.0	<50.0	<25.0	**29.7**	**28.3**	**119**	**<50.0**	**30.9**	**44.0**	**47.5**
4-Isopropyltoluene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	**7.16**	<5.00	<5.00	<5.00	<5.00	**11.4**
4-Methyl-2-pentanone (ug/L)	<10.0	<10.0	<5.00	<5.00	<5.00	**68.1**	**98.5**	**87.5**	**82.2**	**82.5**	<50.0	<50.0	<25.0	**26.0**	<25.0	<50.0	<50.0	<25.0	<25.0	<25.0
Acetone (ug/L)	<10.0	39.1	<10.0	<10.0	<10.0	<50.0	<50.0	<50.0	<50.0	<50.0	**392**	**<50.0**	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Benzene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	**2,580**	**4,740**	**3,540**	**3,230**	**3,180**	**7,210**	**7,080**	**5,190**	**3,600**	**6,240**	**30,500**	**17,200**	**11,300**	**4,080**	**6,210**
Di-isopropyl ether (DIPE) (ug/L)	<5.00	<5.00	<5.00	<5.00	<5.00	**166**	**230**	**163**	**195**	**141**	**5,680**	**5,100**	**3,590**	**3,270**	**4,720**	**2,800**	**103**	**56.4**	**86.6**	**69.9**
Ethylbenzene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	**842**	**2460**	**2370**	**2,000**	**2,310**	**1,330**	**1,750**	**1,870**	**1,670**	**1,510**	**4,030**	**4,040**	**4,620**	**3,100**	**4,440**
Isopropylbenzene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	**21**	**62.1**	**53.9**	**51.3**	**52.5**	**31.5**	**45.3**	**42.3**	**44.8**	**37.7**	**86.1**	**86.8**	**110**	**88.9**	**130**
MTBE (ug/L)	**2.37**	**1.89**	**1.58**	<1.00	<1.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Naphthalene (ug/L)	<1.00	9.22	<1.00	<1.00	<1.00	**129**	**468**	**354**	**317**	**318**	**205**	**418**	**398**	**396**	**356**	**623**	**793**	**885**	**722**	**798**
n-Butylbenzene (ug/L)	<5.00	<5.00	<1.00	<1.00	<1.00	<5.00	16.7	10.4	**16.8**	**13.4**	<5.00	13.4	**11.1**	**17.2**	**9.34**	<5.00	<5.00	**50.0**	**33.1**	**89.1**
n-Propylbenzene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	**83.1**	**263**	**195**	**249**	**204**	**117**	**162**	**148**	**214**	**123**	**386**	**376**	**438**	**450**	**532**
sec-Butylbenzene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	<5.00	<5.00	<5.00	**7.63**	**5.93**	**<5.00**	<5.00	**9.81**	**6.97**	**12.6**	**<5.00**	<5.00	<5.00	**33.6**
Styrene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	**17.2**	**85.7**	**80**	**57.7**	**60.5**	**13.6**	**25.2**	**32.8**	**32.8**	**28**	**498**	**425**	**482**	**214**	**401**
tert-Butylbenzene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Toluene (ug/L)	<1.00	<1.00	<1.00	<1.00	<1.00	**7,530**	**19,300**	**19,100**	**14,600**	**13,800**	**13,700**	**17,000**	**15,800**	**13,000**	**15,900**	**46,800**	**41,500**	**43,000**	**20,200**	**35,600**
Total BTEX (ug/L)	<6.00	<6.00	<6.00	<6.00	<6.00	**16,372**	**41,700**	**41,310**	**31,630**	**33,590**	**30,410**	**37,730**	**32,820**	**30,370**	**35,950**	**105,030**	**86,140**	**89,920**	**46,780**	**73,950**
Total Xylenes (ug/L)	<3.00	<3.00	<3.00	<3.00	<3.00	**5,420**	**15,200**	**16,300**	**11,800**	**14,300**	**8,170**	**11,900**	**9,960**	**12,100**	**12,300**	**23,700**	**23,400**	**31,000**	**19,400**	**27,700**
1,2-Dibromoethane (EDB) (ug/L)[3]	<0.01	<0.010	<0.010	<0.010	<0.010	**20**	**46.6**	**16.1**	**17.3**	**29.9**	**52.2**	**72.4**	**28.5**	**36.7**	**30.5**	**356**	**150**	**30.2**	**9.33**	**31.6**

[1] Total petroleum hydrocarbons (TPH) gasoline range organics (GRO) analyzed via method 8015C and reported in milligrams per liter (mg/L).

[2] Volatile organic compounds (VOCs) analyzed via method 8260B and reported in micrograms per liter (ug/L).

[3] 1,2-Dibromoethane (EDB) analyzed via method 8011 and reported in micrograms per liter (ug/L).

Table 2
Old Oaks Neighborhood
Current and Historical Groundwater Analytical Data

Sample ID	121714001-9	31015001-12	12015001-17	101216001-16	101317001-16	31015001-13	12015001-19	101216001-18	101317001-18	31015001-4	12015001-11	101216001-10	101317001-10	31015001-5	12015001-10	101216001-9	101317001-9
Sample Location	**MW-13**					**MW-14**				**MW-15**				**MW-16**			
Date	12/16/14	3/10/15	1/20/16	10/12/16	10/13/17	3/10/15	1/20/16	10/12/16	10/13/17	3/10/15	1/20/16	10/12/16	10/13/17	3/10/15	1/20/16	10/12/16	10/13/17
TPH GRO (mg/L)[1]	**7.5**	**18.6**	**14.9**	**6.55**	**14.3**	**241**	**Not sampled due to presence of free product**	**115**	**121**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,2-Trichloroethane (ug/L)[2]	<1.00	<5.00	<1.00	<1.00	<1.00	<5.00		<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
1,2,4-Trimethylbenzene (ug/L)	**807**	**1480**	**1,270**	**391**	**1,170**	**2,550**		**2,270**	**2,670**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
1,2-Dichloroethane (ug/L)	**72.8**	**96**	**51.0**	**21.0**	**17.1**	**382**		**156**	**54.1**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
1,3,5-Trimethylbenzene	**310**	**509**	**460**	**197**	**353**	**735**		**765**	**632**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
2-Butanone (MEK) (ug/L)	<50.0	<50.0	<5.00	<10.0	<10.0	<50.0		**492**	**530**	**37.3**	<5.00	<10.0	<10.0	**18.5**	<5.00	<10.0	<10.0
2-Hexanone (MBK) (ug/L)	**78.8**	**69.1**	**48.4**	**19.2**	**36.5**	**111**		**118**	**123**	<10.0	<5.00	<5.00	<5.00	<10.0	<5.00	<5.00	<5.00
4-Isopropyltoluene (ug/L)	<5.00	<5.00	**2.42**	**2.02**	**2.05**	<5.00		<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
4-Methyl-2-pentanone (ug/L)	**69**	**60.1**	**58.4**	**34**	**54.6**	**63.7**		**77.8**	**77.7**	<10.0	<5.00	<5.00	<5.00	<10.0	<5.00	<5.00	<5.00
Acetone (ug/L)	<50.0	<50.0	<10.0	<10.0	<10.0	<50.0		<50.0	<50.0	**19.6**	<10.0	<10.0	<10.0	**33.5**	<10.0	<10.0	<10.0
Benzene (ug/L)	**286**	**588**	**306**	**117**	**255**	**25,900**		**19,000**	**21,500**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Di-isopropyl ether (DIPE) (ug/L)	**870**	**1250**	**703**	**325**	**283**	**4,550**		**1,580**	**942**	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Ethylbenzene (ug/L)	**342**	**906**	**419**	**128**	**554**	**3,810**		**3,660**	**3,800**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Isopropylbenzene (ug/L)	**22.1**	**46**	**36.3**	**10.9**	**28.9**	**81.6**		**79.5**	**73.4**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
MTBE (ug/L)	<5.00	<5.00	<1.00	<1.00	<1.00	<5.00		<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Naphthalene (ug/L)	**44.1**	**135**	**75.8**	**12.1**	**72.9**	**600**		**652**	**519**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
n-Butylbenzene (ug/L)	<5.00	16.7	**15.0**	**13.2**	**11.1**	**27.5**		**21.4**	**19.4**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
n-Propylbenzene (ug/L)	**113**	**205**	**154**	**68.6**	**124**	**346**		**349**	**272**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
sec-Butylbenzene (ug/L)	**7.11**	**9.39**	<1.00	<1.00	**5.61**	<5.00		<5.00	**10.7**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Styrene (ug/L)	<5.00	5.24	**4.68**	<1.00	**6.35**	**341**		**307**	**303**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
tert-Butylbenzene (ug/L)	<5.00	<5.00	<1.00	<1.00	<1.00	<5.00		<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Toluene (ug/L)	**980**	**2820**	**1,200**	**312**	**1,550**	**47,600**		**45,000**	**47,000**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Total BTEX (ug/L)	**3,918**	**9,874**	**4,705**	**1,374**	**5,989**	**99,810**		**88,660**	**95,000**	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00
Total Xylenes (ug/L)	**2,310**	**5,560**	**2,780**	**817**	**3,630**	**22,500**		**21,000**	**22,700**	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00
1,2-Dibromoethane (EDB) (ug/L)[3]	**3.38**	**9.64**	**1.41**	**2.41**	**2.11**	**837**		**327**	**383**	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

[1] Total petroleum hydrocarbons (TPH) gasoline range organics (GRO) analyzed via method 8015C and reported in milligrams per liter (mg/L).

[2] Volatile organic compounds (VOCs) analyzed via method 8260B and reported in micrograms per liter (ug/L).

[3] 1,2-Dibromoethane (EDB) analyzed via method 8011 and reported in micrograms per liter (ug/L).

Table 3
AFVR Vapor Effluent Analytical Data
Old Oaks Neighborhood
September 7, 2017

Extraction Location	Benzene (mg/m^3)	Toluene (mg/m^3)	Ethyl-benzene (mg/m^3)	Total Xylenes (mg/m^3)	Total BTEX (mg/m^3)[1]	TPH-GRO(mg/m^3)
MW-3	**1.71**	**5.08**	**1.13**	<6.0	<9.0	**146**
MW-12	**8.38**	**17.6**	**3.74**	**18.3**	**48.0**	**1,240**
MW-14	**3.21**	**11.1**	**3.38**	**17.0**	**34.7**	**497**

[1] BTEX and TPH (volatile fraction) analysis by EPA method TO-18M, reported in milligrams per cubic meter (mg/m^3).

Table 4
Old Oaks Neighborhood
Current and Historical Supply Well Analytical Data

Names and Addresses	Date	TAA µg/L	Benzene µg/L	TBA µg/L	1,2 DCA µg/L	DIPE µg/L	Ethybenzene µg/L	MTBE µg/L	Naphthalene µg/L	Toluene µg/L	Xylenes µg/L	Carbon Disulfide µg/L	Chloroform µg/L
Flynn, 1475 Old Oaks Ln	10/3/2014	**1,030**	**811**	**103**	**32.9**	**185**	**16.2**	<10	**5.3**	**7.1**	**178**	<10	
	12/30/2014	**811**	**454**	**73.5**	**29.6**	**158**	**5.0**	<8.0	**2.3**	**8.1**	**122**	**7.70**	
	3/25/2015	**1,220**	**695**	**110.0**	**33.6**	**191**	**13.1**	<10	**3.5**	**21.0**	**187**	<10	
	12/2/2015	**864**	**763**	<75	**34.4**	**160**	**20.5**	<10	<10	**27.0**	**154**	<10	
	8/24/2016	**1,310**	**737**	**119**	**35.9**	**208**	**14.4**	<10	<10	**30.1**	**33.0**	<10	
Branch, 1475 Old Oaks Ln	10/3/2014	**174**	**139**	**18.5**	**7.0**	**43.8**	**1.8**	<2.0	<2.0	**0.6**	**5.7**	<2.0	
	12/30/2014	<20	<2.0	<15	**0.9**	**20.9**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
	4/6/2015	<20	<2.0	<15	**0.9**	**11.3**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
	8/24/2016	**215**	**107**	**21.2**	**5.6**	**40.1**	**1.4**	<2.0	<2.0	<2.0	**3.7**	<2.0	
Fahrner, 1482 Old Oaks Ln	10/3/2014	**846**	**601**	**90.3**	**24.3**	**151**	**21.1**	<2.0	**4.0**	**4.6**	**62.4**	<10	
	11/10/2014	**1,400**	**624**	**150**	**25.7**	**144**	**22.5**	<10	**4.8**	**7.0**	**70.1**	<10	
	3/25/2015	**893**	**424**	**86.7**	**19.7**	**114**	**17.7**	<10	**3.4**	**5.7**	**51.7**	<10	
	11/19/2015	**845**	**493**	**85.6**	**20.1**	**117**	**22.4**	<8.0	**3.6**	**6.7**	**62.1**	<8.0	
	8/24/2016	**1,260**	**704**	**131**	**26.8**	**178**	**40.3**	<8.0	**6.0**	**31.8**	**172**	<8.0	
Monger, 1489 Old Oaks Ln	9/22/2014	**1,230**	**863**	<15	**44.5**	**204**	**51.1**	<2.0	**9.2**	**35.5**	**294**	<2.0	
	11/10/2014	**1,190**	**760**	**107**	**32.2**	**177**	**38.7**	<10	**5.8**	**29.2**	**234**	<10	
	3/25/2015	**1,200**	**846**	**115**	**34.5**	**193**	**42.0**	<10	**5.8**	**31.4**	**272**	<10	
	11/18/2015	**1,270**	**843**	**129**	**34.5**	**195**	**50.4**	<10	**6.1**	**45.1**	**298**	<10	
Williams, 1490 Old Oaks Ln	9/30/2014	<20	<2.0	<15	<2.0	<2.0	<2.0	**1.7**	<2.0	<2.0	<2.0	<2.0	
	12/30/2014	<20	<2.0	<15	<2.0	<2.0	<2.0	**2.2**	<2.0	<2.0	<2.0	<2.0	
	10/10/2016 (pre-CFU)	[2]NS	<1.00	NS	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<3.00	<10	
	10/10/2016 (post-CFU)	NS	<1.00	NS	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<3.00	<10	
	9/26/2017 (pre-CFU)	<25.0	<10.0	<100	<1.00	<5.00	<1.00	**1.38**	<1.00	<1.00	<3.00	<10.00	<0.50
Sharpe, 1498 Old Oaks Ln	9/30/2014	**77.1**	**31.5**	<15	**1.2**	**9.5**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
	11/10/2014	**73.4**	**14.6**	<15	**0.9**	**6.2**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
	5/5/2015	<20	<2.0	<15	<2.0	**0.9**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
	11/19/2015	<20	**5.8**	<15	<2.0	**2.3**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Betcher, 1510 Old Oaks Ln	9/27/2017	<25.0	<1.00	<100	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<3.00	<10.0	**0.53**
Phillips, 1529 Old Oaks Ln	9/30/2014	**884**	**518**	**89.1**	**22.4**	**126**	**2.8**	<2.0	**4.4**	<2.0	**23.9**	<10	
	11/10/2014	**1,420**	**497**	**173**	**22.9**	**106**	<10	<10	**3.4**	<10	**18.9**	<10	
	1/5/2015	**618**	**287**	**63**	**17.4**	**89**	<4.0	<4.0	**1.6**	<4.0	**5.6**	<4.0	
	5/5/2015	**370**	**304**	**38.5**	**14.3**	**76.6**	<4.0	<4.0	**1.5**	<4.0	**6.2**	<4.0	
Haddon, 1537 Old Oaks Ln	8/24/2016	<20	<2.0	<15	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**1.3**	
Martin, 1241 Cardwell Road	9/25/2017	<25.0	<1.00	<100	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<3.00	<10.0	**1.76**
Yarbrough, 1267 Cardwell Road	9/28/2017	<25.0	<1.00	<100	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<3.00	<10.0	**0.90**

[1]Supply Well analyzed for VOCs via method 8260 and SVOCs via method 8270 and reported in micrograms per liter (µg/L)

[2]Not sampled for particular analyses (NS).

Table 5
Old Oaks Neighborhood
Domestic Supply Well Survey

Address	Tax Map #	Name	Phone Number	Sampling Status - PSCMR Phase
1462 Old Oaks Lane	55-15-0-21-0	Anthony and Harriet Moore	804-837-7044	Unable to make contact - Phone number inactive
1463 Old Oaks Lane	55-15-0-1-0	Palmer and Anne Hill	804-784-5444	Complete
1470 Old Oaks Lane	55-15-0-20-0	Robert and Jacqueline Morsink	804-784-0323	Complete
1490 Old Oaks Lane	55-15-0-17-0	David Williams	804-334-6690	Complete
1501 Old Oaks Lane	55-15-0-4-0	Greg and Helen George	804-212-9098	Unable to make contact
1504 Old Oaks Lane	55-15-0-15-0	Robert and Pamela Steelman	804-316-0503	Complete
1510 Old Oaks Lane	55-15-0-13-0	Susan Bechter	804-784-5198	Complete
1518 Old Oaks Lane	55-15-0-12-0	Carol King	804-784-3179	Complete
1534 Old Oaks Lane	55-15-0-10-0	Richard and Sydney Carter	804-420-3584 804-356-5634 (mobile)	Complete
1500 River Road West	55-15-0-8-0	Jon and Evelyn Lunsford	804-357-2615	Unable to make contact
1548 River Road West	55-1-0-32-0	Ronald Nuckols (Ben Ralston)	804-514-7504	Complete
1497 Oakencroft Lane	55-1-0-78-A	Paul and Michele Hampton	804-784-4523	Unable to make contact
1491 Oakencroft Lane	55-1-0-78-0	Alfred and Katherine Mickens	804-690-7847 (mobile)	Complete
1226 Cardwell Road	55-1-0-34-0	Cory Alexander	804-304-3463	Unable to make contact
1231 Cardwell Road	55-1-0-36-0	Linda Ramsey (Owner) Ben Nissley (Son/Tenant)	804-477-5710 804-338-5204	Complete
1235 Cardwell Road	55-1-0-36-D	Charles Valentine	804-516-4055 (mobile)	Complete
1241 Cardwell Road	55-1-0-36-C	Archibald and Margaret Martin	804-263-3927 (Mrs.) 804-822-5198 (Mr.)	Complete
1249 Cardwell Road	55-1-0-36-B	Paul Michalski and Lindsay Hoven	804-339-8167	Unable to make contact - Phone number inactive
1253 Cardwell Road	55-1-0-36-A	Valerie Baker	804-316-5880	Complete
1261 Cardwell Road	55-1-0-37-0	Rose Marmarou	804-784-3411	Unable to make contact
1267 Cardwell Road	55-1-0-37-B	Patricia Yarbrough (Dianne Proctor)	804-267-9306	Complete
1327 Cardwell Road	55-10-0-3-A	Lawrence Harris	804-784-4284	Complete
1321 Cardwell Road	55-10-0-3-0	Martha Harris		Unable to make contact
860 Briesmaster Way	55-12-0-B-2A	Michael and Elizabeth Wallmeyer	804-240-2434	Unable to make contact
991 Briesmaster Way	55-1-0-93-B	Lester Bryant	804-784-4276 804-370-9177 (mobile)	Complete

Appendix A

Apex Field Notes

Job Name: OLD OAKS **Date:** 6/9/17

PC# 2015 - 4105 **Apex Job #** 757004-001

Time onsite/offsite: 1452/1545 **Mileage:** 32

Apex Personnel: MM

Weather Conditions: SUNNY 80°F

Scope of Work: SAMPLE SW @ 1231 CARDWELL

Field Equipment & Calibration: SAMPLING MEDIA

Personal Protective Equipment: GLOVES, BOOTS

Additional Notes:

SPIGOT BYPASSES MEDIA

BEGIN PURGING @ 1500

JOHN SPANGLER ONSITE

Ben Nissley (804-338-5204) - tenant and owner's son left his contact information taped to outdoor spigot

PC# 2015-4105 Date 6/9/17

Supply Well Sampling

Supply Well ID	Purging Method (pump, bailer, spigot, faucet)	Purge Time	Sample Time	Field Blank Sample Time	Rinsate Blank Sample Time
1231 CARDWELL	SPIGOT	20 min	MM 1523		
1231 CARDWELL -FB	BAILER	—	—	1512	

Trip blank collected: YES NO **Sample Time:**_____

VOCs 5/23/17 930
EDB 10/24/16 900

Job Name: Old Oaks Neighborhood **Date:** 7/14/17

PC# 2015-4105 **Apex Job #** 757004-001

Time onsite/offsite: 930/1200 **Mileage:** 32

Apex Personnel: Richard Jones

Weather Conditions: 80°, Sunny

Scope of Work: Gauge all wells

Field Equipment & Calibration: Solinst probe, gloves, socket/ratchet, metal detector

Personal Protective Equipment: Safety vest, Steel toe boots, Nitrile gloves

Additional Notes:

- Approximately 1 3/4" of product bailed out of MW-12
- Approximately 3/4" of product bailed out of MW-14
- Approximately 1" of product bailed out of MW-3
- Approximately 1/16 Liter of product bailed out total

PC# 2015-4105 Date 7/14/17

Groundwater Gauging and Sampling

Monitoring Well ID	Depth to Groundwater (feet)	Depth to Product (feet)	Product Thickness (feet)	Sample Time
MW-1	54.29	–	–	–
MW-2	39.77	–	–	–
MW-3	44.20	44.04	.16	–
MW-4	44.93	–	–	–
MW-5	42.41	–	–	–
MW-6	39.41	–	–	–
MW-7	49.34	–	–	–
MW-8	59.78	–	–	–
MW-9	54.55	–	–	–
MW-10	45.39	–	–	–
MW-11	43.46	–	–	–
MW-12	43.83	43.61	.22	–
MW-13	42.72	–	–	–
MW-14	43.92	43.81	.11	–
MW-15	48.13	–	–	–
MW-16	49.32	–	–	–

Rinsate blank collected: YES / ~~NO~~ **Sample Time:** –

Trip blank collected: YES / ~~NO~~ **Sample Time:** –

Job Name: Old Oaks Neighborhood **Date:** 8-3-2017

PC# 2015-4105 **Apex Job #** 757004-001

Time onsite/offsite: 900/1135 **Mileage:** 34

Apex Personnel: Sam Tolton, Mark Ryland

Weather Conditions: Sunny, 85°

Scope of Work: Gauge monitoring wells onsite. Remove any detectable free product. Meet with liability insurance representative.

Field Equipment & Calibration: Solinst interface probe, bailers

Personal Protective Equipment: Steel toe boots, high visibility vest, safety glasses, gloves.

Additional Notes:

Met with insurance rep. upon arrival. Walked him through typical gauging and bailing activities around concrete pad at wells, MW-12, MW-14, and MW-3.

- Bailed free product from MW-3, MW-12, and MW-14. About 1/20 of liter in total. Disposed in drum onsite.

PC# 2015-4105 Date 8-3-2017

Groundwater Gauging and Sampling

Monitoring Well ID	Depth to Groundwater (feet)	Depth to Product (feet)	Product Thickness (feet)	Sample Time
MW-1	54.39	–	–	NA
MW-2	39.89	–	–	
MW-3	44.27	44.19	0.08	
MW-4	45.09	–	–	
MW-5	42.52	–	–	
MW-6	39.55	–	–	
MW-7	49.72	–	–	
MW-8	59.87	–	–	
MW-9	57.62	–	–	
MW-10	45.48	–	–	
MW-11	43.59	–	–	
MW-12	43.94	43.75	0.19	
MW-13	42.87	–	–	
MW-14	44.05	43.99	0.06	
MW-15	48.30	–	–	
MW-16	49.46	–	–	

Rinsate blank collected: YES / NO **Sample Time:** NA

Job Name: Old Oaks Neighborhood **Date:** 8-18-2017

PC# 2015-4105 **Apex Job #** 757004-001

Time onsite/offsite: 935/1120 **Mileage:** 32

Apex Personnel: Sam Tolton

Weather Conditions: Sunny, humid, 89°

Scope of Work: Gauge all monitoring wells onsite. Remove any detectable free product and dispose in drum onsite.

Field Equipment & Calibration: Solinist interface probe, absorbent wicks, bailer

Personal Protective Equipment: Safety glasses, high visibility vest, steel toe boots, gloves

Additional Notes:

Installed absorbent wicks in MW-3, MW-12, and MW-14 after bailing free product. Very little product bailed. Approximately 1/20 of a liter in total.

PC# 2015-4105 Date 8-18-2017

Groundwater Gauging and Sampling

Monitoring Well ID	Depth to Groundwater (feet)	Depth to Product (feet)	Product Thickness (feet)	Sample Time
MW-1	54.39	–	–	NA
MW-2	39.89	–	–	
MW-3	44.19	44.12	0.07	
MW-4	45.06	–	–	
MW-5	42.52	–	–	
MW-6	39.58	–	–	
MW-7	48.03	–	–	
MW-8	59.37	–	–	
MW-9	55.12	–	–	
MW-10	45.41	–	–	
MW-11	43.52	–	–	
MW-12	43.81	43.70	0.11	
MW-13	42.83	–	–	
MW-14	43.94	43.91	0.03	
MW-15	48.22	–	–	
MW-16	49.47	–	–	

Rinsate blank collected: YES / NO **Sample Time:** NA

Job Name: Old Oaks Neighborhood **Date:** 9-7-2017

PC# 2015-4105 **Apex Job #** 757004-001

Time onsite/offsite: 8:50/15:10 **Mileage:** 32

Apex Personnel: Sam Tolton

Weather Conditions: Sunny, 64°

Scope of Work: AFVR event, gauge all monitoring wells.

Field Equipment & Calibration: Solinst interface probe,

Personal Protective Equipment: Safety glasses, hard hat, high visibility vest, gloves, boots.

Additional Notes:

Atlantic onsite at 9:00. Started AFVR on MW-14 at 9:00.

- Collected MW-14 Vapor Effluent at 10:30.
- Switched to MW-12 at 11:00.
- Collected MW-12 Vapor Effluent at 12:00.
- Switched to MW-3 at 13:00
- Collected MW-3 Vapor Effluent at 14:00
- Wicks installed in wells in good shape. MW-12 about 1/4 saturated. MW-3 and MW-14 less than 10% saturated.

PC# 7015-4105 Date 9-7-2017

Groundwater Gauging and Sampling

Monitoring Well ID	Depth to Groundwater (feet)	Depth to Product (feet)	Product Thickness (feet)	Sample Time
MW-1	54.63	–	–	NA
MW-2	40.10	–	–	NA
MW-3	44.72	44.70	0.02	NA
MW-4	45.35	–	–	NA
MW-5	42.27	–	–	NA
MW-6	39.82	–	–	NA
MW-7	49.03	–	–	NA
MW-8	57.62	–	–	NA
MW-9	55.39	–	–	NA
MW-10	45.67	–	–	NA
MW-11	43.61	–	–	NA
MW-12	44.12	44.11	0.01	NA
MW-13	43.09	–	–	NA
MW-14	44.37	44.35	0.02	NA
MW-15	48.49	–	–	NA
MW-16	49.66	–	–	NA

Rinsate blank collected: YES / NO **Sample Time:**_____

Job Name: Old Oaks

Date: 9/15/17

PC# 2015-4105

Apex Job # 757 004-001

Time onsite/offsite: 1215/1330

Mileage: 32

Apex Personnel: Richard Jones

Weather Conditions: 77° Sunny

Scope of Work: Gauge monitoring wells

Field Equipment & Calibration: Solinst probe

Personal Protective Equipment: Boots, gloves, Hi vis vest, safety glasses.

Additional Notes:

Replaced absorbent in MW-12

PC# 2015-4105

Date 9/15/17

Groundwater Gauging and Sampling

Monitoring Well ID	Depth to Groundwater (feet)	Depth to Product (feet)	Product Thickness (feet)	Sample Time
MW-1	54.65			
MW-2	40.09			
MW-3	44.71	44.71	Sheen	
MW-4	45.42			
MW-5	42.73			
MW-6	39.84			
MW-7	49.95			
MW-8	60.09			
MW-9	55.87			
MW-10	45.74			
MW-11	43.83			
MW-12	44.13	44.13	Sheen	
MW-13	43.14			
MW-14	44.44	44.44	Sheen	
MW-15	48.49			
MW-16	49.70			

Rinsate blank collected: YES (NO) **Sample Time:**_____

Trip blank collected: YES (NO) **Sample Time:**_____

Job Name: Old Oaks Neighborhood Date: 9/25/17

PC# 2015-4105 Apex Job # 757004-001

Time onsite/offsite: 10:45 / 13:00 Mileage: 32

Apex Personnel: MVR

Weather Conditions: Clear ~78°F

Scope of Work: Sample supply wells for VOCs 8260 and EDB 8011

Field Equipment & Calibration: gloves, bottle set

Personal Protective Equipment: gloves, steel toe boots

Additional Notes:

- water softener observed at 1241 Cardwell with no means to bypass

PC# 2015-4105

Date 9/25/17

Supply Well Sampling

Supply Well ID	Purging Method (pump, bailer, spigot, faucet)	Purge Time	Sample Time	Field Blank Sample Time	Rinsate Blank Sample Time
1327 Cardwell	outdoor spigot	10 min	11:05	11:10	
1241 Cardwell	outdoor spigot	10 min	11:35	11:40	
1518 Old Oaks	pressure tank spigot	10 min	12:15	12:20	

Trip blank collected: YES / NO

Sample Time: 8/9/17 – 13:00 (EDB)
6/29/17 – 13:40 (VOC)

Job Name: OLD OAKS NEIGHBORHOOD

Date: 9/26/17

PC# 2015-MM 4105

Apex Job # 757004-001

Time onsite/offsite: 8:50/1050

Mileage: 32

Apex Personnel: TTO / MM

Weather Conditions: Cloudy 69

Scope of Work: Supply well sampling

Field Equipment & Calibration: N/A

Personal Protective Equipment: Steel toe boots, gloves

Additional Notes:

MORNING POSTPONED - CALLED EARLY 9/26

PC# 2015-415

Date 9/20/17

Supply Well Sampling

Supply Well ID	Purging Method (pump, bailer, spigot, faucet)	Purge Time	Sample Time	Field Blank Sample Time	Rinsate Blank Sample Time
1490 Old Oaks	spigot	10 min	920		
1490 OLD OAKS FB	—	—	—	909	
1463 OLD OAKS	SPIGOT	10 MIN	948		
1463 OLD OAKS FB	—	—	—	943	
1548 RIVER ROAD WEST	SPIGOT	10 MIN	1012		
1548 RIVER ROAD WEST FB	—	—	—	1006	
991 BRIDGMASTER WAY	SPIGOT	10 MIN	1037		
991 BRIDGMASTER WAY FB	—	—	—	1032	

Trip blank collected: YES / NO **Sample Time:**_____

Job Name: OLD OAKS NEIGHBORHOOD **Date:** 9/27/17

PC# 2015-4105 **Apex Job #** 757004-001

Time onsite/offsite: 950 / 1200 **Mileage:** 32

Apex Personnel: MM

Weather Conditions: SUNNY 80°F

Scope of Work: SUPPLY WELL SAMPLING

Field Equipment & Calibration: N/A

Personal Protective Equipment: BOOTS, GLOVES

Additional Notes:

SUSAN BECHTEL MENTIONED THAT LUNSFORDS (1500 RIVER ROAD WEST) MOVED.

PC# 2015-4105

Date 9/27/17

Supply Well Sampling

Supply Well ID	Purging Method (pump, bailer, spigot, faucet)	Purge Time	Sample Time	Field Blank Sample Time	Rinsate Blank Sample Time
1510 OLD OAKS FB	~~Spigot~~	~~10 min~~ MN	~~—~~	1012	
1510 OLD OAKS	SPIGOT	10 MIN	1028	—	
1534 OLD OAKS FB	—	—	—	1050	
1534 OLD OAKS	SPIGOT	10 MIN	1057	—	
1235 CARDWELL FB	—	—	—	1117	
1235 CARDWELL	SPIGOT	10 MIN	1121	—	
1491 OAKENCROFT FB	—	—	—	1137	
1491 OAKENCROFT	SPIGOT	10 MIN	1142	—	

Trip blank collected: YES / NO **Sample Time:**_____

VOCs 9/27/17 1550

EDB 10/24/16 900

Job Name: Old Oaks neighborhood **Date:** 9/28/17

PC# 2016-4105 **Apex Job #** 757004-001

Time onsite/offsite: 930/1155 **Mileage:**

Apex Personnel: TO

Weather Conditions: Sunny 72°

Scope of Work: Supply well sampling

Field Equipment & Calibration: N/A

Personal Protective Equipment: Boot, gloves

Additional Notes:

PC# 2015-4105

Date 9/28/17

Supply Well Sampling

Supply Well ID	Purging Method (pump, bailer, spigot, faucet)	Purge Time	Sample Time	Field Blank Sample Time	Rinsate Blank Sample Time
1504 Old Oaks FB	—	—	—	946	
1504 Old Oaks	Spigot	10 min	1000	—	
1470 Old Oaks FB	—	—	—	1040	
1470 Old Oaks	Spigot	10 min	1050	—	
1253 Cardwell Road FB	—	—	—	1110	
1253 Cardwell Road	Spigot	10 min	1120	—	
1267 Cardwell Road FB	—	—	—	1130	
1267 Cardwell Road	Spigot	10 min	1140	—	

Trip blank collected: (YES) NO **Sample Time:**_____

VOCS 9/27/17 1550

EDB 10/24/16 900

Job Name: Old Oaks Neighborhood **Date:** 10/13/17

PC# 2015-4105 **Apex Job #** 757004-001

Time onsite/offsite: 1145/1630 **Mileage:** 32

Apex Personnel: TO, RJ

Weather Conditions: 75°, cloudy

Scope of Work: Gauge & sample all wells.

Field Equipment & Calibration: 501 inst probe

Personal Protective Equipment: boots, nitrile gloves, Hi vis vest

Additional Notes:

absorbent wicks in wells MW-14, MW-12, MW-3 are still sufficient

PC# 2015-4105 Date 10/13/17

Groundwater Gauging and Sampling

Monitoring Well ID	Depth to Groundwater (feet)	Depth to Product (feet)	Product Thickness (feet)	Sample Time
MW -1	54.85			1405
MW -2	40.39			1455
MW -3	45.14	45.14	Sheen	1600
MW -4	45.8			1425
MW -5	43.02			1430
MW -6	40.16			1510
MW -7	50.15			1320
MW -8	60.3			1335
MW -9	56.17			1400
MW -10	46.09			1530
MW -11	44.17			1500
MW -12	44.5	44.5	Sheen	1545
MW -13	43.52	43.52	Sheen	1440
MW -14	44.83	44.83	Sheen	1520
MW -15	48.81			1545
MW -16	50.03			1610

Rinsate blank collected: (YES) / NO **Sample Time:** 1305

Trip blank collected: (YES) / NO **Sample Time:** 1550

Appendix B

Laboratory Certificates of Analysis and Chain-of-Custody Documentation

1941 Reymet Road ● Richmond, Virginia 23237 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 17F0377

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian, VA 23113	Date Received:	June 9, 2017 16:18
		Date Issued:	June 14, 2017 13:11
		Project Number:	757004-001
Submitted To:	Mark Ryland	Purchase Order:	
Client Site I.D.:	Old Oaks Neighborhood		

Enclosed are the results of analyses for samples received by the laboratory on 06/09/2017 16:18. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

Ted Soyars

Ted Soyars
Laboratory Manager

End Notes:

The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

This report shall not be reproduced except in full without the expressed and written approval of an authorized representative of Air Water & Soil Laboratories, Inc.

Accredited in accordance with nelac
Commonwealth of Virginia, DCLS
Accreditation # 460021

NWBOC EDWOSB Certified

Certified SWaM Small, Women and Minority-Owned
Supplier Diversity Strengthens the Commonwealth
by the Virginia Department of Minority Business Enterprise

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

ANALYTICAL REPORT FOR SAMPLES

Laboratory Order ID 17F0377

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
6917001-1 Trip Blank	17F0377-01	Ground Water	05/23/2017 09:30	06/09/2017 16:18
6917001-2 Trip Blank	17F0377-02	Ground Water	10/14/2016 09:00	06/09/2017 16:18
6917001-3 1231 Cardwell-FB	17F0377-03	Ground Water	06/09/2017 15:12	06/09/2017 16:18
6917001-4 1231 Cardwell	17F0377-04	Ground Water	06/09/2017 15:23	06/09/2017 16:18

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-1 Trip Blank **Laboratory Sample ID:** 17F0377-01

Grab Date/Time: 05/23/2017 09:30

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	01	SW8260B	<0.40 ug/L		0.40	1	06/12/17 11:02	06/12/17 11:02	KCS
1,1,1-Trichloroethane	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,1,2,2-Tetrachloroethane	01	SW8260B	<0.40 ug/L		0.40	1	06/12/17 11:02	06/12/17 11:02	KCS
1,1,2-Trichloroethane	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,1-Dichloroethane	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,1-Dichloroethylene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,1-Dichloropropene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,2,3-Trichlorobenzene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,2,3-Trichloropropane	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,2,4-Trichlorobenzene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,2,4-Trimethylbenzene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,2-Dibromo-3-chloropropane (DBCP)	01	SW8260B	<4.00 ug/L		4.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,2-Dibromoethane (EDB)	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,2-Dichlorobenzene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,2-Dichloroethane	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,2-Dichloropropane	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,3,5-Trimethylbenzene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,3-Dichlorobenzene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,3-Dichloropropane	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
1,4-Dichlorobenzene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
2,2-Dichloropropane	01	SW8260B	<2.00 ug/L		2.00	1	06/12/17 11:02	06/12/17 11:02	KCS
2-Butanone (MEK)	01	SW8260B	<10.0 ug/L		10.0	1	06/12/17 11:02	06/12/17 11:02	KCS
2-Chlorotoluene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
2-Hexanone (MBK)	01	SW8260B	<5.00 ug/L		5.00	1	06/12/17 11:02	06/12/17 11:02	KCS
4-Chlorotoluene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
4-Isopropyltoluene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-1 Trip Blank **Laboratory Sample ID:** 17F0377-01

Grab Date/Time: 05/23/2017 09:30

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	01	SW8260B	<5.00 ug/L		5.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Acetone	01	SW8260B	<10.0 ug/L		10.0	1	06/12/17 11:02	06/12/17 11:02	KCS
Benzene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Bromobenzene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Bromochloromethane	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Bromodichloromethane	01	SW8260B	<0.50 ug/L		0.50	1	06/12/17 11:02	06/12/17 11:02	KCS
Bromoform	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Bromomethane	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Carbon disulfide	01	SW8260B	<10.0 ug/L		10.0	1	06/12/17 11:02	06/12/17 11:02	KCS
Carbon tetrachloride	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Chlorobenzene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Chloroethane	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Chloroform	01	SW8260B	<0.50 ug/L		0.50	1	06/12/17 11:02	06/12/17 11:02	KCS
Chloromethane	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
cis-1,2-Dichloroethylene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
cis-1,3-Dichloropropene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Dibromochloromethane	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Dibromomethane	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Dichlorodifluoromethane	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Di-isopropyl ether (DIPE)	01	SW8260B	<5.00 ug/L		5.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Ethylbenzene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Hexachlorobutadiene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Iodomethane	01	SW8260B	<10.0 ug/L		10.0	1	06/12/17 11:02	06/12/17 11:02	KCS
Isopropylbenzene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
m+p-Xylenes	01	SW8260B	<2.00 ug/L		2.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Methylene chloride	01	SW8260B	<4.00 ug/L		4.00	1	06/12/17 11:02	06/12/17 11:02	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-1 Trip Blank **Laboratory Sample ID:** 17F0377-01

Grab Date/Time: 05/23/2017 09:30

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Naphthalene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
n-Butylbenzene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
n-Propylbenzene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
o-Xylene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
sec-Butylbenzene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Styrene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
tert-Butylbenzene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Tetrachloroethylene (PCE)	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Toluene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
trans-1,2-Dichloroethylene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
trans-1,3-Dichloropropene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Trichloroethylene	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Trichlorofluoromethane	01	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Vinyl acetate	01	SW8260B	<10.0 ug/L		10.0	1	06/12/17 11:02	06/12/17 11:02	KCS
Vinyl chloride	01	SW8260B	<0.50 ug/L		0.50	1	06/12/17 11:02	06/12/17 11:02	KCS
Xylenes, Total	01	SW8260B	<3.00 ug/L		3.00	1	06/12/17 11:02	06/12/17 11:02	KCS
Surr: 1,2-Dichloroethane-d4	*01*	*SW8260B*	*103 %*		*70-120*		*06/12/17 11:02*	*06/12/17 11:02*	*KCS*
Surr: 4-Bromofluorobenzene	*01*	*SW8260B*	*96.1 %*		*75-120*		*06/12/17 11:02*	*06/12/17 11:02*	*KCS*
Surr: Dibromofluoromethane	*01*	*SW8260B*	*101 %*		*80-119*		*06/12/17 11:02*	*06/12/17 11:02*	*KCS*
Surr: Toluene-d8	*01*	*SW8260B*	*100 %*		*85-120*		*06/12/17 11:02*	*06/12/17 11:02*	*KCS*

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-2 Trip Blank **Laboratory Sample ID:** 17F0377-02

Grab Date/Time: 10/14/2016 09:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	02	SW8011	<0.010 ug/L		0.010	1	06/12/17 16:40	06/12/17 22:02	LBH
1,2,3-Trichloropropane	02	SW8011	<0.010 ug/L		0.010	1	06/12/17 16:40	06/12/17 22:02	LBH
1,2-Dibromo-3-chloropropane (DBCP)	02	SW8011	<0.010 ug/L		0.010	1	06/12/17 16:40	06/12/17 22:02	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-3 1231 Cardwell-FB **Laboratory Sample ID:** 17F0377-03

Grab Date/Time: 06/09/2017 15:12

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	03	SW8260B	<0.40 ug/L		0.40	1	06/12/17 11:25	06/12/17 11:25	KCS
1,1,1-Trichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,1,2,2-Tetrachloroethane	03	SW8260B	<0.40 ug/L		0.40	1	06/12/17 11:25	06/12/17 11:25	KCS
1,1,2-Trichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,1-Dichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,1-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,1-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,2,3-Trichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,2,3-Trichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,2,4-Trichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,2,4-Trimethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,2-Dibromo-3-chloropropane (DBCP)	03	SW8260B	<4.00 ug/L		4.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,2-Dibromoethane (EDB)	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,2-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,2-Dichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,2-Dichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,3,5-Trimethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,3-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,3-Dichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
1,4-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
2,2-Dichloropropane	03	SW8260B	<2.00 ug/L		2.00	1	06/12/17 11:25	06/12/17 11:25	KCS
2-Butanone (MEK)	03	SW8260B	<10.0 ug/L		10.0	1	06/12/17 11:25	06/12/17 11:25	KCS
2-Chlorotoluene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
2-Hexanone (MBK)	03	SW8260B	<5.00 ug/L		5.00	1	06/12/17 11:25	06/12/17 11:25	KCS
4-Chlorotoluene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
4-Isopropyltoluene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-3 1231 Cardwell-FB **Laboratory Sample ID:** 17F0377-03

Grab Date/Time: 06/09/2017 15:12

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	03	SW8260B	<5.00 ug/L		5.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Acetone	03	SW8260B	<10.0 ug/L		10.0	1	06/12/17 11:25	06/12/17 11:25	KCS
Benzene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Bromobenzene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Bromochloromethane	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Bromodichloromethane	03	SW8260B	<0.50 ug/L		0.50	1	06/12/17 11:25	06/12/17 11:25	KCS
Bromoform	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Bromomethane	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Carbon disulfide	03	SW8260B	<10.0 ug/L		10.0	1	06/12/17 11:25	06/12/17 11:25	KCS
Carbon tetrachloride	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Chlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Chloroethane	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Chloroform	03	SW8260B	<0.50 ug/L		0.50	1	06/12/17 11:25	06/12/17 11:25	KCS
Chloromethane	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
cis-1,2-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
cis-1,3-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Dibromochloromethane	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Dibromomethane	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Dichlorodifluoromethane	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Di-isopropyl ether (DIPE)	03	SW8260B	<5.00 ug/L		5.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Ethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Hexachlorobutadiene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Iodomethane	03	SW8260B	<10.0 ug/L		10.0	1	06/12/17 11:25	06/12/17 11:25	KCS
Isopropylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
m+p-Xylenes	03	SW8260B	<2.00 ug/L		2.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Methylene chloride	03	SW8260B	<4.00 ug/L		4.00	1	06/12/17 11:25	06/12/17 11:25	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-3 1231 Cardwell-FB **Laboratory Sample ID:** 17F0377-03

Grab Date/Time: 06/09/2017 15:12

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Naphthalene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
n-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
n-Propylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
o-Xylene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
sec-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Styrene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
tert-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Tetrachloroethylene (PCE)	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Toluene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
trans-1,2-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
trans-1,3-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Trichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Trichlorofluoromethane	03	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Vinyl acetate	03	SW8260B	<10.0 ug/L		10.0	1	06/12/17 11:25	06/12/17 11:25	KCS
Vinyl chloride	03	SW8260B	<0.50 ug/L		0.50	1	06/12/17 11:25	06/12/17 11:25	KCS
Xylenes, Total	03	SW8260B	<3.00 ug/L		3.00	1	06/12/17 11:25	06/12/17 11:25	KCS
Surr: 1,2-Dichloroethane-d4	*03*	*SW8260B*	*99.2 %*		*70-120*		*06/12/17 11:25*	*06/12/17 11:25*	*KCS*
Surr: 4-Bromofluorobenzene	*03*	*SW8260B*	*96.1 %*		*75-120*		*06/12/17 11:25*	*06/12/17 11:25*	*KCS*
Surr: Dibromofluoromethane	*03*	*SW8260B*	*99.2 %*		*80-119*		*06/12/17 11:25*	*06/12/17 11:25*	*KCS*
Surr: Toluene-d8	*03*	*SW8260B*	*102 %*		*85-120*		*06/12/17 11:25*	*06/12/17 11:25*	*KCS*
Semivolatile Organic Compounds by GCMS									
1,2,4,5-Tetrachlorobenzene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
1,2,4-Trichlorobenzene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
1,2-Dichlorobenzene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
1,2-Diphenylhydrazine	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-3 1231 Cardwell-FB **Laboratory Sample ID:** 17F0377-03

Grab Date/Time: 06/09/2017 15:12

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
1,3-Dichlorobenzene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
1,3-Dinitrobenzene	03	SW8270D	<2.55 ug/L		2.55	1	06/12/17 09:19	06/13/17 18:40	SKS
1,4-Dichlorobenzene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
1-Naphthylamine	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
2,3,4,6-Tetrachlorophenol	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
2,4,5-Trichlorophenol	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
2,4,6-Trichlorophenol	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
2,4-Dichlorophenol	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
2,4-Dimethylphenol	03	SW8270D	<0.51 ug/L		0.51	1	06/12/17 09:19	06/13/17 18:40	SKS
2,4-Dinitrophenol	03	SW8270D	<51.0 ug/L		51.0	1	06/12/17 09:19	06/13/17 18:40	SKS
2,4-Dinitrotoluene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
2,6-Dichlorophenol	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
2,6-Dinitrotoluene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
2-Chloronaphthalene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
2-Chlorophenol	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
2-Methylnaphthalene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
2-Naphthylamine	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
2-Nitroaniline	03	SW8270D	<20.4 ug/L		20.4	1	06/12/17 09:19	06/13/17 18:40	SKS
2-Nitrophenol	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
3,3'-Dichlorobenzidine	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
3-Methylcholanthrene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
3-Nitroaniline	03	SW8270D	<20.4 ug/L		20.4	1	06/12/17 09:19	06/13/17 18:40	SKS
4,6-Dinitro-2-methylphenol	03	SW8270D	<51.0 ug/L		51.0	1	06/12/17 09:19	06/13/17 18:40	SKS
4-Aminobiphenyl	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
4-Bromophenyl phenyl ether	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
4-Chloroaniline	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-3 1231 Cardwell-FB **Laboratory Sample ID:** 17F0377-03

Grab Date/Time: 06/09/2017 15:12

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
4-Chlorophenyl phenyl ether	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
4-Nitroaniline	03	SW8270D	<20.4 ug/L		20.4	1	06/12/17 09:19	06/13/17 18:40	SKS
4-Nitrophenol	03	SW8270D	<51.0 ug/L		51.0	1	06/12/17 09:19	06/13/17 18:40	SKS
7,12-Dimethylbenz (a) anthracene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Acenaphthene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Acenaphthylene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Acetophenone	03	SW8270D	<20.4 ug/L		20.4	1	06/12/17 09:19	06/13/17 18:40	SKS
Aniline	03	SW8270D	<51.0 ug/L		51.0	1	06/12/17 09:19	06/13/17 18:40	SKS
Anthracene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Benzidine	03	SW8270D	<51.0 ug/L		51.0	1	06/12/17 09:19	06/13/17 18:40	SKS
Benzo (a) anthracene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Benzo (a) pyrene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Benzo (b) fluoranthene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Benzo (g,h,i) perylene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Benzo (k) fluoranthene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Benzoic acid	03	SW8270D	<51.0 ug/L		51.0	1	06/12/17 09:19	06/13/17 18:40	SKS
Benzyl alcohol	03	SW8270D	<20.4 ug/L		20.4	1	06/12/17 09:19	06/13/17 18:40	SKS
bis (2-Chloroethoxy) methane	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
bis (2-Chloroethyl) ether	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
2,2'-Oxybis (1-chloropropane)	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
bis (2-Ethylhexyl) phthalate	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Butyl benzyl phthalate	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Chrysene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Dibenz (a,h) anthracene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Dibenz (a,j) acridine	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-3 1231 Cardwell-FB **Laboratory Sample ID:** 17F0377-03

Grab Date/Time: 06/09/2017 15:12

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
Dibenzofuran	03	SW8270D	<5.10 ug/L		5.10	1	06/12/17 09:19	06/13/17 18:40	SKS
Diethyl phthalate	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Dimethyl phthalate	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Di-n-butyl phthalate	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Di-n-octyl phthalate	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Diphenylamine	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Ethyl methanesulfonate	03	SW8270D	<20.4 ug/L		20.4	1	06/12/17 09:19	06/13/17 18:40	SKS
Fluoranthene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Fluorene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Hexachlorobenzene	03	SW8270D	<1.02 ug/L		1.02	1	06/12/17 09:19	06/13/17 18:40	SKS
Hexachlorobutadiene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Hexachlorocyclopentadiene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Hexachloroethane	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Indeno (1,2,3-cd) pyrene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Isophorone	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
m+p-Cresols	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Methyl methanesulfonate	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Naphthalene	03	SW8270D	<5.10 ug/L		5.10	1	06/12/17 09:19	06/13/17 18:40	SKS
Nitrobenzene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
n-Nitrosodimethylamine	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
n-Nitrosodi-n-butylamine	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
n-Nitrosodi-n-propylamine	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
n-Nitrosodiphenylamine	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
n-Nitrosopiperidine	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
o+m+p-Cresols	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
o-Cresol	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-3 1231 Cardwell-FB **Laboratory Sample ID:** 17F0377-03

Grab Date/Time: 06/09/2017 15:12

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
p-(Dimethylamino) azobenzene	03	SW8270D	<2.55 ug/L		2.55	1	06/12/17 09:19	06/13/17 18:40	SKS
p-Chloro-m-cresol	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Pentachloronitrobenzene (quintozene)	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Pentachlorophenol	03	SW8270D	<20.4 ug/L		20.4	1	06/12/17 09:19	06/13/17 18:40	SKS
Phenacetin	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Phenanthrene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Phenol	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Pronamide	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Pyrene	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Pyridine	03	SW8270D	<10.2 ug/L		10.2	1	06/12/17 09:19	06/13/17 18:40	SKS
Surr: 2,4,6-Tribromophenol	*03*	*SW8270D*	*67.8 %*		*20-86*		*06/12/17 09:19*	*06/13/17 18:40*	*SKS*
Surr: 2-Fluorobiphenyl	*03*	*SW8270D*	*62.5 %*		*23-87*		*06/12/17 09:19*	*06/13/17 18:40*	*SKS*
Surr: 2-Fluorophenol	*03*	*SW8270D*	*37.9 %*		*10-52*		*06/12/17 09:19*	*06/13/17 18:40*	*SKS*
Surr: Nitrobenzene-d5	*03*	*SW8270D*	*67.9 %*		*10-98.5*		*06/12/17 09:19*	*06/13/17 18:40*	*SKS*
Surr: Phenol-d5	*03*	*SW8270D*	*25.6 %*		*5-33*		*06/12/17 09:19*	*06/13/17 18:40*	*SKS*
Surr: p-Terphenyl-d14	*03*	*SW8270D*	*80.2 %*		*27-133*		*06/12/17 09:19*	*06/13/17 18:40*	*SKS*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	03	SW8011	<0.010 ug/L		0.010	1	06/12/17 16:40	06/12/17 22:40	LBH
1,2,3-Trichloropropane	03	SW8011	<0.010 ug/L		0.010	1	06/12/17 16:40	06/12/17 22:40	LBH
1,2-Dibromo-3-chloropropane (DBCP)	03	SW8011	<0.010 ug/L		0.010	1	06/12/17 16:40	06/12/17 22:40	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-4 1231 Cardwell **Laboratory Sample ID:** 17F0377-04

Grab Date/Time: 06/09/2017 15:23

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	04	SW8260B	<0.40 ug/L		0.40	1	06/12/17 11:49	06/12/17 11:49	KCS
1,1,1-Trichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,1,2,2-Tetrachloroethane	04	SW8260B	<0.40 ug/L		0.40	1	06/12/17 11:49	06/12/17 11:49	KCS
1,1,2-Trichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,1-Dichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,1-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,1-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,2,3-Trichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,2,3-Trichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,2,4-Trichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,2,4-Trimethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,2-Dibromo-3-chloropropane (DBCP)	04	SW8260B	<4.00 ug/L		4.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,2-Dibromoethane (EDB)	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,2-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,2-Dichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,2-Dichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,3,5-Trimethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,3-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,3-Dichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
1,4-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
2,2-Dichloropropane	04	SW8260B	<2.00 ug/L		2.00	1	06/12/17 11:49	06/12/17 11:49	KCS
2-Butanone (MEK)	04	SW8260B	<10.0 ug/L		10.0	1	06/12/17 11:49	06/12/17 11:49	KCS
2-Chlorotoluene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
2-Hexanone (MBK)	04	SW8260B	<5.00 ug/L		5.00	1	06/12/17 11:49	06/12/17 11:49	KCS
4-Chlorotoluene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
4-Isopropyltoluene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-4 1231 Cardwell **Laboratory Sample ID:** 17F0377-04

Grab Date/Time: 06/09/2017 15:23

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	04	SW8260B	<5.00 ug/L		5.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Acetone	04	SW8260B	<10.0 ug/L		10.0	1	06/12/17 11:49	06/12/17 11:49	KCS
Benzene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Bromobenzene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Bromochloromethane	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Bromodichloromethane	04	SW8260B	<0.50 ug/L		0.50	1	06/12/17 11:49	06/12/17 11:49	KCS
Bromoform	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Bromomethane	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Carbon disulfide	04	SW8260B	<10.0 ug/L		10.0	1	06/12/17 11:49	06/12/17 11:49	KCS
Carbon tetrachloride	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Chlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Chloroethane	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Chloroform	04	SW8260B	<0.50 ug/L		0.50	1	06/12/17 11:49	06/12/17 11:49	KCS
Chloromethane	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
cis-1,2-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
cis-1,3-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Dibromochloromethane	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Dibromomethane	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Dichlorodifluoromethane	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Di-isopropyl ether (DIPE)	04	SW8260B	<5.00 ug/L		5.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Ethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Hexachlorobutadiene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Iodomethane	04	SW8260B	<10.0 ug/L		10.0	1	06/12/17 11:49	06/12/17 11:49	KCS
Isopropylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
m+p-Xylenes	04	SW8260B	<2.00 ug/L		2.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Methylene chloride	04	SW8260B	<4.00 ug/L		4.00	1	06/12/17 11:49	06/12/17 11:49	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-4 1231 Cardwell **Laboratory Sample ID:** 17F0377-04

Grab Date/Time: 06/09/2017 15:23

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Naphthalene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
n-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
n-Propylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
o-Xylene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
sec-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Styrene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
tert-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Tetrachloroethylene (PCE)	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Toluene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
trans-1,2-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
trans-1,3-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Trichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Trichlorofluoromethane	04	SW8260B	<1.00 ug/L		1.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Vinyl acetate	04	SW8260B	<10.0 ug/L		10.0	1	06/12/17 11:49	06/12/17 11:49	KCS
Vinyl chloride	04	SW8260B	<0.50 ug/L		0.50	1	06/12/17 11:49	06/12/17 11:49	KCS
Xylenes, Total	04	SW8260B	<3.00 ug/L		3.00	1	06/12/17 11:49	06/12/17 11:49	KCS
Surr: 1,2-Dichloroethane-d4	*04*	*SW8260B*	*102 %*		*70-120*		*06/12/17 11:49*	*06/12/17 11:49*	*KCS*
Surr: 4-Bromofluorobenzene	*04*	*SW8260B*	*95.7 %*		*75-120*		*06/12/17 11:49*	*06/12/17 11:49*	*KCS*
Surr: Dibromofluoromethane	*04*	*SW8260B*	*103 %*		*80-119*		*06/12/17 11:49*	*06/12/17 11:49*	*KCS*
Surr: Toluene-d8	*04*	*SW8260B*	*101 %*		*85-120*		*06/12/17 11:49*	*06/12/17 11:49*	*KCS*
Semivolatile Organic Compounds by GCMS									
1,2,4,5-Tetrachlorobenzene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
1,2,4-Trichlorobenzene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
1,2-Dichlorobenzene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
1,2-Diphenylhydrazine	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-4 1231 Cardwell **Laboratory Sample ID:** 17F0377-04

Grab Date/Time: 06/09/2017 15:23

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
1,3-Dichlorobenzene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
1,3-Dinitrobenzene	04	SW8270D	<2.58 ug/L		2.58	1	06/12/17 09:19	06/13/17 16:28	SKS
1,4-Dichlorobenzene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
1-Naphthylamine	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
2,3,4,6-Tetrachlorophenol	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
2,4,5-Trichlorophenol	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
2,4,6-Trichlorophenol	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
2,4-Dichlorophenol	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
2,4-Dimethylphenol	04	SW8270D	<0.52 ug/L		0.52	1	06/12/17 09:19	06/13/17 16:28	SKS
2,4-Dinitrophenol	04	SW8270D	<51.5 ug/L		51.5	1	06/12/17 09:19	06/13/17 16:28	SKS
2,4-Dinitrotoluene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
2,6-Dichlorophenol	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
2,6-Dinitrotoluene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
2-Chloronaphthalene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
2-Chlorophenol	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
2-Methylnaphthalene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
2-Naphthylamine	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
2-Nitroaniline	04	SW8270D	<20.6 ug/L		20.6	1	06/12/17 09:19	06/13/17 16:28	SKS
2-Nitrophenol	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
3,3'-Dichlorobenzidine	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
3-Methylcholanthrene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
3-Nitroaniline	04	SW8270D	<20.6 ug/L		20.6	1	06/12/17 09:19	06/13/17 16:28	SKS
4,6-Dinitro-2-methylphenol	04	SW8270D	<51.5 ug/L		51.5	1	06/12/17 09:19	06/13/17 16:28	SKS
4-Aminobiphenyl	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
4-Bromophenyl phenyl ether	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
4-Chloroaniline	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-4 1231 Cardwell **Laboratory Sample ID:** 17F0377-04

Grab Date/Time: 06/09/2017 15:23

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
4-Chlorophenyl phenyl ether	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
4-Nitroaniline	04	SW8270D	<20.6 ug/L		20.6	1	06/12/17 09:19	06/13/17 16:28	SKS
4-Nitrophenol	04	SW8270D	<51.5 ug/L		51.5	1	06/12/17 09:19	06/13/17 16:28	SKS
7,12-Dimethylbenz (a) anthracene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Acenaphthene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Acenaphthylene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Acetophenone	04	SW8270D	<20.6 ug/L		20.6	1	06/12/17 09:19	06/13/17 16:28	SKS
Aniline	04	SW8270D	<51.5 ug/L		51.5	1	06/12/17 09:19	06/13/17 16:28	SKS
Anthracene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Benzidine	04	SW8270D	<51.5 ug/L		51.5	1	06/12/17 09:19	06/13/17 16:28	SKS
Benzo (a) anthracene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Benzo (a) pyrene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Benzo (b) fluoranthene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Benzo (g,h,i) perylene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Benzo (k) fluoranthene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Benzoic acid	04	SW8270D	<51.5 ug/L		51.5	1	06/12/17 09:19	06/13/17 16:28	SKS
Benzyl alcohol	04	SW8270D	<20.6 ug/L		20.6	1	06/12/17 09:19	06/13/17 16:28	SKS
bis (2-Chloroethoxy) methane	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
bis (2-Chloroethyl) ether	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
2,2'-Oxybis (1-chloropropane)	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
bis (2-Ethylhexyl) phthalate	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Butyl benzyl phthalate	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Chrysene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Dibenz (a,h) anthracene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Dibenz (a,j) acridine	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-4 1231 Cardwell **Laboratory Sample ID:** 17F0377-04

Grab Date/Time: 06/09/2017 15:23

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
Dibenzofuran	04	SW8270D	<5.15 ug/L		5.15	1	06/12/17 09:19	06/13/17 16:28	SKS
Diethyl phthalate	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Dimethyl phthalate	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Di-n-butyl phthalate	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Di-n-octyl phthalate	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Diphenylamine	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Ethyl methanesulfonate	04	SW8270D	<20.6 ug/L		20.6	1	06/12/17 09:19	06/13/17 16:28	SKS
Fluoranthene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Fluorene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Hexachlorobenzene	04	SW8270D	<1.03 ug/L		1.03	1	06/12/17 09:19	06/13/17 16:28	SKS
Hexachlorobutadiene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Hexachlorocyclopentadiene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Hexachloroethane	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Indeno (1,2,3-cd) pyrene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Isophorone	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
m+p-Cresols	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Methyl methanesulfonate	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Naphthalene	04	SW8270D	<5.15 ug/L		5.15	1	06/12/17 09:19	06/13/17 16:28	SKS
Nitrobenzene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
n-Nitrosodimethylamine	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
n-Nitrosodi-n-butylamine	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
n-Nitrosodi-n-propylamine	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
n-Nitrosodiphenylamine	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
n-Nitrosopiperidine	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
o+m+p-Cresols	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
o-Cresol	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17F0377

Analytical Results

Sample I.D. 6917001-4 1231 Cardwell **Laboratory Sample ID:** 17F0377-04

Grab Date/Time: 06/09/2017 15:23

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Semivolatile Organic Compounds by GCMS									
p-(Dimethylamino) azobenzene	04	SW8270D	<2.58 ug/L		2.58	1	06/12/17 09:19	06/13/17 16:28	SKS
p-Chloro-m-cresol	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Pentachloronitrobenzene (quintozene)	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Pentachlorophenol	04	SW8270D	<20.6 ug/L		20.6	1	06/12/17 09:19	06/13/17 16:28	SKS
Phenacetin	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Phenanthrene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Phenol	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Pronamide	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Pyrene	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Pyridine	04	SW8270D	<10.3 ug/L		10.3	1	06/12/17 09:19	06/13/17 16:28	SKS
Surr: 2,4,6-Tribromophenol	*04*	*SW8270D*	*73.2 %*		*20-86*		*06/12/17 09:19*	*06/13/17 16:28*	*SKS*
Surr: 2-Fluorobiphenyl	*04*	*SW8270D*	*69.2 %*		*23-87*		*06/12/17 09:19*	*06/13/17 16:28*	*SKS*
Surr: 2-Fluorophenol	*04*	*SW8270D*	*41.6 %*		*10-52*		*06/12/17 09:19*	*06/13/17 16:28*	*SKS*
Surr: Nitrobenzene-d5	*04*	*SW8270D*	*75.9 %*		*10-98.5*		*06/12/17 09:19*	*06/13/17 16:28*	*SKS*
Surr: Phenol-d5	*04*	*SW8270D*	*26.6 %*		*5-33*		*06/12/17 09:19*	*06/13/17 16:28*	*SKS*
Surr: p-Terphenyl-d14	*04*	*SW8270D*	*80.7 %*		*27-133*		*06/12/17 09:19*	*06/13/17 16:28*	*SKS*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	04	SW8011	<0.010 ug/L		0.010	1	06/12/17 16:40	06/12/17 23:19	LBH
1,2,3-Trichloropropane	04	SW8011	<0.010 ug/L		0.010	1	06/12/17 16:40	06/12/17 23:19	LBH
1,2-Dibromo-3-chloropropane (DBCP)	04	SW8011	<0.010 ug/L		0.010	1	06/12/17 16:40	06/12/17 23:19	LBH

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Semivolatile Organic Compounds by GCMS		**Preparation Method:**	**SW3510C**		
17F0377-03	980 mL / 1.00 mL	SW8270D	BAF0300	SAF0359	AF70037
17F0377-04	970 mL / 1.00 mL	SW8270D	BAF0300	SAF0359	AF70037

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Organic Compounds by GCMS		**Preparation Method:**	**SW5030B**		
17F0377-01	5.00 mL / 5.00 mL	SW8260B	BAF0354	SAF0346	AF70056
17F0377-03	5.00 mL / 5.00 mL	SW8260B	BAF0354	SAF0346	AF70056
17F0377-04	5.00 mL / 5.00 mL	SW8260B	BAF0354	SAF0346	AF70056

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Micro-extractables by GC/ECD		**Preparation Method:**	**SW8011**		
17F0377-02	61.2 mL / 2.00 mL	SW8011	BAF0342	SAF0335	AD70134
17F0377-03	61.7 mL / 2.00 mL	SW8011	BAF0342	SAF0335	AD70134
17F0377-04	61.3 mL / 2.00 mL	SW8011	BAF0342	SAF0335	AD70134

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0354 - SW5030B										
Blank (BAF0354-BLK1)				Prepared & Analyzed: 06/12/2017						
1,1,1,2-Tetrachloroethane	<0.40 ug/L	0.40	ug/L							
1,1,1-Trichloroethane	<1.00 ug/L	1.00	ug/L							
1,1,2,2-Tetrachloroethane	<0.40 ug/L	0.40	ug/L							
1,1,2-Trichloroethane	<1.00 ug/L	1.00	ug/L							
1,1-Dichloroethane	<1.00 ug/L	1.00	ug/L							
1,1-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
1,1-Dichloropropene	<1.00 ug/L	1.00	ug/L							
1,2,3-Trichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2,3-Trichloropropane	<1.00 ug/L	1.00	ug/L							
1,2,4-Trichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2,4-Trimethylbenzene	<1.00 ug/L	1.00	ug/L							
1,2-Dibromo-3-chloropropane (DBCP)	<4.00 ug/L	4.00	ug/L							
1,2-Dibromoethane (EDB)	<1.00 ug/L	1.00	ug/L							
1,2-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2-Dichloroethane	<1.00 ug/L	1.00	ug/L							
1,2-Dichloropropane	<1.00 ug/L	1.00	ug/L							
1,3,5-Trimethylbenzene	<1.00 ug/L	1.00	ug/L							
1,3-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,3-Dichloropropane	<1.00 ug/L	1.00	ug/L							
1,4-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
2,2-Dichloropropane	<2.00 ug/L	2.00	ug/L							
2-Butanone (MEK)	<10.0 ug/L	10.0	ug/L							
2-Chlorotoluene	<1.00 ug/L	1.00	ug/L							
2-Hexanone (MBK)	<5.00 ug/L	5.00	ug/L							
4-Chlorotoluene	<1.00 ug/L	1.00	ug/L							
4-Isopropyltoluene	<1.00 ug/L	1.00	ug/L							
4-Methyl-2-pentanone (MIBK)	<5.00 ug/L	5.00	ug/L							
Acetone	<10.0 ug/L	10.0	ug/L							
Benzene	<1.00 ug/L	1.00	ug/L							
Bromobenzene	<1.00 ug/L	1.00	ug/L							
Bromochloromethane	<1.00 ug/L	1.00	ug/L							

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0354 - SW5030B										
Blank (BAF0354-BLK1)				Prepared & Analyzed: 06/12/2017						
Bromodichloromethane	<0.50 ug/L	0.50	ug/L							
Bromoform	<1.00 ug/L	1.00	ug/L							
Bromomethane	<1.00 ug/L	1.00	ug/L							
Carbon disulfide	<10.0 ug/L	10.0	ug/L							
Carbon tetrachloride	<1.00 ug/L	1.00	ug/L							
Chlorobenzene	<1.00 ug/L	1.00	ug/L							
Chloroethane	<1.00 ug/L	1.00	ug/L							
Chloroform	<0.50 ug/L	0.50	ug/L							
Chloromethane	<1.00 ug/L	1.00	ug/L							
cis-1,2-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
cis-1,3-Dichloropropene	<1.00 ug/L	1.00	ug/L							
Dibromochloromethane	<1.00 ug/L	1.00	ug/L							
Dibromomethane	<1.00 ug/L	1.00	ug/L							
Dichlorodifluoromethane	<1.00 ug/L	1.00	ug/L							
Di-isopropyl ether (DIPE)	<5.00 ug/L	5.00	ug/L							
Ethylbenzene	<1.00 ug/L	1.00	ug/L							
Hexachlorobutadiene	<1.00 ug/L	1.00	ug/L							
Iodomethane	<10.0 ug/L	10.0	ug/L							
Isopropylbenzene	<1.00 ug/L	1.00	ug/L							
m+p-Xylenes	<2.00 ug/L	2.00	ug/L							
Methylene chloride	<4.00 ug/L	4.00	ug/L							
Methyl-t-butyl ether (MTBE)	<1.00 ug/L	1.00	ug/L							
Naphthalene	<1.00 ug/L	1.00	ug/L							
n-Butylbenzene	<1.00 ug/L	1.00	ug/L							
n-Propylbenzene	<1.00 ug/L	1.00	ug/L							
o-Xylene	<1.00 ug/L	1.00	ug/L							
sec-Butylbenzene	<1.00 ug/L	1.00	ug/L							
Styrene	<1.00 ug/L	1.00	ug/L							
tert-Butylbenzene	<1.00 ug/L	1.00	ug/L							
Tetrachloroethylene (PCE)	<1.00 ug/L	1.00	ug/L							
Toluene	<1.00 ug/L	1.00	ug/L							

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0354 - SW5030B										
Blank (BAF0354-BLK1)				Prepared & Analyzed: 06/12/2017						
trans-1,2-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
trans-1,3-Dichloropropene	<1.00 ug/L	1.00	ug/L							
Trichloroethylene	<1.00 ug/L	1.00	ug/L							
Trichlorofluoromethane	<1.00 ug/L	1.00	ug/L							
Vinyl acetate	<10.0 ug/L	10.0	ug/L							
Vinyl chloride	<0.50 ug/L	0.50	ug/L							
Xylenes, Total	<3.00 ug/L	3.00	ug/L							
Surr: 1,2-Dichloroethane-d4	50.8		ug/L	50.0		102	70-120			
Surr: 4-Bromofluorobenzene	47.9		ug/L	50.0		95.8	75-120			
Surr: Dibromofluoromethane	49.7		ug/L	50.0		99.5	80-119			
Surr: Toluene-d8	50.1		ug/L	50.0		100	85-120			
LCS (BAF0354-BS1)				Prepared & Analyzed: 06/12/2017						
1,1,1,2-Tetrachloroethane	51.6 ug/L	0.4	ug/L	50.0	ug/L	103	80-130			
1,1,1-Trichloroethane	50.9 ug/L	1	ug/L	50.0	ug/L	102	65-130			
1,1,2,2-Tetrachloroethane	51.4 ug/L	0.4	ug/L	50.0	ug/L	103	65-130			
1,1,2-Trichloroethane	49.9 ug/L	1	ug/L	50.0	ug/L	99.8	75-125			
1,1-Dichloroethane	51.1 ug/L	1	ug/L	50.0	ug/L	102	70-135			
1,1-Dichloroethylene	46.7 ug/L	1	ug/L	50.0	ug/L	93.4	70-130			
1,1-Dichloropropene	53.7 ug/L	1	ug/L	50.0	ug/L	107	75-135			
1,2,3-Trichlorobenzene	55.6 ug/L	1	ug/L	50.0	ug/L	111	55-140			
1,2,3-Trichloropropane	50.0 ug/L	1	ug/L	50.0	ug/L	100	75-125			
1,2,4-Trichlorobenzene	54.7 ug/L	1	ug/L	50.0	ug/L	109	65-135			
1,2,4-Trimethylbenzene	57.8 ug/L	1	ug/L	50.0	ug/L	116	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	52.1 ug/L	4	ug/L	50.0	ug/L	104	50-130			
1,2-Dibromoethane (EDB)	52.4 ug/L	1	ug/L	50.0	ug/L	105	80-120			
1,2-Dichlorobenzene	52.5 ug/L	1	ug/L	50.0	ug/L	105	70-120			
1,2-Dichloroethane	51.2 ug/L	1	ug/L	50.0	ug/L	102	70-130			
1,2-Dichloropropane	51.7 ug/L	1	ug/L	50.0	ug/L	103	75-125			
1,3,5-Trimethylbenzene	57.6 ug/L	1	ug/L	50.0	ug/L	115	75-125			
1,3-Dichlorobenzene	55.1 ug/L	1	ug/L	50.0	ug/L	110	75-125			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0354 - SW5030B										
LCS (BAF0354-BS1)				Prepared & Analyzed: 06/12/2017						
1,3-Dichloropropane	49.3 ug/L	1	ug/L	50.0	ug/L	98.6	75-125			
1,4-Dichlorobenzene	53.1 ug/L	1	ug/L	50.0	ug/L	106	75-125			
2,2-Dichloropropane	53.5 ug/L	2	ug/L	50.0	ug/L	107	70-135			
2-Butanone (MEK)	53.9 ug/L	10	ug/L	50.0	ug/L	108	30-150			
2-Chlorotoluene	58.5 ug/L	1	ug/L	50.0	ug/L	117	75-125			
2-Hexanone (MBK)	54.5 ug/L	5	ug/L	50.0	ug/L	109	55-130			
4-Chlorotoluene	57.1 ug/L	1	ug/L	50.0	ug/L	114	75-130			
4-Isopropyltoluene	56.7 ug/L	1	ug/L	50.0	ug/L	113	75-130			
4-Methyl-2-pentanone (MIBK)	52.4 ug/L	5	ug/L	50.0	ug/L	105	60-135			
Acetone	54.8 ug/L	10	ug/L	50.0	ug/L	110	40-140			
Benzene	51.1 ug/L	1	ug/L	50.0	ug/L	102	80-120			
Bromobenzene	49.9 ug/L	1	ug/L	50.0	ug/L	99.7	75-125			
Bromochloromethane	47.2 ug/L	1	ug/L	50.0	ug/L	94.3	65-130			
Bromodichloromethane	52.6 ug/L	0.5	ug/L	50.0	ug/L	105	75-120			
Bromoform	49.4 ug/L	1	ug/L	50.0	ug/L	98.8	70-130			
Bromomethane	34.1 ug/L	1	ug/L	50.0	ug/L	68.3	30-145			
Carbon disulfide	67.4 ug/L	10	ug/L	50.0	ug/L	135	35-160			
Carbon tetrachloride	51.8 ug/L	1	ug/L	50.0	ug/L	104	65-140			
Chlorobenzene	51.9 ug/L	1	ug/L	50.0	ug/L	104	80-120			
Chloroethane	43.4 ug/L	1	ug/L	50.0	ug/L	86.8	60-135			
Chloroform	47.6 ug/L	0.5	ug/L	50.0	ug/L	95.1	65-135			
Chloromethane	43.9 ug/L	1	ug/L	50.0	ug/L	87.9	40-125			
cis-1,2-Dichloroethylene	49.2 ug/L	1	ug/L	50.0	ug/L	98.4	70-125			
cis-1,3-Dichloropropene	48.2 ug/L	1	ug/L	50.0	ug/L	96.4	70-130			
Dibromochloromethane	48.3 ug/L	1	ug/L	50.0	ug/L	96.6	60-135			
Dibromomethane	49.2 ug/L	1	ug/L	50.0	ug/L	98.3	75-125			
Dichlorodifluoromethane	43.9 ug/L	1	ug/L	50.0	ug/L	87.8	30-155			
Ethylbenzene	55.3 ug/L	1	ug/L	50.0	ug/L	111	75-125			
Hexachlorobutadiene	51.8 ug/L	1	ug/L	50.0	ug/L	104	50-140			
Isopropylbenzene	51.2 ug/L	1	ug/L	50.0	ug/L	102	75-125			
m+p-Xylenes	111 ug/L	2	ug/L	100	ug/L	111	75-130			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0354 - SW5030B										
LCS (BAF0354-BS1)				Prepared & Analyzed: 06/12/2017						
Methylene chloride	47.0 ug/L	4	ug/L	50.0	ug/L	94.1	55-140			
Methyl-t-butyl ether (MTBE)	54.8 ug/L	1	ug/L	50.0	ug/L	110	65-125			
Naphthalene	58.0 ug/L	1	ug/L	50.0	ug/L	116	55-140			
n-Butylbenzene	60.6 ug/L	1	ug/L	50.0	ug/L	121	70-135			
n-Propylbenzene	61.0 ug/L	1	ug/L	50.0	ug/L	122	70-130			
o-Xylene	54.8 ug/L	1	ug/L	50.0	ug/L	110	80-120			
sec-Butylbenzene	59.6 ug/L	1	ug/L	50.0	ug/L	119	70-125			
Styrene	58.3 ug/L	1	ug/L	50.0	ug/L	117	65-135			
tert-Butylbenzene	60.5 ug/L	1	ug/L	50.0	ug/L	121	70-130			
Tetrachloroethylene (PCE)	63.9 ug/L	1	ug/L	50.0	ug/L	128	45-150			
Toluene	49.5 ug/L	1	ug/L	50.0	ug/L	99.0	75-120			
trans-1,2-Dichloroethylene	49.9 ug/L	1	ug/L	50.0	ug/L	99.8	60-140			
trans-1,3-Dichloropropene	53.2 ug/L	1	ug/L	50.0	ug/L	106	55-140			
Trichloroethylene	48.9 ug/L	1	ug/L	50.0	ug/L	97.9	70-125			
Trichlorofluoromethane	43.3 ug/L	1	ug/L	50.0	ug/L	86.6	60-145			
Vinyl chloride	39.9 ug/L	0.5	ug/L	50.0	ug/L	79.7	50-145			
Surr: 1,2-Dichloroethane-d4	49.1		ug/L	50.0	ug/L	98.1	70-120			
Surr: 4-Bromofluorobenzene	49.7		ug/L	50.0	ug/L	99.4	75-120			
Surr: Dibromofluoromethane	48.4		ug/L	50.0	ug/L	96.8	80-119			
Surr: Toluene-d8	48.0		ug/L	50.0	ug/L	96.1	85-120			
Matrix Spike (BAF0354-MS1)	**Source: 17F0377-04**			Prepared & Analyzed: 06/12/2017						
1,1,1,2-Tetrachloroethane	52.0 ug/L	0.4	ug/L	50.0	<0.4 ug/L	104	80-130			
1,1,1-Trichloroethane	48.0 ug/L	1	ug/L	50.0	<1 ug/L	96.0	65-130			
1,1,2,2-Tetrachloroethane	54.3 ug/L	0.4	ug/L	50.0	<0.4 ug/L	109	65-130			
1,1,2-Trichloroethane	52.7 ug/L	1	ug/L	50.0	<1 ug/L	105	75-125			
1,1-Dichloroethane	49.3 ug/L	1	ug/L	50.0	<1 ug/L	98.7	70-135			
1,1-Dichloroethylene	44.9 ug/L	1	ug/L	50.0	<1 ug/L	89.7	70-130			
1,1-Dichloropropene	50.7 ug/L	1	ug/L	50.0	<1 ug/L	101	75-135			
1,2,3-Trichlorobenzene	57.5 ug/L	1	ug/L	50.0	<1 ug/L	115	55-140			
1,2,3-Trichloropropane	53.3 ug/L	1	ug/L	50.0	<1 ug/L	107	75-125			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0354 - SW5030B										
Matrix Spike (BAF0354-MS1)		**Source: 17F0377-04**		Prepared & Analyzed: 06/12/2017						
1,2,4-Trichlorobenzene	57.7 ug/L	1	ug/L	50.0	<1 ug/L	115	65-135			
1,2,4-Trimethylbenzene	57.3 ug/L	1	ug/L	50.0	<1 ug/L	115	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	58.8 ug/L	4	ug/L	50.0	<4 ug/L	118	50-130			
1,2-Dibromoethane (EDB)	54.5 ug/L	1	ug/L	50.0	<1 ug/L	109	80-120			
1,2-Dichlorobenzene	53.8 ug/L	1	ug/L	50.0	<1 ug/L	108	70-120			
1,2-Dichloroethane	50.8 ug/L	1	ug/L	50.0	<1 ug/L	102	70-130			
1,2-Dichloropropane	52.3 ug/L	1	ug/L	50.0	<1 ug/L	105	75-125			
1,3,5-Trimethylbenzene	58.4 ug/L	1	ug/L	50.0	<1 ug/L	117	75-125			
1,3-Dichlorobenzene	55.7 ug/L	1	ug/L	50.0	<1 ug/L	111	75-125			
1,3-Dichloropropane	51.8 ug/L	1	ug/L	50.0	<1 ug/L	104	75-125			
1,4-Dichlorobenzene	53.3 ug/L	1	ug/L	50.0	<1 ug/L	107	75-125			
2,2-Dichloropropane	49.9 ug/L	2	ug/L	50.0	<2 ug/L	99.9	70-135			
2-Butanone (MEK)	57.3 ug/L	10	ug/L	50.0	<10 ug/L	115	30-150			
2-Chlorotoluene	57.3 ug/L	1	ug/L	50.0	<1 ug/L	115	75-125			
2-Hexanone (MBK)	57.6 ug/L	5	ug/L	50.0	<5 ug/L	115	55-130			
4-Chlorotoluene	56.8 ug/L	1	ug/L	50.0	<1 ug/L	114	75-130			
4-Isopropyltoluene	56.4 ug/L	1	ug/L	50.0	<1 ug/L	113	75-130			
4-Methyl-2-pentanone (MIBK)	55.8 ug/L	5	ug/L	50.0	<5 ug/L	112	60-135			
Acetone	60.2 ug/L	10	ug/L	50.0	<10 ug/L	116	40-140			
Benzene	50.9 ug/L	1	ug/L	50.0	<1 ug/L	102	80-120			
Bromobenzene	49.9 ug/L	1	ug/L	50.0	<1 ug/L	99.8	75-125			
Bromochloromethane	48.0 ug/L	1	ug/L	50.0	<1 ug/L	96.0	65-130			
Bromodichloromethane	52.8 ug/L	0.5	ug/L	50.0	<0.5 ug/L	106	75-120			
Bromoform	52.0 ug/L	1	ug/L	50.0	<1 ug/L	104	70-130			
Bromomethane	33.0 ug/L	1	ug/L	50.0	<1 ug/L	66.1	30-145			
Carbon disulfide	61.1 ug/L	10	ug/L	50.0	<10 ug/L	122	35-160			
Carbon tetrachloride	51.9 ug/L	1	ug/L	50.0	<1 ug/L	104	65-140			
Chlorobenzene	50.9 ug/L	1	ug/L	50.0	<1 ug/L	102	80-120			
Chloroethane	39.8 ug/L	1	ug/L	50.0	<1 ug/L	79.5	60-135			
Chloroform	46.1 ug/L	0.5	ug/L	50.0	<0.5 ug/L	92.3	65-135			
Chloromethane	41.3 ug/L	1	ug/L	50.0	<1 ug/L	82.6	40-125			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0354 - SW5030B										
Matrix Spike (BAF0354-MS1)	**Source: 17F0377-04**		Prepared & Analyzed: 06/12/2017							
cis-1,2-Dichloroethylene	47.6 ug/L	1	ug/L	50.0	<1 ug/L	95.2	70-125			
cis-1,3-Dichloropropene	49.6 ug/L	1	ug/L	50.0	<1 ug/L	99.2	70-130			
Dibromochloromethane	50.8 ug/L	1	ug/L	50.0	<1 ug/L	102	60-135			
Dibromomethane	50.7 ug/L	1	ug/L	50.0	<1 ug/L	101	75-125			
Dichlorodifluoromethane	40.4 ug/L	1	ug/L	50.0	<1 ug/L	80.8	30-155			
Ethylbenzene	54.7 ug/L	1	ug/L	50.0	<1 ug/L	109	75-125			
Hexachlorobutadiene	52.8 ug/L	1	ug/L	50.0	<1 ug/L	106	50-140			
Isopropylbenzene	50.4 ug/L	1	ug/L	50.0	<1 ug/L	101	75-125			
m+p-Xylenes	109 ug/L	2	ug/L	100	<2 ug/L	109	75-130			
Methylene chloride	46.3 ug/L	4	ug/L	50.0	<4 ug/L	92.6	55-140			
Methyl-t-butyl ether (MTBE)	57.6 ug/L	1	ug/L	50.0	<1 ug/L	115	65-125			
Naphthalene	66.2 ug/L	1	ug/L	50.0	<1 ug/L	132	55-140			
n-Butylbenzene	59.5 ug/L	1	ug/L	50.0	<1 ug/L	119	70-135			
n-Propylbenzene	60.3 ug/L	1	ug/L	50.0	<1 ug/L	121	70-130			
o-Xylene	54.2 ug/L	1	ug/L	50.0	<1 ug/L	108	80-120			
sec-Butylbenzene	58.5 ug/L	1	ug/L	50.0	<1 ug/L	117	70-125			
Styrene	58.2 ug/L	1	ug/L	50.0	<1 ug/L	116	65-135			
tert-Butylbenzene	60.4 ug/L	1	ug/L	50.0	<1 ug/L	121	70-130			
Tetrachloroethylene (PCE)	63.8 ug/L	1	ug/L	50.0	<1 ug/L	128	45-150			
Toluene	49.6 ug/L	1	ug/L	50.0	<1 ug/L	99.3	75-120			
trans-1,2-Dichloroethylene	46.7 ug/L	1	ug/L	50.0	<1 ug/L	93.4	60-140			
trans-1,3-Dichloropropene	56.0 ug/L	1	ug/L	50.0	<1 ug/L	112	55-140			
Trichloroethylene	49.0 ug/L	1	ug/L	50.0	<1 ug/L	97.9	70-125			
Trichlorofluoromethane	39.9 ug/L	1	ug/L	50.0	<1 ug/L	79.7	60-145			
Vinyl chloride	32.3 ug/L	0.5	ug/L	50.0	<0.5 ug/L	64.7	50-145			
Surr: 1,2-Dichloroethane-d4	48.5		ug/L	50.0	ug/L	97.1	70-120			
Surr: 4-Bromofluorobenzene	49.9		ug/L	50.0	ug/L	99.7	75-120			
Surr: Dibromofluoromethane	47.1		ug/L	50.0	ug/L	94.3	80-119			
Surr: Toluene-d8	48.8		ug/L	50.0	ug/L	97.6	85-120			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0354 - SW5030B										
Matrix Spike Dup (BAF0354-MSD1)		**Source: 17F0377-04**		Prepared & Analyzed: 06/12/2017						
1,1,1,2-Tetrachloroethane	51.1 ug/L	0.4	ug/L	50.0	<0.4 ug/L	102	80-130	1.81	30	
1,1,1-Trichloroethane	47.5 ug/L	1	ug/L	50.0	<1 ug/L	95.0	65-130	1.04	30	
1,1,2,2-Tetrachloroethane	53.2 ug/L	0.4	ug/L	50.0	<0.4 ug/L	106	65-130	1.97	30	
1,1,2-Trichloroethane	50.3 ug/L	1	ug/L	50.0	<1 ug/L	101	75-125	4.76	30	
1,1-Dichloroethane	48.3 ug/L	1	ug/L	50.0	<1 ug/L	96.5	70-135	2.16	30	
1,1-Dichloroethylene	43.9 ug/L	1	ug/L	50.0	<1 ug/L	87.8	70-130	2.12	30	
1,1-Dichloropropene	49.5 ug/L	1	ug/L	50.0	<1 ug/L	99.0	75-135	2.47	30	
1,2,3-Trichlorobenzene	55.5 ug/L	1	ug/L	50.0	<1 ug/L	111	55-140	3.54	30	
1,2,3-Trichloropropane	52.1 ug/L	1	ug/L	50.0	<1 ug/L	104	75-125	2.28	30	
1,2,4-Trichlorobenzene	55.1 ug/L	1	ug/L	50.0	<1 ug/L	110	65-135	4.68	30	
1,2,4-Trimethylbenzene	55.2 ug/L	1	ug/L	50.0	<1 ug/L	110	75-130	3.76	30	
1,2-Dibromo-3-chloropropane (DBCP)	55.6 ug/L	4	ug/L	50.0	<4 ug/L	111	50-130	5.71	30	
1,2-Dibromoethane (EDB)	52.8 ug/L	1	ug/L	50.0	<1 ug/L	106	80-120	3.24	30	
1,2-Dichlorobenzene	52.1 ug/L	1	ug/L	50.0	<1 ug/L	104	70-120	3.09	30	
1,2-Dichloroethane	49.1 ug/L	1	ug/L	50.0	<1 ug/L	98.3	70-130	3.30	30	
1,2-Dichloropropane	50.9 ug/L	1	ug/L	50.0	<1 ug/L	102	75-125	2.74	30	
1,3,5-Trimethylbenzene	56.5 ug/L	1	ug/L	50.0	<1 ug/L	113	75-125	3.30	30	
1,3-Dichlorobenzene	53.3 ug/L	1	ug/L	50.0	<1 ug/L	107	75-125	4.51	30	
1,3-Dichloropropane	49.5 ug/L	1	ug/L	50.0	<1 ug/L	98.9	75-125	4.56	30	
1,4-Dichlorobenzene	51.0 ug/L	1	ug/L	50.0	<1 ug/L	102	75-125	4.43	30	
2,2-Dichloropropane	49.4 ug/L	2	ug/L	50.0	<2 ug/L	98.9	70-135	1.02	30	
2-Butanone (MEK)	67.4 ug/L	10	ug/L	50.0	<10 ug/L	135	30-150	16.1	30	
2-Chlorotoluene	55.3 ug/L	1	ug/L	50.0	<1 ug/L	111	75-125	3.59	30	
2-Hexanone (MBK)	62.2 ug/L	5	ug/L	50.0	<5 ug/L	124	55-130	7.73	30	
4-Chlorotoluene	54.6 ug/L	1	ug/L	50.0	<1 ug/L	109	75-130	4.01	30	
4-Isopropyltoluene	55.0 ug/L	1	ug/L	50.0	<1 ug/L	110	75-130	2.64	30	
4-Methyl-2-pentanone (MIBK)	60.6 ug/L	5	ug/L	50.0	<5 ug/L	121	60-135	8.11	30	
Acetone	65.1 ug/L	10	ug/L	50.0	<10 ug/L	126	40-140	7.92	30	
Benzene	49.3 ug/L	1	ug/L	50.0	<1 ug/L	98.7	80-120	3.11	30	
Bromobenzene	48.6 ug/L	1	ug/L	50.0	<1 ug/L	97.1	75-125	2.75	30	
Bromochloromethane	47.8 ug/L	1	ug/L	50.0	<1 ug/L	95.6	65-130	0.443	30	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0354 - SW5030B										
Matrix Spike Dup (BAF0354-MSD1)		**Source: 17F0377-04**		Prepared & Analyzed: 06/12/2017						
Bromodichloromethane	50.2 ug/L	0.5	ug/L	50.0	<0.5 ug/L	100	75-120	5.12	30	
Bromoform	50.3 ug/L	1	ug/L	50.0	<1 ug/L	101	70-130	3.44	30	
Bromomethane	34.2 ug/L	1	ug/L	50.0	<1 ug/L	68.4	30-145	3.48	30	
Carbon disulfide	64.8 ug/L	10	ug/L	50.0	<10 ug/L	130	35-160	5.87	30	
Carbon tetrachloride	49.8 ug/L	1	ug/L	50.0	<1 ug/L	99.5	65-140	4.13	30	
Chlorobenzene	50.1 ug/L	1	ug/L	50.0	<1 ug/L	100	80-120	1.68	30	
Chloroethane	39.0 ug/L	1	ug/L	50.0	<1 ug/L	78.0	60-135	1.92	30	
Chloroform	45.0 ug/L	0.5	ug/L	50.0	<0.5 ug/L	90.1	65-135	2.41	30	
Chloromethane	40.9 ug/L	1	ug/L	50.0	<1 ug/L	81.9	40-125	0.910	30	
cis-1,2-Dichloroethylene	46.2 ug/L	1	ug/L	50.0	<1 ug/L	92.4	70-125	2.98	30	
cis-1,3-Dichloropropene	47.2 ug/L	1	ug/L	50.0	<1 ug/L	94.3	70-130	4.99	30	
Dibromochloromethane	49.1 ug/L	1	ug/L	50.0	<1 ug/L	98.1	60-135	3.47	30	
Dibromomethane	48.1 ug/L	1	ug/L	50.0	<1 ug/L	96.3	75-125	5.19	30	
Dichlorodifluoromethane	39.9 ug/L	1	ug/L	50.0	<1 ug/L	79.9	30-155	1.09	30	
Ethylbenzene	53.5 ug/L	1	ug/L	50.0	<1 ug/L	107	75-125	2.15	30	
Hexachlorobutadiene	51.2 ug/L	1	ug/L	50.0	<1 ug/L	102	50-140	3.10	30	
Isopropylbenzene	49.5 ug/L	1	ug/L	50.0	<1 ug/L	99.1	75-125	1.75	30	
m+p-Xylenes	107 ug/L	2	ug/L	100	<2 ug/L	107	75-130	2.05	30	
Methylene chloride	44.8 ug/L	4	ug/L	50.0	<4 ug/L	89.7	55-140	3.19	30	
Methyl-t-butyl ether (MTBE)	56.5 ug/L	1	ug/L	50.0	<1 ug/L	113	65-125	1.97	30	
Naphthalene	62.5 ug/L	1	ug/L	50.0	<1 ug/L	125	55-140	5.63	30	
n-Butylbenzene	57.1 ug/L	1	ug/L	50.0	<1 ug/L	114	70-135	4.03	30	
n-Propylbenzene	58.0 ug/L	1	ug/L	50.0	<1 ug/L	116	70-130	3.78	30	
o-Xylene	53.0 ug/L	1	ug/L	50.0	<1 ug/L	106	80-120	2.13	30	
sec-Butylbenzene	56.3 ug/L	1	ug/L	50.0	<1 ug/L	113	70-125	3.99	30	
Styrene	56.8 ug/L	1	ug/L	50.0	<1 ug/L	114	65-135	2.40	30	
tert-Butylbenzene	58.1 ug/L	1	ug/L	50.0	<1 ug/L	116	70-130	3.93	30	
Tetrachloroethylene (PCE)	61.8 ug/L	1	ug/L	50.0	<1 ug/L	124	45-150	3.11	30	
Toluene	48.1 ug/L	1	ug/L	50.0	<1 ug/L	96.2	75-120	3.14	30	
trans-1,2-Dichloroethylene	46.2 ug/L	1	ug/L	50.0	<1 ug/L	92.4	60-140	1.04	30	
trans-1,3-Dichloropropene	53.9 ug/L	1	ug/L	50.0	<1 ug/L	108	55-140	3.85	30	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0354 - SW5030B										
Matrix Spike Dup (BAF0354-MSD1)	**Source: 17F0377-04**		Prepared & Analyzed: 06/12/2017							
Trichloroethylene	47.8 ug/L	1	ug/L	50.0	<1 ug/L	95.6	70-125	2.39	30	
Trichlorofluoromethane	39.6 ug/L	1	ug/L	50.0	<1 ug/L	79.1	60-145	0.740	30	
Vinyl chloride	31.8 ug/L	0.5	ug/L	50.0	<0.5 ug/L	63.6	50-145	1.65	30	
Surr: 1,2-Dichloroethane-d4	49.5		ug/L	50.0	ug/L	99.1	70-120			
Surr: 4-Bromofluorobenzene	49.9		ug/L	50.0	ug/L	99.8	75-120			
Surr: Dibromofluoromethane	47.0		ug/L	50.0	ug/L	94.0	80-119			
Surr: Toluene-d8	48.8		ug/L	50.0	ug/L	97.6	85-120			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Semivolatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0300 - SW3510C										
Blank (BAF0300-BLK1)				Prepared: 06/12/2017 Analyzed: 06/13/2017						
1,2,4,5-Tetrachlorobenzene	<10.0 ug/L	10.0	ug/L							
1,2,4-Trichlorobenzene	<10.0 ug/L	10.0	ug/L							
1,2-Dichlorobenzene	<10.0 ug/L	10.0	ug/L							
1,2-Diphenylhydrazine	<10.0 ug/L	10.0	ug/L							
1,3-Dichlorobenzene	<10.0 ug/L	10.0	ug/L							
1,3-Dinitrobenzene	<2.50 ug/L	2.50	ug/L							
1,4-Dichlorobenzene	<10.0 ug/L	10.0	ug/L							
1-Naphthylamine	<10.0 ug/L	10.0	ug/L							
2,3,4,6-Tetrachlorophenol	<10.0 ug/L	10.0	ug/L							
2,4,5-Trichlorophenol	<10.0 ug/L	10.0	ug/L							
2,4,6-Trichlorophenol	<10.0 ug/L	10.0	ug/L							
2,4-Dichlorophenol	<10.0 ug/L	10.0	ug/L							
2,4-Dimethylphenol	<0.50 ug/L	0.50	ug/L							
2,4-Dinitrophenol	<50.0 ug/L	50.0	ug/L							
2,4-Dinitrotoluene	<10.0 ug/L	10.0	ug/L							
2,6-Dichlorophenol	<10.0 ug/L	10.0	ug/L							
2,6-Dinitrotoluene	<10.0 ug/L	10.0	ug/L							
2-Chloronaphthalene	<10.0 ug/L	10.0	ug/L							
2-Chlorophenol	<10.0 ug/L	10.0	ug/L							
2-Methylnaphthalene	<10.0 ug/L	10.0	ug/L							
2-Naphthylamine	<10.0 ug/L	10.0	ug/L							
2-Nitroaniline	<20.0 ug/L	20.0	ug/L							
2-Nitrophenol	<10.0 ug/L	10.0	ug/L							
3,3'-Dichlorobenzidine	<10.0 ug/L	10.0	ug/L							
3-Methylcholanthrene	<10.0 ug/L	10.0	ug/L							
3-Nitroaniline	<20.0 ug/L	20.0	ug/L							
4,6-Dinitro-2-methylphenol	<50.0 ug/L	50.0	ug/L							
4-Aminobiphenyl	<10.0 ug/L	10.0	ug/L							
4-Bromophenyl phenyl ether	<10.0 ug/L	10.0	ug/L							
4-Chloroaniline	<10.0 ug/L	10.0	ug/L							
4-Chlorophenyl phenyl ether	<10.0 ug/L	10.0	ug/L							

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Semivolatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0300 - SW3510C										
Blank (BAF0300-BLK1)				Prepared: 06/12/2017 Analyzed: 06/13/2017						
4-Nitroaniline	<20.0 ug/L	20.0	ug/L							
4-Nitrophenol	<50.0 ug/L	50.0	ug/L							
7,12-Dimethylbenz (a) anthracene	<10.0 ug/L	10.0	ug/L							
Acenaphthene	<10.0 ug/L	10.0	ug/L							
Acenaphthylene	<10.0 ug/L	10.0	ug/L							
Acetophenone	<20.0 ug/L	20.0	ug/L							
Aniline	<50.0 ug/L	50.0	ug/L							
Anthracene	<10.0 ug/L	10.0	ug/L							
Benzidine	<50.0 ug/L	50.0	ug/L							
Benzo (a) anthracene	<10.0 ug/L	10.0	ug/L							
Benzo (a) pyrene	<10.0 ug/L	10.0	ug/L							
Benzo (b) fluoranthene	<10.0 ug/L	10.0	ug/L							
Benzo (g,h,i) perylene	<10.0 ug/L	10.0	ug/L							
Benzo (k) fluoranthene	<10.0 ug/L	10.0	ug/L							
Benzoic acid	<50.0 ug/L	50.0	ug/L							
Benzyl alcohol	<20.0 ug/L	20.0	ug/L							
bis (2-Chloroethoxy) methane	<10.0 ug/L	10.0	ug/L							
bis (2-Chloroethyl) ether	<10.0 ug/L	10.0	ug/L							
2,2'-Oxybis (1-chloropropane)	<10.0 ug/L	10.0	ug/L							
bis (2-Ethylhexyl) phthalate	<10.0 ug/L	10.0	ug/L							
Butyl benzyl phthalate	<10.0 ug/L	10.0	ug/L							
Chrysene	<10.0 ug/L	10.0	ug/L							
Dibenz (a,h) anthracene	<10.0 ug/L	10.0	ug/L							
Dibenz (a,j) acridine	<10.0 ug/L	10.0	ug/L							
Dibenzofuran	<5.00 ug/L	5.00	ug/L							
Diethyl phthalate	<10.0 ug/L	10.0	ug/L							
Dimethyl phthalate	<10.0 ug/L	10.0	ug/L							
Di-n-butyl phthalate	<10.0 ug/L	10.0	ug/L							
Di-n-octyl phthalate	<10.0 ug/L	10.0	ug/L							
Diphenylamine	<10.0 ug/L	10.0	ug/L							
Ethyl methanesulfonate	<20.0 ug/L	20.0	ug/L							

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Semivolatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0300 - SW3510C										
Blank (BAF0300-BLK1)				Prepared: 06/12/2017 Analyzed: 06/13/2017						
Fluoranthene	<10.0 ug/L	10.0	ug/L							
Fluorene	<10.0 ug/L	10.0	ug/L							
Hexachlorobenzene	<1.00 ug/L	1.00	ug/L							
Hexachlorobutadiene	<10.0 ug/L	10.0	ug/L							
Hexachlorocyclopentadiene	<10.0 ug/L	10.0	ug/L							
Hexachloroethane	<10.0 ug/L	10.0	ug/L							
Indeno (1,2,3-cd) pyrene	<10.0 ug/L	10.0	ug/L							
Isophorone	<10.0 ug/L	10.0	ug/L							
m+p-Cresols	<10.0 ug/L	10.0	ug/L							
Methyl methanesulfonate	<10.0 ug/L	10.0	ug/L							
Naphthalene	<5.00 ug/L	5.00	ug/L							
Nitrobenzene	<10.0 ug/L	10.0	ug/L							
n-Nitrosodimethylamine	<10.0 ug/L	10.0	ug/L							
n-Nitrosodi-n-butylamine	<10.0 ug/L	10.0	ug/L							
n-Nitrosodi-n-propylamine	<10.0 ug/L	10.0	ug/L							
n-Nitrosodiphenylamine	<10.0 ug/L	10.0	ug/L							
n-Nitrosopiperidine	<10.0 ug/L	10.0	ug/L							
o+m+p-Cresols	<10.0 ug/L	10.0	ug/L							
o-Cresol	<10.0 ug/L	10.0	ug/L							
p-(Dimethylamino) azobenzene	<2.50 ug/L	2.50	ug/L							
p-Chloro-m-cresol	<10.0 ug/L	10.0	ug/L							
Pentachloronitrobenzene (quintozene)	<10.0 ug/L	10.0	ug/L							
Pentachlorophenol	<20.0 ug/L	20.0	ug/L							
Phenacetin	<10.0 ug/L	10.0	ug/L							
Phenanthrene	<10.0 ug/L	10.0	ug/L							
Phenol	<10.0 ug/L	10.0	ug/L							
Pronamide	<10.0 ug/L	10.0	ug/L							
Pyrene	<10.0 ug/L	10.0	ug/L							
Pyridine	<10.0 ug/L	10.0	ug/L							
Surr: 2,4,6-Tribromophenol	28.8		ug/L	100		28.8	20-86			
Surr: 2-Fluorobiphenyl	18.8		ug/L	50.0		37.5	23-87			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Semivolatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0300 - SW3510C										
Blank (BAF0300-BLK1)				Prepared: 06/12/2017 Analyzed: 06/13/2017						
Surr: 2-Fluorophenol	22.0		ug/L	100		22.0	10-52			
Surr: Nitrobenzene-d5	22.5		ug/L	50.0		44.9	10-98.5			
Surr: Phenol-d5	18.6		ug/L	100		18.6	5-33			
Surr: p-Terphenyl-d14	24.5		ug/L	50.0		49.0	27-133			
LCS (BAF0300-BS1)				Prepared: 06/12/2017 Analyzed: 06/13/2017						
1,2,4-Trichlorobenzene	54.9 ug/L	10.0	ug/L	100	ug/L	54.9	21.8-66.7			
1,2-Dichlorobenzene	54.5 ug/L	10.0	ug/L	100	ug/L	54.5	22-60			
1,3-Dichlorobenzene	51.5 ug/L	10.0	ug/L	100	ug/L	51.5	22-60			
1,4-Dichlorobenzene	51.8 ug/L	10.0	ug/L	100	ug/L	51.8	13-68			
1-Chloronaphthalene	62.9 ug/L	10.0	ug/L		ug/L		0-200			
2,4,5-Trichlorophenol	63.8 ug/L	10.0	ug/L		ug/L		50-110			
2,4,6-Trichlorophenol	65.2 ug/L	10.0	ug/L	100	ug/L	65.2	50-115			
2,4-Dichlorophenol	69.3 ug/L	10.0	ug/L	100	ug/L	69.3	50-105			
2,4-Dimethylphenol	57.9 ug/L	0.50	ug/L	100	ug/L	57.9	30-110			
2,4-Dinitrophenol	98.3 ug/L	50.0	ug/L	100	ug/L	98.3	15-140			
2,4-Dinitrotoluene	80.5 ug/L	10.0	ug/L	100	ug/L	80.5	21-99			
2,6-Dinitrotoluene	72.7 ug/L	10.0	ug/L	100	ug/L	72.7	15-140			
2-Chloronaphthalene	62.0 ug/L	10.0	ug/L	100	ug/L	62.0	45-105			
2-Chlorophenol	61.4 ug/L	10.0	ug/L	100	ug/L	61.4	15-74			
2-Nitrophenol	67.7 ug/L	10.0	ug/L	100	ug/L	67.7	40-115			
3,3'-Dichlorobenzidine	74.2 ug/L	10.0	ug/L	100	ug/L	74.2	20-110			
4,6-Dinitro-2-methylphenol	88.2 ug/L	50.0	ug/L	100	ug/L	88.2	40-130			
4-Bromophenyl phenyl ether	73.7 ug/L	10.0	ug/L	100	ug/L	73.7	15-110			
4-Chlorophenyl phenyl ether	69.8 ug/L	10.0	ug/L	100	ug/L	69.8	15-110			
4-Nitroaniline	<20.0 ug/L	20.0	ug/L		ug/L		0-200			
4-Nitrophenol	<50.0 ug/L	50.0	ug/L	100	ug/L	41.6	0-125			
Acenaphthene	68.0 ug/L	10.0	ug/L	100	ug/L	68.0	27.7-85.5			
Acenaphthylene	69.6 ug/L	10.0	ug/L	100	ug/L	69.6	50-105			
Acetophenone	53.9 ug/L	20.0	ug/L	100	ug/L	53.9	0-200			
alpha-Terpineol	72.0 ug/L	2.50	ug/L	100	ug/L	72.0	0-200			

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Semivolatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0300 - SW3510C										
LCS (BAF0300-BS1)				Prepared: 06/12/2017 Analyzed: 06/13/2017						
Anthracene	70.5 ug/L	10.0	ug/L	100	ug/L	70.5	55-110			
Benzidine	<50.0 ug/L	50.0	ug/L	100	ug/L		0-130			
Benzo (a) anthracene	72.6 ug/L	10.0	ug/L	100	ug/L	72.6	55-110			
Benzo (a) pyrene	75.5 ug/L	10.0	ug/L	100	ug/L	75.5	55-110			
Benzo (b) fluoranthene	74.9 ug/L	10.0	ug/L	100	ug/L	74.9	45-120			
Benzo (g,h,i) perylene	71.5 ug/L	10.0	ug/L	100	ug/L	71.5	40-125			
Benzo (k) fluoranthene	82.6 ug/L	10.0	ug/L	100	ug/L	82.6	45-125			
bis (2-Chloroethoxy) methane	64.1 ug/L	10.0	ug/L	100	ug/L	64.1	40-125			
bis (2-Chloroethyl) ether	64.2 ug/L	10.0	ug/L	100	ug/L	64.2	40-125			
2,2'-Oxybis (1-chloropropane)	66.4 ug/L	10.0	ug/L	100	ug/L	66.4	40-125			
bis (2-Ethylhexyl) phthalate	72.5 ug/L	10.0	ug/L	100	ug/L	72.5	40-125			
Butyl benzyl phthalate	78.1 ug/L	10.0	ug/L	100	ug/L	78.1	45-115			
Carbazole	72.7 ug/L	2.50	ug/L	100	ug/L	72.7	0-200			
Chrysene	76.3 ug/L	10.0	ug/L	100	ug/L	76.3	55-110			
Dibenz (a,h) anthracene	80.7 ug/L	10.0	ug/L	100	ug/L	80.7	40-125			
Diethyl phthalate	74.7 ug/L	10.0	ug/L	100	ug/L	74.7	40-120			
Dimethyl phthalate	69.6 ug/L	10.0	ug/L	100	ug/L	69.6	25-125			
Di-n-butyl phthalate	74.8 ug/L	10.0	ug/L	100	ug/L	74.8	55-115			
Fluoranthene	73.7 ug/L	10.0	ug/L	100	ug/L	73.7	55-115			
Fluorene	71.5 ug/L	10.0	ug/L	100	ug/L	71.5	50-110			
Hexachlorobenzene	73.2 ug/L	1.00	ug/L	100	ug/L	73.2	25-125			
Hexachlorobutadiene	64.8 ug/L	10.0	ug/L	100	ug/L	64.8	25-125			
Hexachlorocyclopentadiene	38.7 ug/L	10.0	ug/L	100	ug/L	38.7	25-125			
Hexachloroethane	55.9 ug/L	10.0	ug/L	100	ug/L	55.9	25-125			
Indeno (1,2,3-cd) pyrene	71.5 ug/L	10.0	ug/L	100	ug/L	71.5	45-125			
Isophorone	68.3 ug/L	10.0	ug/L	100	ug/L	68.3	10-110			
Naphthalene	57.7 ug/L	5.00	ug/L	100	ug/L	57.7	40-100			
Nitrobenzene	71.0 ug/L	10.0	ug/L	100	ug/L	71.0	40-100			
n-Nitrosodimethylamine	44.3 ug/L	10.0	ug/L	100	ug/L	44.3	25-110			
n-Nitrosodi-n-propylamine	68.0 ug/L	10.0	ug/L	100	ug/L	68.0	12-97			
n-Nitrosodiphenylamine	61.0 ug/L	10.0	ug/L	100	ug/L	61.0	12-97			

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Semivolatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0300 - SW3510C										
LCS (BAF0300-BS1)				Prepared: 06/12/2017 Analyzed: 06/13/2017						
p-Chloro-m-cresol	77.0 ug/L	10.0	ug/L	100	ug/L	77.0	10-91			
Pentachlorophenol	75.8 ug/L	20.0	ug/L	100	ug/L	75.8	30-109			
Phenanthrene	72.8 ug/L	10.0	ug/L	100	ug/L	72.8	50-115			
Phenol	32.0 ug/L	10.0	ug/L	101	ug/L	31.7	0-115			
Pyrene	71.7 ug/L	10.0	ug/L	100	ug/L	71.7	27-110			
Pyridine	39.5 ug/L	10.0	ug/L	100	ug/L	39.5	0-200			
Surr: 2,4,6-Tribromophenol	76.1		ug/L	100	ug/L	76.1	20-86			
Surr: 2-Fluorobiphenyl	32.3		ug/L	50.0	ug/L	64.6	23-87			
Surr: 2-Fluorophenol	45.4		ug/L	100	ug/L	45.4	10-52			
Surr: Nitrobenzene-d5	37.6		ug/L	50.0	ug/L	75.2	10-98.5			
Surr: Phenol-d5	31.0		ug/L	100	ug/L	31.0	5-33			
Surr: p-Terphenyl-d14	37.7		ug/L	50.0	ug/L	75.5	27-133			
Matrix Spike (BAF0300-MS1)	**Source: 17F0377-04**			Prepared & Analyzed: 06/12/2017						
1,2,4-Trichlorobenzene	66.8 ug/L	10.1	ug/L	101	<10.1 ug/L	66.1	21.8-66.7			
1,2-Dichlorobenzene	64.1 ug/L	10.1	ug/L	101	<10.1 ug/L	63.5	22-60			M
1,3-Dichlorobenzene	59.7 ug/L	10.1	ug/L	101	<10.1 ug/L	59.1	22-60			
1,4-Dichlorobenzene	60.5 ug/L	10.1	ug/L	101	<10.1 ug/L	59.9	22-60			
1-Chloronaphthalene	73.8 ug/L	10.1	ug/L		<10.1 ug/L		0-200			
2,4,6-Trichlorophenol	74.4 ug/L	10.1	ug/L	101	<10.1 ug/L	73.7	50-115			
2,4-Dichlorophenol	77.0 ug/L	10.1	ug/L	101	<10.1 ug/L	76.2	50-105			
2,4-Dimethylphenol	71.7 ug/L	0.51	ug/L	101	<0.51 ug/L	71.0	30-110			
2,4-Dinitrophenol	69.0 ug/L	50.5	ug/L	101	<50.5 ug/L	68.4	15-140			
2,4-Dinitrotoluene	87.1 ug/L	10.1	ug/L	101	<10.1 ug/L	86.2	17-111			
2,6-Dinitrotoluene	80.6 ug/L	10.1	ug/L	101	<10.1 ug/L	79.8	15-140			
2-Chloronaphthalene	73.1 ug/L	10.1	ug/L	101	<10.1 ug/L	72.3	45-105			
2-Chlorophenol	67.0 ug/L	10.1	ug/L	101	<10.1 ug/L	66.3	19-64			M
2-Nitrophenol	71.9 ug/L	10.1	ug/L	101	<10.1 ug/L	71.2	40-115			
3,3'-Dichlorobenzidine	82.5 ug/L	10.1	ug/L	101	<10.1 ug/L	81.6	20-110			
4,6-Dinitro-2-methylphenol	76.1 ug/L	50.5	ug/L	101	<50.5 ug/L	75.3	40-130			
4-Bromophenyl phenyl ether	82.3 ug/L	10.1	ug/L	101	<10.1 ug/L	81.5	15-110			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Semivolatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0300 - SW3510C										
Matrix Spike (BAF0300-MS1)		**Source: 17F0377-04**		Prepared & Analyzed: 06/12/2017						
4-Chlorophenyl phenyl ether	81.5 ug/L	10.1	ug/L	101	<10.1 ug/L	80.7	15-110			
4-Nitrophenol	<50.5 ug/L	50.5	ug/L	101	<50.5 ug/L	38.4	0-125			
Acenaphthene	78.5 ug/L	10.1	ug/L	101	<10.1 ug/L	77.7	24-90			
Acenaphthylene	79.6 ug/L	10.1	ug/L	101	<10.1 ug/L	78.8	50-105			
Acetophenone	60.2 ug/L	20.2	ug/L	101	<20.2 ug/L	59.6	0-200			
alpha-Terpineol	86.4 ug/L	2.53	ug/L	101	<2.53 ug/L	85.6	0-200			
Anthracene	81.4 ug/L	10.1	ug/L	101	<10.1 ug/L	80.6	55-110			
Benzidine	<50.5 ug/L	50.5	ug/L	101	<50.5 ug/L		0-130			
Benzo (a) anthracene	81.7 ug/L	10.1	ug/L	101	<10.1 ug/L	80.9	55-110			
Benzo (a) pyrene	82.7 ug/L	10.1	ug/L	101	<10.1 ug/L	81.9	55-110			
Benzo (b) fluoranthene	84.3 ug/L	10.1	ug/L	101	<10.1 ug/L	83.5	45-120			
Benzo (g,h,i) perylene	78.3 ug/L	10.1	ug/L	101	<10.1 ug/L	77.5	40-125			
Benzo (k) fluoranthene	89.2 ug/L	10.1	ug/L	101	<10.1 ug/L	88.3	45-125			
bis (2-Chloroethoxy) methane	74.6 ug/L	10.1	ug/L	101	<10.1 ug/L	73.9	40-125			
bis (2-Chloroethyl) ether	73.2 ug/L	10.1	ug/L	101	<10.1 ug/L	72.5	40-125			
2,2'-Oxybis (1-chloropropane)	76.0 ug/L	10.1	ug/L	101	<10.1 ug/L	75.2	40-125			
bis (2-Ethylhexyl) phthalate	87.6 ug/L	10.1	ug/L	101	<10.1 ug/L	85.4	40-125			
Butyl benzyl phthalate	92.5 ug/L	10.1	ug/L	101	<10.1 ug/L	91.6	45-115			
Carbazole	81.2 ug/L	2.53	ug/L	101	<2.53 ug/L	80.4	0-200			
Chrysene	86.6 ug/L	10.1	ug/L	101	<10.1 ug/L	85.7	55-110			
Dibenz (a,h) anthracene	85.8 ug/L	10.1	ug/L	101	<10.1 ug/L	85.0	40-125			
Diethyl phthalate	82.7 ug/L	10.1	ug/L	101	<10.1 ug/L	81.8	40-120			
Dimethyl phthalate	77.6 ug/L	10.1	ug/L	101	<10.1 ug/L	76.8	25-125			
Di-n-butyl phthalate	85.5 ug/L	10.1	ug/L	101	<10.1 ug/L	84.6	55-115			
Di-n-octyl phthalate	97.0 ug/L	10.1	ug/L	101	<10.1 ug/L	96.1	35-135			
Fluoranthene	82.5 ug/L	10.1	ug/L	101	<10.1 ug/L	81.7	55-115			
Fluorene	81.6 ug/L	10.1	ug/L	101	<10.1 ug/L	80.8	50-110			
Hexachlorobenzene	82.0 ug/L	1.01	ug/L	101	<1.01 ug/L	81.2	25-125			
Hexachlorobutadiene	79.8 ug/L	10.1	ug/L	101	<10.1 ug/L	79.0	25-125			
Hexachlorocyclopentadiene	52.0 ug/L	10.1	ug/L	101	<10.1 ug/L	51.5	25-125			
Hexachloroethane	65.3 ug/L	10.1	ug/L	101	<10.1 ug/L	64.7	25-125			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Semivolatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0300 - SW3510C										
Matrix Spike (BAF0300-MS1)	**Source: 17F0377-04**		Prepared & Analyzed: 06/12/2017							
Indeno (1,2,3-cd) pyrene	78.3 ug/L	10.1	ug/L	101	<10.1 ug/L	77.5	45-125			
Isophorone	77.6 ug/L	10.1	ug/L	101	<10.1 ug/L	76.8	10-110			
Naphthalene	69.8 ug/L	5.05	ug/L	101	<5.05 ug/L	69.1	40-100			
Nitrobenzene	78.5 ug/L	10.1	ug/L	101	<10.1 ug/L	77.7	40-100			
n-Nitrosodimethylamine	43.2 ug/L	10.1	ug/L	101	<10.1 ug/L	42.7	25-110			
n-Nitrosodi-n-propylamine	79.0 ug/L	10.1	ug/L	101	<10.1 ug/L	78.2	12-97			
n-Nitrosodiphenylamine	68.2 ug/L	10.1	ug/L	101	<10.1 ug/L	67.5	12-97			
p-Chloro-m-cresol	86.6 ug/L	10.1	ug/L	101	<10.1 ug/L	85.8	10-91			
Pentachlorophenol	80.9 ug/L	20.2	ug/L	101	<20.2 ug/L	80.1	27-109			
Phenanthrene	81.3 ug/L	10.1	ug/L	101	<10.1 ug/L	80.5	50-115			
Phenol	32.1 ug/L	10.1	ug/L	102	<10.1 ug/L	31.4	0-115			
Pyrene	83.3 ug/L	10.1	ug/L	101	<10.1 ug/L	82.4	23-110			
Pyridine	40.5 ug/L	10.1	ug/L	101	<10.1 ug/L	40.1	0-200			
Surr: 2,4,6-Tribromophenol	84.2		ug/L	101	ug/L	83.4	20-86			
Surr: 2-Fluorobiphenyl	37.3		ug/L	50.5	ug/L	73.9	23-87			
Surr: 2-Fluorophenol	44.4		ug/L	101	ug/L	43.9	10-52			
Surr: Nitrobenzene-d5	39.6		ug/L	50.5	ug/L	78.4	10-98.5			
Surr: Phenol-d5	29.9		ug/L	101	ug/L	29.6	5-33			
Surr: p-Terphenyl-d14	44.1		ug/L	50.5	ug/L	87.3	27-133			
Matrix Spike Dup (BAF0300-MSD1)	**Source: 17F0377-04**		Prepared & Analyzed: 06/12/2017							
1,2,4-Trichlorobenzene	50.9 ug/L	10.2	ug/L	102	<10.2 ug/L	49.9	21.8-66.7	27.0	20	P
1,2-Dichlorobenzene	45.7 ug/L	10.2	ug/L	102	<10.2 ug/L	44.8	22-60	33.5	20	P
1,3-Dichlorobenzene	41.8 ug/L	10.2	ug/L	102	<10.2 ug/L	40.9	22-60	35.4	20	P
1,4-Dichlorobenzene	42.5 ug/L	10.2	ug/L	102	<10.2 ug/L	41.6	22-60	35.1	20	P
1-Chloronaphthalene	59.2 ug/L	10.2	ug/L		<10.2 ug/L		0-200	22.0	20	P
2,4,6-Trichlorophenol	62.1 ug/L	10.2	ug/L	102	<10.2 ug/L	60.9	50-115	18.1	20	
2,4-Dichlorophenol	62.7 ug/L	10.2	ug/L	102	<10.2 ug/L	61.4	50-105	20.5	20	P
2,4-Dimethylphenol	57.0 ug/L	0.51	ug/L	102	<0.51 ug/L	55.8	30-110	22.9	20	P
2,4-Dinitrophenol	69.7 ug/L	51.0	ug/L	102	<51.0 ug/L	68.3	15-140	0.948	20	
2,4-Dinitrotoluene	80.1 ug/L	10.2	ug/L	102	<10.2 ug/L	78.5	17-111	8.41	20	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Semivolatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0300 - SW3510C										
Matrix Spike Dup (BAF0300-MSD1)	**Source: 17F0377-04**		Prepared & Analyzed: 06/12/2017							
2,6-Dinitrotoluene	69.3 ug/L	10.2	ug/L	102	<10.2 ug/L	67.9	15-140	15.1	20	
2-Chloronaphthalene	58.2 ug/L	10.2	ug/L	102	<10.2 ug/L	57.1	45-105	22.6	20	P
2-Chlorophenol	51.2 ug/L	10.2	ug/L	102	<10.2 ug/L	50.2	19-64	26.7	20	P
2-Nitrophenol	56.1 ug/L	10.2	ug/L	102	<10.2 ug/L	54.9	40-115	24.8	20	P
3,3'-Dichlorobenzidine	76.9 ug/L	10.2	ug/L	102	<10.2 ug/L	75.4	20-110	6.94	20	
4,6-Dinitro-2-methylphenol	75.0 ug/L	51.0	ug/L	102	<51.0 ug/L	73.5	40-130	1.45	20	
4-Bromophenyl phenyl ether	72.7 ug/L	10.2	ug/L	102	<10.2 ug/L	71.2	15-110	12.4	20	
4-Chlorophenyl phenyl ether	66.5 ug/L	10.2	ug/L	102	<10.2 ug/L	65.2	15-110	20.3	20	P
4-Nitrophenol	<51.0 ug/L	51.0	ug/L	102	<51.0 ug/L	36.3	0-125	4.45	20	
Acenaphthene	63.1 ug/L	10.2	ug/L	102	<10.2 ug/L	61.8	24-90	21.8	20	P
Acenaphthylene	65.2 ug/L	10.2	ug/L	102	<10.2 ug/L	63.9	50-105	19.8	20	
Acetophenone	48.0 ug/L	20.4	ug/L	102	<20.4 ug/L	47.1	0-200	22.4	20	P
alpha-Terpineol	68.3 ug/L	2.55	ug/L	102	<2.55 ug/L	67.0	0-200	23.4	20	P
Anthracene	72.6 ug/L	10.2	ug/L	102	<10.2 ug/L	71.1	55-110	11.5	20	
Benzidine	<51.0 ug/L	51.0	ug/L	102	<51.0 ug/L		0-130		20	
Benzo (a) anthracene	74.9 ug/L	10.2	ug/L	102	<10.2 ug/L	73.4	55-110	8.70	20	
Benzo (a) pyrene	75.3 ug/L	10.2	ug/L	102	<10.2 ug/L	73.8	55-110	9.37	20	
Benzo (b) fluoranthene	74.5 ug/L	10.2	ug/L	102	<10.2 ug/L	73.0	45-120	12.4	20	
Benzo (g,h,i) perylene	71.9 ug/L	10.2	ug/L	102	<10.2 ug/L	70.4	40-125	8.57	20	
Benzo (k) fluoranthene	82.1 ug/L	10.2	ug/L	102	<10.2 ug/L	80.5	45-125	8.23	20	
bis (2-Chloroethoxy) methane	55.6 ug/L	10.2	ug/L	102	<10.2 ug/L	54.5	40-125	29.2	20	P
bis (2-Chloroethyl) ether	52.6 ug/L	10.2	ug/L	102	<10.2 ug/L	51.6	40-125	32.7	20	P
2,2'-Oxybis (1-chloropropane)	56.2 ug/L	10.2	ug/L	102	<10.2 ug/L	55.1	40-125	30.0	20	P
bis (2-Ethylhexyl) phthalate	77.3 ug/L	10.2	ug/L	102	<10.2 ug/L	74.4	40-125	12.5	20	
Butyl benzyl phthalate	82.9 ug/L	10.2	ug/L	102	<10.2 ug/L	81.2	45-115	11.0	20	
Carbazole	76.2 ug/L	2.55	ug/L	102	<2.55 ug/L	74.7	0-200	6.39	20	
Chrysene	79.0 ug/L	10.2	ug/L	102	<10.2 ug/L	77.4	55-110	9.13	20	
Dibenz (a,h) anthracene	78.4 ug/L	10.2	ug/L	102	<10.2 ug/L	76.9	40-125	9.01	20	
Diethyl phthalate	72.5 ug/L	10.2	ug/L	102	<10.2 ug/L	71.0	40-120	13.1	20	
Dimethyl phthalate	65.6 ug/L	10.2	ug/L	102	<10.2 ug/L	64.3	25-125	16.8	20	
Di-n-butyl phthalate	78.2 ug/L	10.2	ug/L	102	<10.2 ug/L	76.6	55-115	8.93	20	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Semivolatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0300 - SW3510C										
Matrix Spike Dup (BAF0300-MSD1)	**Source: 17F0377-04**		Prepared & Analyzed: 06/12/2017							
Di-n-octyl phthalate	83.5 ug/L	10.2	ug/L	102	<10.2 ug/L	81.8	35-135	15.0	20	
Fluoranthene	76.4 ug/L	10.2	ug/L	102	<10.2 ug/L	74.9	55-115	7.63	20	
Fluorene	67.6 ug/L	10.2	ug/L	102	<10.2 ug/L	66.3	50-110	18.7	20	
Hexachlorobenzene	74.7 ug/L	1.02	ug/L	102	<1.02 ug/L	73.2	25-125	9.37	20	
Hexachlorobutadiene	60.5 ug/L	10.2	ug/L	102	<10.2 ug/L	59.3	25-125	27.5	20	P
Hexachlorocyclopentadiene	39.6 ug/L	10.2	ug/L	102	<10.2 ug/L	38.8	25-125	27.0	20	P
Hexachloroethane	45.6 ug/L	10.2	ug/L	102	<10.2 ug/L	44.6	25-125	35.7	20	P
Indeno (1,2,3-cd) pyrene	71.9 ug/L	10.2	ug/L	102	<10.2 ug/L	70.4	45-125	8.57	20	
Isophorone	60.8 ug/L	10.2	ug/L	102	<10.2 ug/L	59.5	10-110	24.4	20	P
Naphthalene	53.6 ug/L	5.10	ug/L	102	<5.10 ug/L	52.5	40-100	26.3	20	P
Nitrobenzene	59.4 ug/L	10.2	ug/L	102	<10.2 ug/L	58.2	40-100	27.7	20	P
n-Nitrosodimethylamine	30.7 ug/L	10.2	ug/L	102	<10.2 ug/L	30.0	25-110	33.9	20	P
n-Nitrosodi-n-propylamine	60.9 ug/L	10.2	ug/L	102	<10.2 ug/L	59.7	12-97	25.8	20	P
n-Nitrosodiphenylamine	60.4 ug/L	10.2	ug/L	102	<10.2 ug/L	59.1	12-97	12.3	20	
p-Chloro-m-cresol	72.3 ug/L	10.2	ug/L	102	<10.2 ug/L	70.9	10-91	18.0	20	
Pentachlorophenol	77.8 ug/L	20.4	ug/L	102	<20.4 ug/L	76.2	27-109	3.95	20	
Phenanthrene	74.5 ug/L	10.2	ug/L	102	<10.2 ug/L	73.0	50-115	8.71	20	
Phenol	24.8 ug/L	10.2	ug/L	103	<10.2 ug/L	24.1	0-115	25.5	20	P
Pyrene	76.7 ug/L	10.2	ug/L	102	<10.2 ug/L	75.2	23-110	8.15	20	
Pyridine	28.5 ug/L	10.2	ug/L	102	<10.2 ug/L	27.9	0-200	34.9	20	P
Surr: 2,4,6-Tribromophenol	73.7		ug/L	102	ug/L	72.2	20-86			
Surr: 2-Fluorobiphenyl	28.1		ug/L	51.0	ug/L	55.0	23-87			
Surr: 2-Fluorophenol	31.3		ug/L	102	ug/L	30.7	10-52			
Surr: Nitrobenzene-d5	28.9		ug/L	51.0	ug/L	56.6	10-98.5			
Surr: Phenol-d5	23.0		ug/L	102	ug/L	22.5	5-33			
Surr: p-Terphenyl-d14	37.9		ug/L	51.0	ug/L	74.2	27-133			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Micro-extractables by GC/ECD - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAF0342 - SW8011										
Blank (BAF0342-BLK1)				Prepared & Analyzed: 06/12/2017						
1,2-Dibromoethane (EDB)	<0.010 ug/L	0.010	ug/L							
1,2,3-Trichloropropane	<0.010 ug/L	0.010	ug/L							
1,2-Dibromo-3-chloropropane (DBCP)	<0.010 ug/L	0.010	ug/L							
LCS (BAF0342-BS1)				Prepared & Analyzed: 06/12/2017						
1,2-Dibromoethane (EDB)	0.267 ug/L	0.010	ug/L	0.250 ug/L		107	65-135			
1,2,3-Trichloropropane	0.288 ug/L	0.010	ug/L	0.250 ug/L		115	65-135			
1,2-Dibromo-3-chloropropane (DBCP)	0.318 ug/L	0.010	ug/L	0.250 ug/L		127	65-135			
LCS Dup (BAF0342-BSD1)				Prepared & Analyzed: 06/12/2017						
1,2-Dibromoethane (EDB)	0.294 ug/L	0.010	ug/L	0.250 ug/L		118	65-135	9.75	20	
1,2,3-Trichloropropane	0.318 ug/L	0.010	ug/L	0.250 ug/L		127	65-135	9.70	20	
1,2-Dibromo-3-chloropropane (DBCP)	0.318 ug/L	0.010	ug/L	0.250 ug/L		127	65-135	0.0838	20	
Duplicate (BAF0342-DUP1)		**Source: 17F0377-02**		Prepared & Analyzed: 06/12/2017						
1,2-Dibromoethane (EDB)	<0.010 ug/L	0.010	ug/L		<0.010 ug/L			NA	20	
1,2,3-Trichloropropane	<0.010 ug/L	0.010	ug/L		<0.010 ug/L			NA	20	
1,2-Dibromo-3-chloropropane (DBCP)	<0.010 ug/L	0.010	ug/L		<0.010 ug/L			NA	20	
Matrix Spike (BAF0342-MS1)		**Source: 17F0377-03**		Prepared & Analyzed: 06/12/2017						
1,2-Dibromoethane (EDB)	0.261 ug/L	0.010	ug/L	0.246	<0.010 ug/L	106	65-135			
1,2,3-Trichloropropane	0.278 ug/L	0.010	ug/L	0.246	<0.010 ug/L	113	65-135			
1,2-Dibromo-3-chloropropane (DBCP)	0.307 ug/L	0.010	ug/L	0.246	<0.010 ug/L	125	65-135			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
SW8011 in Non-Potable Water	
1,2-Dibromoethane (EDB)	VELAP,NC
1,2,3-Trichloropropane	VELAP,NC
1,2-Dibromo-3-chloropropane (DBCP)	VELAP,NC
SW8260B in Non-Potable Water	
1,1,1,2-Tetrachloroethane	NC,VELAP,WVDEP
1,1,1-Trichloroethane	NC,VELAP,WVDEP
1,1,2,2-Tetrachloroethane	NC,VELAP,WVDEP
1,1,2-Trichloroethane	NC,VELAP,WVDEP
1,1-Dichloroethane	NC,VELAP,WVDEP
1,1-Dichloroethylene	NC,VELAP,WVDEP
1,1-Dichloropropene	NC,VELAP,WVDEP
1,2,3-Trichlorobenzene	NC,VELAP,WVDEP
1,2,3-Trichloropropane	NC,VELAP,WVDEP
1,2,4-Trichlorobenzene	NC,VELAP,WVDEP
1,2,4-Trimethylbenzene	NC,VELAP,WVDEP
1,2-Dibromo-3-chloropropane (DBCP)	NC,VELAP,WVDEP
1,2-Dibromoethane (EDB)	NC,VELAP,WVDEP
1,2-Dichlorobenzene	NC,VELAP,WVDEP
1,2-Dichloroethane	NC,VELAP,WVDEP
1,2-Dichloropropane	NC,VELAP,WVDEP
1,3,5-Trimethylbenzene	NC,WVDEP
1,3-Dichlorobenzene	NC,VELAP,WVDEP
1,3-Dichloropropane	NC,VELAP,WVDEP
1,4-Dichlorobenzene	NC,VELAP,WVDEP
2,2-Dichloropropane	NC,VELAP,WVDEP
2-Butanone (MEK)	NC,VELAP,WVDEP
2-Chlorotoluene	NC,VELAP,WVDEP
2-Hexanone (MBK)	NC,VELAP,WVDEP
4-Chlorotoluene	NC,VELAP,WVDEP
4-Isopropyltoluene	NC,VELAP,WVDEP
4-Methyl-2-pentanone (MIBK)	NC,VELAP,WVDEP
Acetone	NC,VELAP,WVDEP
Benzene	NC,VELAP,WVDEP
Bromobenzene	NC,VELAP,WVDEP
Bromochloromethane	NC,VELAP,WVDEP
Bromodichloromethane	NC,VELAP,WVDEP

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
Bromoform	NC,VELAP,WVDEP
Bromomethane	NC,VELAP,WVDEP
Carbon disulfide	NC,VELAP,WVDEP
Carbon tetrachloride	NC,VELAP,WVDEP
Chlorobenzene	NC,VELAP,WVDEP
Chloroethane	NC,VELAP,WVDEP
Chloroform	NC,VELAP,WVDEP
Chloromethane	NC,VELAP,WVDEP
cis-1,2-Dichloroethylene	NC,VELAP,WVDEP
cis-1,3-Dichloropropene	NC,VELAP,WVDEP
Dibromochloromethane	NC,VELAP,WVDEP
Dibromomethane	NC,VELAP,WVDEP
Dichlorodifluoromethane	NC,VELAP,WVDEP
Di-isopropyl ether (DIPE)	NC,VELAP,WVDEP
Ethylbenzene	NC,VELAP,WVDEP
Hexachlorobutadiene	NC,VELAP,WVDEP
Iodomethane	NC,VELAP,WVDEP
Isopropylbenzene	NC,VELAP,WVDEP
m+p-Xylenes	NC,VELAP,WVDEP
Methylene chloride	NC,VELAP,WVDEP
Methyl-t-butyl ether (MTBE)	NC,VELAP,WVDEP
Naphthalene	NC,VELAP,WVDEP
n-Butylbenzene	NC,VELAP,WVDEP
n-Propylbenzene	NC,VELAP,WVDEP
o-Xylene	NC,VELAP,WVDEP
sec-Butylbenzene	NC,VELAP,WVDEP
Styrene	NC,VELAP,WVDEP
tert-Butylbenzene	NC,VELAP,WVDEP
Tetrachloroethylene (PCE)	NC,VELAP,WVDEP
Toluene	NC,VELAP,WVDEP
trans-1,2-Dichloroethylene	NC,VELAP,WVDEP
trans-1,3-Dichloropropene	NC,VELAP,WVDEP
Trichloroethylene	NC,VELAP,WVDEP
Trichlorofluoromethane	NC,VELAP,WVDEP
Vinyl acetate	NC,VELAP,WVDEP
Vinyl chloride	NC,VELAP,WVDEP
Xylenes, Total	NC,VELAP,WVDEP

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
SW8270D in Non-Potable Water	
1,2,4,5-Tetrachlorobenzene	VELAP,WVDEP,NC
1,2,4-Trichlorobenzene	VELAP,WVDEP,NC
1,2-Dichlorobenzene	VELAP,WVDEP,NC
1,2-Diphenylhydrazine	VELAP,WVDEP,NC
1,3-Dichlorobenzene	VELAP,WVDEP,NC
1,3-Dinitrobenzene	VELAP,WVDEP,NC
1,4-Dichlorobenzene	VELAP,WVDEP,NC
1-Naphthylamine	VELAP,WVDEP,NC
2,3,4,6-Tetrachlorophenol	VELAP,WVDEP,NC
2,4,5-Trichlorophenol	VELAP,WVDEP,NC
2,4,6-Trichlorophenol	VELAP,WVDEP,NC
2,4-Dichlorophenol	VELAP,WVDEP,NC
2,4-Dimethylphenol	VELAP,WVDEP,NC
2,4-Dinitrophenol	VELAP,WVDEP,NC
2,4-Dinitrotoluene	VELAP,WVDEP,NC
2,6-Dichlorophenol	VELAP,WVDEP,NC
2,6-Dinitrotoluene	VELAP,WVDEP,NC
2-Chloronaphthalene	VELAP,WVDEP,NC
2-Chlorophenol	VELAP,WVDEP,NC
2-Methylnaphthalene	VELAP,WVDEP,NC
2-Naphthylamine	VELAP,WVDEP,NC
2-Nitroaniline	VELAP,WVDEP,NC
2-Nitrophenol	VELAP,WVDEP,NC
3,3'-Dichlorobenzidine	VELAP,WVDEP,NC
3-Methylcholanthrene	VELAP,WVDEP,NC
3-Nitroaniline	VELAP,WVDEP,NC
4,6-Dinitro-2-methylphenol	VELAP,WVDEP,NC
4-Aminobiphenyl	VELAP,WVDEP,NC
4-Bromophenyl phenyl ether	VELAP,WVDEP,NC
4-Chloroaniline	VELAP,WVDEP,NC
4-Chlorophenyl phenyl ether	VELAP,WVDEP,NC
4-Nitroaniline	VELAP,WVDEP,NC
4-Nitrophenol	VELAP,WVDEP,NC
7,12-Dimethylbenz (a) anthracene	VELAP,WVDEP,NC
Acenaphthene	VELAP,WVDEP,NC
Acenaphthylene	VELAP,WVDEP,NC

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
Acetophenone	VELAP,WVDEP,NC
Aniline	VELAP,WVDEP,NC
Anthracene	VELAP,WVDEP,NC
Benzidine	VELAP,WVDEP,NC
Benzo (a) anthracene	VELAP,WVDEP,NC
Benzo (a) pyrene	VELAP,WVDEP,NC
Benzo (b) fluoranthene	VELAP,WVDEP,NC
Benzo (g,h,i) perylene	VELAP,WVDEP,NC
Benzo (k) fluoranthene	VELAP,WVDEP,NC
Benzoic acid	VELAP,WVDEP,NC
Benzyl alcohol	VELAP,WVDEP,NC
bis (2-Chloroethoxy) methane	VELAP,WVDEP,NC
bis (2-Chloroethyl) ether	VELAP,WVDEP,NC
2,2'-Oxybis (1-chloropropane)	VELAP,WVDEP,NC
bis (2-Ethylhexyl) phthalate	VELAP,WVDEP,NC
Butyl benzyl phthalate	VELAP,WVDEP,NC
Chrysene	VELAP,WVDEP,NC
Dibenz (a,h) anthracene	VELAP,WVDEP,NC
Dibenz (a,j) acridine	VELAP,WVDEP,NC
Dibenzofuran	VELAP,WVDEP,NC
Diethyl phthalate	VELAP,WVDEP,NC
Dimethyl phthalate	VELAP,WVDEP,NC
Di-n-butyl phthalate	VELAP,WVDEP,NC
Di-n-octyl phthalate	VELAP,WVDEP,NC
Diphenylamine	VELAP,WVDEP,NC
Ethyl methanesulfonate	VELAP,WVDEP,NC
Fluoranthene	VELAP,WVDEP,NC
Fluorene	VELAP,WVDEP,NC
Hexachlorobenzene	VELAP,WVDEP,NC
Hexachlorobutadiene	VELAP,WVDEP,NC
Hexachlorocyclopentadiene	VELAP,WVDEP,NC
Hexachloroethane	VELAP,WVDEP,NC
Indeno (1,2,3-cd) pyrene	VELAP,WVDEP,NC
Isophorone	VELAP,WVDEP,NC
m+p-Cresols	VELAP,WVDEP,NC
Methyl methanesulfonate	VELAP,WVDEP,NC
Naphthalene	VELAP,WVDEP,NC
Nitrobenzene	VELAP,WVDEP,NC

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
n-Nitrosodimethylamine	VELAP,WVDEP,NC
n-Nitrosodi-n-butylamine	VELAP,WVDEP,NC
n-Nitrosodi-n-propylamine	VELAP,WVDEP,NC
n-Nitrosodiphenylamine	VELAP,WVDEP,NC
n-Nitrosopiperidine	VELAP,WVDEP,NC
o+m+p-Cresols	WVDEP,NC
o-Cresol	VELAP,WVDEP,NC
p-(Dimethylamino) azobenzene	VELAP,WVDEP,NC
p-Chloro-m-cresol	VELAP,WVDEP,NC
Pentachloronitrobenzene (quintozene)	VELAP,WVDEP,NC
Pentachlorophenol	VELAP,WVDEP,NC
Phenacetin	VELAP,WVDEP,NC
Phenanthrene	VELAP,WVDEP,NC
Phenol	VELAP,WVDEP,NC
Pronamide	VELAP,WVDEP,NC
Pyrene	VELAP,WVDEP,NC
Pyridine	VELAP,WVDEP,NC

Code	Description	Lab Number	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2017
NC	North Carolina DENR	495	12/31/2017
PADEP	NELAC-Pennsylvania	001	10/31/2017
VELAP	NELAC-Virginia Certificate #9067	460021	06/15/2018
WVDEP	West Virginia DEP	350	11/30/2017

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	6/14/2017 13:11
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Summary of Data Qualifiers

M	Matrix spike recovery is outside established acceptance limits
P	Duplicate analysis does not meet the acceptance criteria for precision
RPD	Relative Percent Difference
Qual	Qualifers
-RE	Denotes sample was re-analyzed
D.F.	Dilution Factor. Please also see the Preparation Factor in the Analysis Summary section.
TIC	Tentatively Identified Compounds are compounds that are identified by comparing the analyte mass spectral pattern with the NIST spectral library . A TIC spectral match is reported when the pattern is at least 75% consistent with the published pattern. Compound concentrations are estimated and are calculated using an internal standard response factor of 1.
PCBs, Total	Total PCBs are defined as the sum of detected Aroclors 1016, 1221, 1232, 1248, 1254, 1260, 1262, and 1268.

APEX

Apex Companies, LLC
203 Wylderose Court
Midlothian, VA 23113
(804) 897-2718

CHAIN OF CUSTODY RECORD

JOB NO.: 757004-001
JOB NAME: OLD OAKS NEIGHBORHOOD
PROJECT MANAGER: MARK RYLAND
SAMPLER(S): (Signature(s)) [signature]
(Printed): MICHAEL MAY
TURN – AROUND TIME: 24 HR

PARAMETERS: VOCs 8260 | SVOCs 8270 | FCB 8011

SAMPLE ID	DATE	TIME	COMP.	GRAB	MATRIX	PRES.	STATION / LOCATION	NO. OF CONTAINERS	VOCs 8260	SVOCs 8270	FCB 8011	REMARKS
6917001-1	5/23/17	930		X	W	4°C	TRIP BLANK	2	X			
6917001-2	10/24/16	900		X	W	4°C	TRIP BLANK	2		X		
6917001-3	6/9/17	512		X	W	4°C	1231 CARDWELL - FB	6	X	X	X	
6917001-4	6/9/17	1523		X	W	4°C	1231 CARDWELL	8	X	X	X	MS/MSD
							TOTALS	18	3	2	3	

no seal on ice 5.5°C

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
① [signature] (Printed) MICHAEL MAY	6/9/17 1618	② Sally Thach (Printed) Sally Thach	③ (Printed) 6/9/17 16:18		④ (Printed)
Relinquished by: (Signature) ⑤ (Printed)	Date/Time	Received by: (Signature) ⑥ (Printed)	Remarks DEQ STATE LEAD		

APEX-Richmond 17F0377
Old Oaks Neighborhood
Recd: 06/09/2017 Due: 06/13/2017

v130325002

Distribution: WHITE => original (accompanies samples; returned with results) : YELLOW => laboratory copy : PINK => sampler's copy

1 of 1 pages

1941 Reymet Road ● Richmond, Virginia 23237 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 17I0181

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian, VA 23113	Date Received:	September 7, 2017 15:40
		Date Issued:	September 14, 2017 16:30
		Project Number:	757004-001
Submitted To:	Mark Ryland	Purchase Order:	
Client Site I.D.:	Old Oaks Neighborhood		

Enclosed are the results of analyses for samples received by the laboratory on 09/07/2017 15:40. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

Ted Soyars

Ted Soyars
Laboratory Manager

End Notes:

The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

This report shall not be reproduced except in full without the expressed and written approval of an authorized representative of Air Water & Soil Laboratories, Inc.

Accredited in accordance with nelac
Commonwealth of Virginia, DCLS
Accreditation # 460021

NWBOC EDWOSB Certified

Certified SWaM Small, Women and Minority-Owned
Supplier Diversity Strengthens the Commonwealth
by the Virginia Department of Minority Business Enterprise

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	9/14/2017 16:30
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

ANALYTICAL REPORT FOR SAMPLES

Laboratory Order ID 17I0181

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
9717001-1 MW-14 Vapor Effluent	17I0181-01	Air	09/07/2017 10:30	09/07/2017 15:40
9717001-2 MW-12 Vapor Effluent	17I0181-02	Air	09/07/2017 12:00	09/07/2017 15:40
9717001-3 MW-3 Vapor Effluent	17I0181-03	Air	09/07/2017 14:00	09/07/2017 15:40

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	9/14/2017 16:30
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0181

Analytical Results

Sample I.D. 9717001-1 MW-14 Vapor Effluent **Laboratory Sample ID:** 17I0181-01

Grab Date/Time: 09/07/2017 10:30

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GC									
Benzene	01	EPA18	**3.21 mg/M³**		1.00	1	09/07/17 20:23	09/07/17 20:23	LAO
Ethylbenzene	01	EPA18	**3.38 mg/M³**		1.00	1	09/07/17 20:23	09/07/17 20:23	LAO
m+p-Xylenes	01	EPA18	**11.8 mg/M³**		4.00	1	09/07/17 20:23	09/07/17 20:23	LAO
o-Xylene	01	EPA18	**5.22 mg/M³**		2.00	1	09/07/17 20:23	09/07/17 20:23	LAO
Toluene	01	EPA18	**11.1 mg/M³**		1.00	1	09/07/17 20:23	09/07/17 20:23	LAO
TPH-Volatiles (GRO)	01	EPA18	**497 mg/M³**		100	1	09/07/17 20:23	09/07/17 20:23	LAO
Xylenes, Total	01	EPA18	**17.0 mg/M³**		6.00	1	09/07/17 20:23	09/07/17 20:23	LAO
Surr: 2,5-Dibromotoluene	*01*	*EPA18*	*103 %*		*80-120*		*09/07/17 20:23*	*09/07/17 20:23*	*LAO*
Surr: 2,5-Dibromotoluene (FID)	*01*	*EPA18*	*99.5 %*		*80-120*		*09/07/17 20:23*	*09/07/17 20:23*	*LAO*

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	9/14/2017 16:30
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0181

Analytical Results

Sample I.D. 9717001-2 MW-12 Vapor Effluent **Laboratory Sample ID:** 17I0181-02

Grab Date/Time: 09/07/2017 12:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GC									
Benzene	02	EPA18	**8.38 mg/M³**		1.00	1	09/07/17 21:31	09/07/17 21:31	LAO
Ethylbenzene	02	EPA18	**3.74 mg/M³**		1.00	1	09/07/17 21:31	09/07/17 21:31	LAO
m+p-Xylenes	02	EPA18	**13.2 mg/M³**		4.00	1	09/07/17 21:31	09/07/17 21:31	LAO
o-Xylene	02	EPA18	**5.09 mg/M³**		2.00	1	09/07/17 21:31	09/07/17 21:31	LAO
Toluene	02	EPA18	**17.6 mg/M³**		1.00	1	09/07/17 21:31	09/07/17 21:31	LAO
TPH-Volatiles (GRO)	02	EPA18	**1240 mg/M³**		100	1	09/07/17 21:31	09/07/17 21:31	LAO
Xylenes, Total	02	EPA18	**18.3 mg/M³**		6.00	1	09/07/17 21:31	09/07/17 21:31	LAO
Surr: 2,5-Dibromotoluene	*02*	*EPA18*	*98.8 %*		*80-120*		*09/07/17 21:31*	*09/07/17 21:31*	*LAO*
Surr: 2,5-Dibromotoluene (FID)	*02*	*EPA18*	*94.6 %*		*80-120*		*09/07/17 21:31*	*09/07/17 21:31*	*LAO*

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	9/14/2017 16:30
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0181

Analytical Results

Sample I.D. 9717001-3 MW-3 Vapor Effluent **Laboratory Sample ID:** 17I0181-03

Grab Date/Time: 09/07/2017 14:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GC									
Benzene	03	EPA18	**1.71 mg/M³**		1.00	1	09/07/17 22:17	09/07/17 22:17	LAO
Ethylbenzene	03	EPA18	**1.13 mg/M³**		1.00	1	09/07/17 22:17	09/07/17 22:17	LAO
m+p-Xylenes	03	EPA18	**4.21 mg/M³**		4.00	1	09/07/17 22:17	09/07/17 22:17	LAO
o-Xylene	03	EPA18	<2.00 mg/M³		2.00	1	09/07/17 22:17	09/07/17 22:17	LAO
Toluene	03	EPA18	**5.08 mg/M³**		1.00	1	09/07/17 22:17	09/07/17 22:17	LAO
TPH-Volatiles (GRO)	03	EPA18	**146 mg/M³**		100	1	09/07/17 22:17	09/07/17 22:17	LAO
Xylenes, Total	03	EPA18	<6.00 mg/M³		6.00	1	09/07/17 22:17	09/07/17 22:17	LAO
Surr: 2,5-Dibromotoluene	*03*	*EPA18*	*100 %*		*80-120*		*09/07/17 22:17*	*09/07/17 22:17*	*LAO*
Surr: 2,5-Dibromotoluene (FID)	*03*	*EPA18*	*96.9 %*		*80-120*		*09/07/17 22:17*	*09/07/17 22:17*	*LAO*

Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Organic Compounds by GC		**Preparation Method:**	**SW5030B**		
17I0181-01	5.00 mL / 5.00 mL	EPA18	BAI0142	SAI0133	AF70032
17I0181-02	5.00 mL / 5.00 mL	EPA18	BAI0142	SAI0133	AF70032
17I0181-03	5.00 mL / 5.00 mL	EPA18	BAI0142	SAI0133	AF70032

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	9/14/2017 16:30
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GC - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0142 - SW5030B										
Blank (BAI0142-BLK1)				Prepared & Analyzed: 09/07/2017						
Benzene	<1.00 mg/M³	1.00	mg/M³							
Ethylbenzene	<1.00 mg/M³	1.00	mg/M³							
m+p-Xylenes	<4.00 mg/M³	4.00	mg/M³							
o-Xylene	<2.00 mg/M³	2.00	mg/M³							
Toluene	<1.00 mg/M³	1.00	mg/M³							
TPH-Volatiles (GRO)	<100 mg/M³	100	mg/M³							
Xylenes, Total	<6.00 mg/M³	6.00	mg/M³							
Surr: 2,5-Dibromotoluene	91.8		ug/L	100		91.8	80-120			
Surr: 2,5-Dibromotoluene (FID)	88.4		ug/L	100		88.4	80-120			
LCS (BAI0142-BS1)				Prepared & Analyzed: 09/07/2017						
Benzene	105 mg/M³	1.00	mg/M³	100	mg/M³	105	70-130			
Ethylbenzene	110 mg/M³	1.00	mg/M³	100	mg/M³	110	70-130			
m+p-Xylenes	230 mg/M³	4.00	mg/M³	200	mg/M³	115	70-130			
o-Xylene	121 mg/M³	2.00	mg/M³	100	mg/M³	121	70-130			
Toluene	108 mg/M³	1.00	mg/M³	100	mg/M³	108	70-130			
TPH-Volatiles (GRO)	936 mg/M³	100	mg/M³	1000	mg/M³	93.6	70-130			
Xylenes, Total	351 mg/M³	6.00	mg/M³		mg/M³		70-130			
Surr: 2,5-Dibromotoluene	96.8		ug/L	100	ug/L	96.8	80-120			
Surr: 2,5-Dibromotoluene (FID)	89.5		ug/L	100	ug/L	89.5	80-120			
Duplicate (BAI0142-DUP1)		**Source: 17I0181-01**		Prepared & Analyzed: 09/07/2017						
Benzene	3.14 mg/M³	1.00	mg/M³		3.21 mg/M³			2.20	20	
Ethylbenzene	3.36 mg/M³	1.00	mg/M³		3.38 mg/M³			0.593	20	
m+p-Xylenes	11.8 mg/M³	4.00	mg/M³		11.8 mg/M³			0.423	20	
o-Xylene	5.30 mg/M³	2.00	mg/M³		5.22 mg/M³			1.52	20	
Toluene	11.0 mg/M³	1.00	mg/M³		11.1 mg/M³			1.54	20	
TPH-Volatiles (GRO)	491 mg/M³	100	mg/M³		497 mg/M³			1.35	20	
Xylenes, Total	17.2 mg/M³	6.00	mg/M³		17.0 mg/M³			0.761	20	
Surr: 2,5-Dibromotoluene	99.8		ug/L	100	ug/L	99.8	80-120			
Surr: 2,5-Dibromotoluene (FID)	96.3		ug/L	100	ug/L	96.3	80-120			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	9/14/2017 16:30
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GC - Quality Control

Air Water and Soil Laboratories, Inc.

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

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	9/14/2017 16:30
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Certified Analyses included in this Report

Analyte **Certifications**

Code	Description	Lab Number	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2017
NC	North Carolina DENR	495	12/31/2017
PADEP	NELAC-Pennsylvania	001	10/31/2017
VELAP	NELAC-Virginia Certificate #9316	460021	06/14/2018
WVDEP	West Virginia DEP	350	11/30/2017

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	9/14/2017 16:30
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Summary of Data Qualifiers

RPD	Relative Percent Difference
Qual	Qualifers
-RE	Denotes sample was re-analyzed
D.F.	Dilution Factor. Please also see the Preparation Factor in the Analysis Summary section.
TIC	Tentatively Identified Compounds are compounds that are identified by comparing the analyte mass spectral pattern with the NIST spectral library . A TIC spectral match is reported when the pattern is at least 75% consistent with the published pattern. Compound concentrations are estimated and are calculated using an internal standard response factor of 1.
PCBs, Total	Total PCBs are defined as the sum of detected Aroclors 1016, 1221, 1232, 1248, 1254, 1260, 1262, and 1268.

APEX

Apex Companies, LLC
203 Wylderose Court
Midlothian, VA 23113
(804) 897-2718

CHAIN OF CUSTODY RECORD

JOB NO.	JOB NAME	PROJECT MANAGER
757004-001	Old Oaks Neighborhood	Mark Ryland

SAMPLER(S): (Signature(s)) [signature]

(Printed) Sam Tolton

TURN – AROUND TIME: STD.

PARAMETERS: NO. OF CONTAINERS; 10-100

SAMPLE ID	DATE	TIME	COMP.	GRAB	MATRIX	PRES.	STATION / LOCATION	NO. OF CONTAINERS	10-100	REMARKS
9717001-1	9.7.17	10:30		X	A	-	MW-14 Vapor Effluent	1	X	
9717001-2	9.7.17	12:00		X	A	-	MW-12 Vapor Effluent	1	X	
9717001-3	9.7.17	14:00		X	A	-	MW-3 Vapor Effluent	1	X	
										No Seal
										No Ice
										22.0°C
							TOTALS			

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
① [signature]		② [signature]	③		④
(Printed) Sam Tolton	9.7.17 15:40	(Printed) Brian Richard 9/7/17 1540	(Printed)		(Printed)
Relinquished by: (Signature) ⑤	Date/Time	Received by: (Signature) ⑥	Remarks: DEQ State lead		
(Printed)		(Printed)			

APEX-Richmond **17I0181**
Old Oaks Neighborhood
Recd: 09/07/2017 Due: 09/14/2017

v130325002

Distribution: WHITE => original (accompanies samples; returned with results) : YELLOW => laboratory copy : PINK => sampler's copy

1 of 1 pages

1941 Reymet Road ● Richmond, Virginia 23237 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 17I0765

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian, VA 23113	Date Received:	September 26, 2017 13:46
		Date Issued:	October 24, 2017 12:37
		Project Number:	757004-001
Submitted To:	Mark Ryland	Purchase Order:	
Client Site I.D.:	Old Oaks Neighborhood		

Enclosed are the results of analyses for samples received by the laboratory on 09/26/2017 13:46. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

Ted Soyars

Laboratory Manager

End Notes:

The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

This report shall not be reproduced except in full without the expressed and written approval of an authorized representative of Air Water & Soil Laboratories, Inc.

Accredited in accordance with nelac
Commonwealth of Virginia, DCLS
Accreditation # 460021

NWBOC EDWOSB Certified

Certified SWaM Small, Women and Minority-Owned
Supplier Diversity Strengthens the Commonwealth
by the Virginia Department of Minority Business Enterprise

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

ANALYTICAL REPORT FOR SAMPLES

Laboratory Order ID 17I0765

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
92517001-1 Trip Blank	17I0765-01	Ground Water	08/09/2017 13:00	09/26/2017 13:46
92517001-2 Trip Blank	17I0765-02	Ground Water	06/29/2017 13:40	09/26/2017 13:46
92517001-3 FB 1327 Cardwell	17I0765-03	Ground Water	09/25/2017 11:10	09/26/2017 13:46
92517001-4 FB 1241 Cardwell	17I0765-04	Ground Water	09/25/2017 11:40	09/26/2017 13:46
92517001-5 FB 1518 Old Oaks	17I0765-05	Ground Water	09/25/2017 12:20	09/26/2017 13:46
92517001-6 1327 Cardwell	17I0765-06	Ground Water	09/25/2017 11:05	09/26/2017 13:46
92517001-7 1241 Cardwell	17I0765-07	Ground Water	09/25/2017 11:35	09/26/2017 13:46
92517001-8 1518 Old Oaks	17I0765-08	Ground Water	09/25/2017 12:15	09/26/2017 13:46

This Certificate of Analysis is being reissued on October 24, 2017 to include TBA and TAA data per the client's request.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-1 Trip Blank **Laboratory Sample ID:** 17I0765-01

Grab Date/Time: 08/09/2017 13:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	01	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/02/17 19:02	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-2 Trip Blank **Laboratory Sample ID:** 17I0765-02

Grab Date/Time: 06/29/2017 13:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	02	SW8260B	<0.40 ug/L		0.40	1	09/27/17 12:33	09/27/17 12:33	JDW
1,1,1-Trichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,1,2,2-Tetrachloroethane	02	SW8260B	<0.40 ug/L		0.40	1	09/27/17 12:33	09/27/17 12:33	JDW
1,1,2-Trichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,1-Dichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,1-Dichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,1-Dichloropropene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,2,3-Trichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,2,3-Trichloropropane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,2,4-Trichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,2,4-Trimethylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,2-Dibromo-3-chloropropane (DBCP)	02	SW8260B	<4.00 ug/L		4.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,2-Dibromoethane (EDB)	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,2-Dichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,2-Dichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,2-Dichloropropane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,3,5-Trimethylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,3-Dichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,3-Dichloropropane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
1,4-Dichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
2,2-Dichloropropane	02	SW8260B	<2.00 ug/L		2.00	1	09/27/17 12:33	09/27/17 12:33	JDW
2-Butanone (MEK)	02	SW8260B	<10.0 ug/L		10.0	1	09/27/17 12:33	09/27/17 12:33	JDW
2-Chlorotoluene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
2-Hexanone (MBK)	02	SW8260B	<5.00 ug/L		5.00	1	09/27/17 12:33	09/27/17 12:33	JDW
4-Chlorotoluene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
4-Isopropyltoluene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-2 Trip Blank **Laboratory Sample ID:** 17I0765-02

Grab Date/Time: 06/29/2017 13:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	02	SW8260B	<5.00 ug/L		5.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Acetone	02	SW8260B	<10.0 ug/L		10.0	1	09/27/17 12:33	09/27/17 12:33	JDW
Benzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Bromobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Bromochloromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Bromodichloromethane	02	SW8260B	<0.50 ug/L		0.50	1	09/27/17 12:33	09/27/17 12:33	JDW
Bromoform	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Bromomethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Carbon disulfide	02	SW8260B	<10.0 ug/L		10.0	1	09/27/17 12:33	09/27/17 12:33	JDW
Carbon tetrachloride	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Chlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Chloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Chloroform	02	SW8260B	<0.50 ug/L		0.50	1	09/27/17 12:33	09/27/17 12:33	JDW
Chloromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
cis-1,2-Dichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
cis-1,3-Dichloropropene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Dibromochloromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Dibromomethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Dichlorodifluoromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Di-isopropyl ether (DIPE)	02	SW8260B	<5.00 ug/L		5.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Ethylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Hexachlorobutadiene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Iodomethane	02	SW8260B	<10.0 ug/L		10.0	1	09/27/17 12:33	09/27/17 12:33	JDW
Isopropylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
m+p-Xylenes	02	SW8260B	<2.00 ug/L		2.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Methylene chloride	02	SW8260B	<4.00 ug/L		4.00	1	09/27/17 12:33	09/27/17 12:33	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-2 Trip Blank **Laboratory Sample ID:** 17I0765-02

Grab Date/Time: 06/29/2017 13:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Naphthalene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
n-Butylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
n-Propylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
o-Xylene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
sec-Butylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Styrene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
TAA	02	SW8260B	<25.0 ug/L		25.0	1	09/27/17 12:33	09/27/17 12:33	JDW
TBA	02	SW8260B	<100 ug/L		100	1	09/27/17 12:33	09/27/17 12:33	JDW
tert-Butylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Tetrachloroethylene (PCE)	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Toluene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
trans-1,2-Dichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
trans-1,3-Dichloropropene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Trichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Trichlorofluoromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Vinyl acetate	02	SW8260B	<10.0 ug/L		10.0	1	09/27/17 12:33	09/27/17 12:33	JDW
Vinyl chloride	02	SW8260B	<0.50 ug/L		0.50	1	09/27/17 12:33	09/27/17 12:33	JDW
Xylenes, Total	02	SW8260B	<3.00 ug/L		3.00	1	09/27/17 12:33	09/27/17 12:33	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*02*	*SW8260B*	*90.6 %*		*70-120*		*09/27/17 12:33*	*09/27/17 12:33*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*02*	*SW8260B*	*99.9 %*		*75-120*		*09/27/17 12:33*	*09/27/17 12:33*	*JDW*
Surr: Dibromofluoromethane (Surr)	*02*	*SW8260B*	*93.6 %*		*80-119*		*09/27/17 12:33*	*09/27/17 12:33*	*JDW*
Surr: Toluene-d8 (Surr)	*02*	*SW8260B*	*102 %*		*85-120*		*09/27/17 12:33*	*09/27/17 12:33*	*JDW*

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-3 FB 1327 Cardwell **Laboratory Sample ID:** 17I0765-03

Grab Date/Time: 09/25/2017 11:10

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	03	SW8260B	<0.40 ug/L		0.40	1	09/27/17 13:20	09/27/17 13:20	JDW
1,1,1-Trichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,1,2,2-Tetrachloroethane	03	SW8260B	<0.40 ug/L		0.40	1	09/27/17 13:20	09/27/17 13:20	JDW
1,1,2-Trichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,1-Dichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,1-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,1-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,2,3-Trichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,2,3-Trichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,2,4-Trichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,2,4-Trimethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,2-Dibromo-3-chloropropane (DBCP)	03	SW8260B	<4.00 ug/L		4.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,2-Dibromoethane (EDB)	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,2-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,2-Dichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,2-Dichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,3,5-Trimethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,3-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,3-Dichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
1,4-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
2,2-Dichloropropane	03	SW8260B	<2.00 ug/L		2.00	1	09/27/17 13:20	09/27/17 13:20	JDW
2-Butanone (MEK)	03	SW8260B	<10.0 ug/L		10.0	1	09/27/17 13:20	09/27/17 13:20	JDW
2-Chlorotoluene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
2-Hexanone (MBK)	03	SW8260B	<5.00 ug/L		5.00	1	09/27/17 13:20	09/27/17 13:20	JDW
4-Chlorotoluene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
4-Isopropyltoluene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-3 FB 1327 Cardwell **Laboratory Sample ID:** 17I0765-03

Grab Date/Time: 09/25/2017 11:10

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	03	SW8260B	<5.00 ug/L		5.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Acetone	03	SW8260B	<10.0 ug/L		10.0	1	09/27/17 13:20	09/27/17 13:20	JDW
Benzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Bromobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Bromochloromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Bromodichloromethane	03	SW8260B	<0.50 ug/L		0.50	1	09/27/17 13:20	09/27/17 13:20	JDW
Bromoform	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Bromomethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Carbon disulfide	03	SW8260B	<10.0 ug/L		10.0	1	09/27/17 13:20	09/27/17 13:20	JDW
Carbon tetrachloride	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Chlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Chloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Chloroform	03	SW8260B	<0.50 ug/L		0.50	1	09/27/17 13:20	09/27/17 13:20	JDW
Chloromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
cis-1,2-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
cis-1,3-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Dibromochloromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Dibromomethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Dichlorodifluoromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Di-isopropyl ether (DIPE)	03	SW8260B	<5.00 ug/L		5.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Ethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Hexachlorobutadiene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Iodomethane	03	SW8260B	<10.0 ug/L		10.0	1	09/27/17 13:20	09/27/17 13:20	JDW
Isopropylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
m+p-Xylenes	03	SW8260B	<2.00 ug/L		2.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Methylene chloride	03	SW8260B	<4.00 ug/L		4.00	1	09/27/17 13:20	09/27/17 13:20	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-3 FB 1327 Cardwell **Laboratory Sample ID:** 17I0765-03

Grab Date/Time: 09/25/2017 11:10

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Naphthalene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
n-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
n-Propylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
o-Xylene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
sec-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Styrene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
TAA	03	SW8260B	<25.0 ug/L		25.0	1	09/27/17 13:20	09/27/17 13:20	JDW
TBA	03	SW8260B	<100 ug/L		100	1	09/27/17 13:20	09/27/17 13:20	JDW
tert-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Tetrachloroethylene (PCE)	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Toluene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
trans-1,2-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
trans-1,3-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Trichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Trichlorofluoromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Vinyl acetate	03	SW8260B	<10.0 ug/L		10.0	1	09/27/17 13:20	09/27/17 13:20	JDW
Vinyl chloride	03	SW8260B	<0.50 ug/L		0.50	1	09/27/17 13:20	09/27/17 13:20	JDW
Xylenes, Total	03	SW8260B	<3.00 ug/L		3.00	1	09/27/17 13:20	09/27/17 13:20	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*03*	*SW8260B*	*98.3 %*		*70-120*		*09/27/17 13:20*	*09/27/17 13:20*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*03*	*SW8260B*	*98.1 %*		*75-120*		*09/27/17 13:20*	*09/27/17 13:20*	*JDW*
Surr: Dibromofluoromethane (Surr)	*03*	*SW8260B*	*93.5 %*		*80-119*		*09/27/17 13:20*	*09/27/17 13:20*	*JDW*
Surr: Toluene-d8 (Surr)	*03*	*SW8260B*	*102 %*		*85-120*		*09/27/17 13:20*	*09/27/17 13:20*	*JDW*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-3 FB 1327 Cardwell **Laboratory Sample ID:** 17I0765-03

Grab Date/Time: 09/25/2017 11:10

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	03	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/02/17 19:22	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-4 FB 1241 Cardwell **Laboratory Sample ID:** 17I0765-04

Grab Date/Time: 09/25/2017 11:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	04	SW8260B	<0.40 ug/L		0.40	1	09/27/17 13:43	09/27/17 13:43	JDW
1,1,1-Trichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,1,2,2-Tetrachloroethane	04	SW8260B	<0.40 ug/L		0.40	1	09/27/17 13:43	09/27/17 13:43	JDW
1,1,2-Trichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,1-Dichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,1-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,1-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,2,3-Trichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,2,3-Trichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,2,4-Trichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,2,4-Trimethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,2-Dibromo-3-chloropropane (DBCP)	04	SW8260B	<4.00 ug/L		4.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,2-Dibromoethane (EDB)	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,2-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,2-Dichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,2-Dichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,3,5-Trimethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,3-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,3-Dichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
1,4-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
2,2-Dichloropropane	04	SW8260B	<2.00 ug/L		2.00	1	09/27/17 13:43	09/27/17 13:43	JDW
2-Butanone (MEK)	04	SW8260B	<10.0 ug/L		10.0	1	09/27/17 13:43	09/27/17 13:43	JDW
2-Chlorotoluene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
2-Hexanone (MBK)	04	SW8260B	<5.00 ug/L		5.00	1	09/27/17 13:43	09/27/17 13:43	JDW
4-Chlorotoluene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
4-Isopropyltoluene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-4 FB 1241 Cardwell **Laboratory Sample ID:** 17I0765-04

Grab Date/Time: 09/25/2017 11:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	04	SW8260B	<5.00 ug/L		5.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Acetone	04	SW8260B	<10.0 ug/L		10.0	1	09/27/17 13:43	09/27/17 13:43	JDW
Benzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Bromobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Bromochloromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Bromodichloromethane	04	SW8260B	<0.50 ug/L		0.50	1	09/27/17 13:43	09/27/17 13:43	JDW
Bromoform	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Bromomethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Carbon disulfide	04	SW8260B	<10.0 ug/L		10.0	1	09/27/17 13:43	09/27/17 13:43	JDW
Carbon tetrachloride	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Chlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Chloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Chloroform	04	SW8260B	<0.50 ug/L		0.50	1	09/27/17 13:43	09/27/17 13:43	JDW
Chloromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
cis-1,2-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
cis-1,3-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Dibromochloromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Dibromomethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Dichlorodifluoromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Di-isopropyl ether (DIPE)	04	SW8260B	<5.00 ug/L		5.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Ethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Hexachlorobutadiene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Iodomethane	04	SW8260B	<10.0 ug/L		10.0	1	09/27/17 13:43	09/27/17 13:43	JDW
Isopropylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
m+p-Xylenes	04	SW8260B	<2.00 ug/L		2.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Methylene chloride	04	SW8260B	<4.00 ug/L		4.00	1	09/27/17 13:43	09/27/17 13:43	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-4 FB 1241 Cardwell **Laboratory Sample ID:** 17I0765-04

Grab Date/Time: 09/25/2017 11:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Naphthalene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
n-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
n-Propylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
o-Xylene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
sec-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Styrene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
TAA	04	SW8260B	<25.0 ug/L		25.0	1	09/27/17 13:43	09/27/17 13:43	JDW
TBA	04	SW8260B	<100 ug/L		100	1	09/27/17 13:43	09/27/17 13:43	JDW
tert-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Tetrachloroethylene (PCE)	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Toluene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
trans-1,2-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
trans-1,3-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Trichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Trichlorofluoromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Vinyl acetate	04	SW8260B	<10.0 ug/L		10.0	1	09/27/17 13:43	09/27/17 13:43	JDW
Vinyl chloride	04	SW8260B	<0.50 ug/L		0.50	1	09/27/17 13:43	09/27/17 13:43	JDW
Xylenes, Total	04	SW8260B	<3.00 ug/L		3.00	1	09/27/17 13:43	09/27/17 13:43	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*04*	*SW8260B*	*93.7 %*		*70-120*		*09/27/17 13:43*	*09/27/17 13:43*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*04*	*SW8260B*	*99.2 %*		*75-120*		*09/27/17 13:43*	*09/27/17 13:43*	*JDW*
Surr: Dibromofluoromethane (Surr)	*04*	*SW8260B*	*93.3 %*		*80-119*		*09/27/17 13:43*	*09/27/17 13:43*	*JDW*
Surr: Toluene-d8 (Surr)	*04*	*SW8260B*	*102 %*		*85-120*		*09/27/17 13:43*	*09/27/17 13:43*	*JDW*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-4 FB 1241 Cardwell **Laboratory Sample ID:** 17I0765-04

Grab Date/Time: 09/25/2017 11:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	04	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/02/17 19:41	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-5 FB 1518 Old Oaks **Laboratory Sample ID:** 17I0765-05

Grab Date/Time: 09/25/2017 12:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	05	SW8260B	<0.40 ug/L		0.40	1	09/27/17 14:07	09/27/17 14:07	JDW
1,1,1-Trichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,1,2,2-Tetrachloroethane	05	SW8260B	<0.40 ug/L		0.40	1	09/27/17 14:07	09/27/17 14:07	JDW
1,1,2-Trichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,1-Dichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,1-Dichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,1-Dichloropropene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,2,3-Trichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,2,3-Trichloropropane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,2,4-Trichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,2,4-Trimethylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,2-Dibromo-3-chloropropane (DBCP)	05	SW8260B	<4.00 ug/L		4.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,2-Dibromoethane (EDB)	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,2-Dichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,2-Dichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,2-Dichloropropane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,3,5-Trimethylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,3-Dichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,3-Dichloropropane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
1,4-Dichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
2,2-Dichloropropane	05	SW8260B	<2.00 ug/L		2.00	1	09/27/17 14:07	09/27/17 14:07	JDW
2-Butanone (MEK)	05	SW8260B	<10.0 ug/L		10.0	1	09/27/17 14:07	09/27/17 14:07	JDW
2-Chlorotoluene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
2-Hexanone (MBK)	05	SW8260B	<5.00 ug/L		5.00	1	09/27/17 14:07	09/27/17 14:07	JDW
4-Chlorotoluene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
4-Isopropyltoluene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-5 FB 1518 Old Oaks **Laboratory Sample ID:** 17I0765-05

Grab Date/Time: 09/25/2017 12:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	05	SW8260B	<5.00 ug/L		5.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Acetone	05	SW8260B	<10.0 ug/L		10.0	1	09/27/17 14:07	09/27/17 14:07	JDW
Benzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Bromobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Bromochloromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Bromodichloromethane	05	SW8260B	<0.50 ug/L		0.50	1	09/27/17 14:07	09/27/17 14:07	JDW
Bromoform	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Bromomethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Carbon disulfide	05	SW8260B	<10.0 ug/L		10.0	1	09/27/17 14:07	09/27/17 14:07	JDW
Carbon tetrachloride	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Chlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Chloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Chloroform	05	SW8260B	<0.50 ug/L		0.50	1	09/27/17 14:07	09/27/17 14:07	JDW
Chloromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
cis-1,2-Dichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
cis-1,3-Dichloropropene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Dibromochloromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Dibromomethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Dichlorodifluoromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Di-isopropyl ether (DIPE)	05	SW8260B	<5.00 ug/L		5.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Ethylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Hexachlorobutadiene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Iodomethane	05	SW8260B	<10.0 ug/L		10.0	1	09/27/17 14:07	09/27/17 14:07	JDW
Isopropylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
m+p-Xylenes	05	SW8260B	<2.00 ug/L		2.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Methylene chloride	05	SW8260B	<4.00 ug/L		4.00	1	09/27/17 14:07	09/27/17 14:07	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-5 FB 1518 Old Oaks **Laboratory Sample ID:** 17I0765-05

Grab Date/Time: 09/25/2017 12:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Naphthalene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
n-Butylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
n-Propylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
o-Xylene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
sec-Butylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Styrene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
TAA	05	SW8260B	<25.0 ug/L		25.0	1	09/27/17 14:07	09/27/17 14:07	JDW
TBA	05	SW8260B	<100 ug/L		100	1	09/27/17 14:07	09/27/17 14:07	JDW
tert-Butylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Tetrachloroethylene (PCE)	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Toluene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
trans-1,2-Dichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
trans-1,3-Dichloropropene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Trichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Trichlorofluoromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Vinyl acetate	05	SW8260B	<10.0 ug/L		10.0	1	09/27/17 14:07	09/27/17 14:07	JDW
Vinyl chloride	05	SW8260B	<0.50 ug/L		0.50	1	09/27/17 14:07	09/27/17 14:07	JDW
Xylenes, Total	05	SW8260B	<3.00 ug/L		3.00	1	09/27/17 14:07	09/27/17 14:07	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*05*	*SW8260B*	*92.8 %*		*70-120*		*09/27/17 14:07*	*09/27/17 14:07*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*05*	*SW8260B*	*98.5 %*		*75-120*		*09/27/17 14:07*	*09/27/17 14:07*	*JDW*
Surr: Dibromofluoromethane (Surr)	*05*	*SW8260B*	*94.2 %*		*80-119*		*09/27/17 14:07*	*09/27/17 14:07*	*JDW*
Surr: Toluene-d8 (Surr)	*05*	*SW8260B*	*103 %*		*85-120*		*09/27/17 14:07*	*09/27/17 14:07*	*JDW*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-5 FB 1518 Old Oaks **Laboratory Sample ID:** 17I0765-05

Grab Date/Time: 09/25/2017 12:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	05	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/02/17 20:00	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-6 1327 Cardwell **Laboratory Sample ID:** 17I0765-06

Grab Date/Time: 09/25/2017 11:05

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	06	SW8260B	<0.40 ug/L		0.40	1	09/27/17 15:40	09/27/17 15:40	JDW
1,1,1-Trichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,1,2,2-Tetrachloroethane	06	SW8260B	<0.40 ug/L		0.40	1	09/27/17 15:40	09/27/17 15:40	JDW
1,1,2-Trichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,1-Dichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,1-Dichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,1-Dichloropropene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,2,3-Trichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,2,3-Trichloropropane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,2,4-Trichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,2,4-Trimethylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,2-Dibromo-3-chloropropane (DBCP)	06	SW8260B	<4.00 ug/L		4.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,2-Dibromoethane (EDB)	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,2-Dichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,2-Dichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,2-Dichloropropane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,3,5-Trimethylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,3-Dichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,3-Dichloropropane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
1,4-Dichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
2,2-Dichloropropane	06	SW8260B	<2.00 ug/L		2.00	1	09/27/17 15:40	09/27/17 15:40	JDW
2-Butanone (MEK)	06	SW8260B	<10.0 ug/L		10.0	1	09/27/17 15:40	09/27/17 15:40	JDW
2-Chlorotoluene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
2-Hexanone (MBK)	06	SW8260B	<5.00 ug/L		5.00	1	09/27/17 15:40	09/27/17 15:40	JDW
4-Chlorotoluene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
4-Isopropyltoluene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-6 1327 Cardwell **Laboratory Sample ID:** 17I0765-06

Grab Date/Time: 09/25/2017 11:05

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	06	SW8260B	<5.00 ug/L		5.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Acetone	06	SW8260B	<10.0 ug/L		10.0	1	09/27/17 15:40	09/27/17 15:40	JDW
Benzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Bromobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Bromochloromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Bromodichloromethane	06	SW8260B	<0.50 ug/L		0.50	1	09/27/17 15:40	09/27/17 15:40	JDW
Bromoform	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Bromomethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Carbon disulfide	06	SW8260B	<10.0 ug/L		10.0	1	09/27/17 15:40	09/27/17 15:40	JDW
Carbon tetrachloride	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Chlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Chloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Chloroform	06	SW8260B	<0.50 ug/L		0.50	1	09/27/17 15:40	09/27/17 15:40	JDW
Chloromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
cis-1,2-Dichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
cis-1,3-Dichloropropene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Dibromochloromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Dibromomethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Dichlorodifluoromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Di-isopropyl ether (DIPE)	06	SW8260B	<5.00 ug/L		5.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Ethylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Hexachlorobutadiene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Iodomethane	06	SW8260B	<10.0 ug/L		10.0	1	09/27/17 15:40	09/27/17 15:40	JDW
Isopropylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
m+p-Xylenes	06	SW8260B	<2.00 ug/L		2.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Methylene chloride	06	SW8260B	<4.00 ug/L		4.00	1	09/27/17 15:40	09/27/17 15:40	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-6 1327 Cardwell **Laboratory Sample ID:** 17I0765-06

Grab Date/Time: 09/25/2017 11:05

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Naphthalene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
n-Butylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
n-Propylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
o-Xylene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
sec-Butylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Styrene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
TAA	06	SW8260B	<25.0 ug/L		25.0	1	09/27/17 15:40	09/27/17 15:40	JDW
TBA	06	SW8260B	<100 ug/L		100	1	09/27/17 15:40	09/27/17 15:40	JDW
tert-Butylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Tetrachloroethylene (PCE)	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Toluene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
trans-1,2-Dichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
trans-1,3-Dichloropropene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Trichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Trichlorofluoromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Vinyl acetate	06	SW8260B	<10.0 ug/L		10.0	1	09/27/17 15:40	09/27/17 15:40	JDW
Vinyl chloride	06	SW8260B	<0.50 ug/L		0.50	1	09/27/17 15:40	09/27/17 15:40	JDW
Xylenes, Total	06	SW8260B	<3.00 ug/L		3.00	1	09/27/17 15:40	09/27/17 15:40	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*06*	*SW8260B*	*91.4 %*		*70-120*		*09/27/17 15:40*	*09/27/17 15:40*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*06*	*SW8260B*	*97.0 %*		*75-120*		*09/27/17 15:40*	*09/27/17 15:40*	*JDW*
Surr: Dibromofluoromethane (Surr)	*06*	*SW8260B*	*90.6 %*		*80-119*		*09/27/17 15:40*	*09/27/17 15:40*	*JDW*
Surr: Toluene-d8 (Surr)	*06*	*SW8260B*	*104 %*		*85-120*		*09/27/17 15:40*	*09/27/17 15:40*	*JDW*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-6 1327 Cardwell **Laboratory Sample ID:** 17I0765-06

Grab Date/Time: 09/25/2017 11:05

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	06	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/02/17 20:20	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-7 1241 Cardwell **Laboratory Sample ID:** 17I0765-07

Grab Date/Time: 09/25/2017 11:35

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS				**CI**					
1,1,1,2-Tetrachloroethane	07	SW8260B	<0.40 ug/L		0.40	1	09/27/17 16:04	09/27/17 16:04	JDW
1,1,1-Trichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,1,2,2-Tetrachloroethane	07	SW8260B	<0.40 ug/L		0.40	1	09/27/17 16:04	09/27/17 16:04	JDW
1,1,2-Trichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,1-Dichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,1-Dichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,1-Dichloropropene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,2,3-Trichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,2,3-Trichloropropane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,2,4-Trichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,2,4-Trimethylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,2-Dibromo-3-chloropropane (DBCP)	07	SW8260B	<4.00 ug/L		4.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,2-Dibromoethane (EDB)	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,2-Dichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,2-Dichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,2-Dichloropropane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,3,5-Trimethylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,3-Dichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,3-Dichloropropane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
1,4-Dichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
2,2-Dichloropropane	07	SW8260B	<2.00 ug/L		2.00	1	09/27/17 16:04	09/27/17 16:04	JDW
2-Butanone (MEK)	07	SW8260B	<10.0 ug/L		10.0	1	09/27/17 16:04	09/27/17 16:04	JDW
2-Chlorotoluene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
2-Hexanone (MBK)	07	SW8260B	<5.00 ug/L		5.00	1	09/27/17 16:04	09/27/17 16:04	JDW
4-Chlorotoluene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
4-Isopropyltoluene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-7 1241 Cardwell **Laboratory Sample ID:** 17I0765-07

Grab Date/Time: 09/25/2017 11:35

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS				**CI**					
4-Methyl-2-pentanone (MIBK)	07	SW8260B	<5.00 ug/L		5.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Acetone	07	SW8260B	<10.0 ug/L		10.0	1	09/27/17 16:04	09/27/17 16:04	JDW
Benzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Bromobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Bromochloromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Bromodichloromethane	07	SW8260B	<0.50 ug/L		0.50	1	09/27/17 16:04	09/27/17 16:04	JDW
Bromoform	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Bromomethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Carbon disulfide	07	SW8260B	<10.0 ug/L		10.0	1	09/27/17 16:04	09/27/17 16:04	JDW
Carbon tetrachloride	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Chlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Chloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Chloroform	07	SW8260B	**1.76 ug/L**		0.50	1	09/27/17 16:04	09/27/17 16:04	JDW
Chloromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
cis-1,2-Dichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
cis-1,3-Dichloropropene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Dibromochloromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Dibromomethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Dichlorodifluoromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Di-isopropyl ether (DIPE)	07	SW8260B	<5.00 ug/L		5.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Ethylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Hexachlorobutadiene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Iodomethane	07	SW8260B	<10.0 ug/L		10.0	1	09/27/17 16:04	09/27/17 16:04	JDW
Isopropylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
m+p-Xylenes	07	SW8260B	<2.00 ug/L		2.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Methylene chloride	07	SW8260B	<4.00 ug/L		4.00	1	09/27/17 16:04	09/27/17 16:04	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-7 1241 Cardwell **Laboratory Sample ID:** 17I0765-07

Grab Date/Time: 09/25/2017 11:35

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS				**CI**					
Methyl-t-butyl ether (MTBE)	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Naphthalene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
n-Butylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
n-Propylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
o-Xylene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
sec-Butylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Styrene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
TAA	07	SW8260B	<25.0 ug/L		25.0	1	09/27/17 16:04	09/27/17 16:04	JDW
TBA	07	SW8260B	<100 ug/L		100	1	09/27/17 16:04	09/27/17 16:04	JDW
tert-Butylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Tetrachloroethylene (PCE)	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Toluene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
trans-1,2-Dichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
trans-1,3-Dichloropropene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Trichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Trichlorofluoromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Vinyl acetate	07	SW8260B	<10.0 ug/L		10.0	1	09/27/17 16:04	09/27/17 16:04	JDW
Vinyl chloride	07	SW8260B	<0.50 ug/L		0.50	1	09/27/17 16:04	09/27/17 16:04	JDW
Xylenes, Total	07	SW8260B	<3.00 ug/L		3.00	1	09/27/17 16:04	09/27/17 16:04	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*07*	*SW8260B*	*93.8 %*		*70-120*		*09/27/17 16:04*	*09/27/17 16:04*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*07*	*SW8260B*	*100 %*		*75-120*		*09/27/17 16:04*	*09/27/17 16:04*	*JDW*
Surr: Dibromofluoromethane (Surr)	*07*	*SW8260B*	*97.2 %*		*80-119*		*09/27/17 16:04*	*09/27/17 16:04*	*JDW*
Surr: Toluene-d8 (Surr)	*07*	*SW8260B*	*101 %*		*85-120*		*09/27/17 16:04*	*09/27/17 16:04*	*JDW*

Micro-extractables by GC/ECD

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-7 1241 Cardwell **Laboratory Sample ID:** 17I0765-07

Grab Date/Time: 09/25/2017 11:35

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	07	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/02/17 20:39	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-8 1518 Old Oaks **Laboratory Sample ID:** 17I0765-08

Grab Date/Time: 09/25/2017 12:15

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	08	SW8260B	<0.40 ug/L		0.40	1	09/27/17 16:27	09/27/17 16:27	JDW
1,1,1-Trichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,1,2,2-Tetrachloroethane	08	SW8260B	<0.40 ug/L		0.40	1	09/27/17 16:27	09/27/17 16:27	JDW
1,1,2-Trichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,1-Dichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,1-Dichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,1-Dichloropropene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,2,3-Trichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,2,3-Trichloropropane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,2,4-Trichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,2,4-Trimethylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,2-Dibromo-3-chloropropane (DBCP)	08	SW8260B	<4.00 ug/L		4.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,2-Dibromoethane (EDB)	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,2-Dichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,2-Dichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,2-Dichloropropane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,3,5-Trimethylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,3-Dichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,3-Dichloropropane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
1,4-Dichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
2,2-Dichloropropane	08	SW8260B	<2.00 ug/L		2.00	1	09/27/17 16:27	09/27/17 16:27	JDW
2-Butanone (MEK)	08	SW8260B	<10.0 ug/L		10.0	1	09/27/17 16:27	09/27/17 16:27	JDW
2-Chlorotoluene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
2-Hexanone (MBK)	08	SW8260B	<5.00 ug/L		5.00	1	09/27/17 16:27	09/27/17 16:27	JDW
4-Chlorotoluene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
4-Isopropyltoluene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-8 1518 Old Oaks **Laboratory Sample ID:** 17I0765-08

Grab Date/Time: 09/25/2017 12:15

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	08	SW8260B	<5.00 ug/L		5.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Acetone	08	SW8260B	<10.0 ug/L		10.0	1	09/27/17 16:27	09/27/17 16:27	JDW
Benzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Bromobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Bromochloromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Bromodichloromethane	08	SW8260B	<0.50 ug/L		0.50	1	09/27/17 16:27	09/27/17 16:27	JDW
Bromoform	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Bromomethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Carbon disulfide	08	SW8260B	<10.0 ug/L		10.0	1	09/27/17 16:27	09/27/17 16:27	JDW
Carbon tetrachloride	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Chlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Chloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Chloroform	08	SW8260B	<0.50 ug/L		0.50	1	09/27/17 16:27	09/27/17 16:27	JDW
Chloromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
cis-1,2-Dichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
cis-1,3-Dichloropropene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Dibromochloromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Dibromomethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Dichlorodifluoromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Di-isopropyl ether (DIPE)	08	SW8260B	<5.00 ug/L		5.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Ethylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Hexachlorobutadiene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Iodomethane	08	SW8260B	<10.0 ug/L		10.0	1	09/27/17 16:27	09/27/17 16:27	JDW
Isopropylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
m+p-Xylenes	08	SW8260B	<2.00 ug/L		2.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Methylene chloride	08	SW8260B	<4.00 ug/L		4.00	1	09/27/17 16:27	09/27/17 16:27	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-8 1518 Old Oaks **Laboratory Sample ID:** 17I0765-08

Grab Date/Time: 09/25/2017 12:15

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Naphthalene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
n-Butylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
n-Propylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
o-Xylene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
sec-Butylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Styrene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
TAA	08	SW8260B	<25.0 ug/L		25.0	1	09/27/17 16:27	09/27/17 16:27	JDW
TBA	08	SW8260B	<100 ug/L		100	1	09/27/17 16:27	09/27/17 16:27	JDW
tert-Butylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Tetrachloroethylene (PCE)	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Toluene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
trans-1,2-Dichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
trans-1,3-Dichloropropene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Trichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Trichlorofluoromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Vinyl acetate	08	SW8260B	<10.0 ug/L		10.0	1	09/27/17 16:27	09/27/17 16:27	JDW
Vinyl chloride	08	SW8260B	<0.50 ug/L		0.50	1	09/27/17 16:27	09/27/17 16:27	JDW
Xylenes, Total	08	SW8260B	<3.00 ug/L		3.00	1	09/27/17 16:27	09/27/17 16:27	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*08*	*SW8260B*	*94.6 %*		*70-120*		*09/27/17 16:27*	*09/27/17 16:27*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*08*	*SW8260B*	*98.7 %*		*75-120*		*09/27/17 16:27*	*09/27/17 16:27*	*JDW*
Surr: Dibromofluoromethane (Surr)	*08*	*SW8260B*	*97.8 %*		*80-119*		*09/27/17 16:27*	*09/27/17 16:27*	*JDW*
Surr: Toluene-d8 (Surr)	*08*	*SW8260B*	*104 %*		*85-120*		*09/27/17 16:27*	*09/27/17 16:27*	*JDW*
Micro-extractables by GC/ECD									

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0765

Analytical Results

Sample I.D. 92517001-8 1518 Old Oaks **Laboratory Sample ID:** 17I0765-08

Grab Date/Time: 09/25/2017 12:15

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	08	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/02/17 20:59	LBH

Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Organic Compounds by GCMS		**Preparation Method:**	**SW5030B**		
17I0765-02	5.00 mL / 5.00 mL	SW8260B	BAI0770	SAI0719	AI70017
17I0765-03	5.00 mL / 5.00 mL	SW8260B	BAI0770	SAI0719	AI70017
17I0765-04	5.00 mL / 5.00 mL	SW8260B	BAI0770	SAI0719	AI70017
17I0765-05	5.00 mL / 5.00 mL	SW8260B	BAI0770	SAI0719	AI70017
17I0765-06	5.00 mL / 5.00 mL	SW8260B	BAI0770	SAI0719	AI70017
17I0765-07	5.00 mL / 5.00 mL	SW8260B	BAI0770	SAI0719	AI70017
17I0765-08	5.00 mL / 5.00 mL	SW8260B	BAI0770	SAI0719	AI70017

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Micro-extractables by GC/ECD		**Preparation Method:**	**SW8011**		
17I0765-01	60.0 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0765-03	60.7 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0765-04	61.0 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0765-05	60.9 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0765-06	60.2 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0765-07	60.6 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0765-08	60.8 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
Blank (BAI0770-BLK1)				Prepared & Analyzed: 09/27/2017						
1,1,1,2-Tetrachloroethane	<0.40 ug/L	0.40	ug/L							
1,1,1-Trichloroethane	<1.00 ug/L	1.00	ug/L							
1,1,2,2-Tetrachloroethane	<0.40 ug/L	0.40	ug/L							
1,1,2-Trichloroethane	<1.00 ug/L	1.00	ug/L							
1,1-Dichloroethane	<1.00 ug/L	1.00	ug/L							
1,1-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
1,1-Dichloropropene	<1.00 ug/L	1.00	ug/L							
1,2,3-Trichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2,3-Trichloropropane	<1.00 ug/L	1.00	ug/L							
1,2,4-Trichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2,4-Trimethylbenzene	<1.00 ug/L	1.00	ug/L							
1,2-Dibromo-3-chloropropane (DBCP)	<4.00 ug/L	4.00	ug/L							
1,2-Dibromoethane (EDB)	<1.00 ug/L	1.00	ug/L							
1,2-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2-Dichloroethane	<1.00 ug/L	1.00	ug/L							
1,2-Dichloropropane	<1.00 ug/L	1.00	ug/L							
1,3,5-Trimethylbenzene	<1.00 ug/L	1.00	ug/L							
1,3-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,3-Dichloropropane	<1.00 ug/L	1.00	ug/L							
1,4-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
2,2-Dichloropropane	<2.00 ug/L	2.00	ug/L							
2-Butanone (MEK)	<10.0 ug/L	10.0	ug/L							
2-Chlorotoluene	<1.00 ug/L	1.00	ug/L							
2-Hexanone (MBK)	<5.00 ug/L	5.00	ug/L							
4-Chlorotoluene	<1.00 ug/L	1.00	ug/L							
4-Isopropyltoluene	<1.00 ug/L	1.00	ug/L							
4-Methyl-2-pentanone (MIBK)	<5.00 ug/L	5.00	ug/L							
Acetone	<10.0 ug/L	10.0	ug/L							
Benzene	<1.00 ug/L	1.00	ug/L							
Bromobenzene	<1.00 ug/L	1.00	ug/L							
Bromochloromethane	<1.00 ug/L	1.00	ug/L							

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
Blank (BAI0770-BLK1)				Prepared & Analyzed: 09/27/2017						
Bromodichloromethane	<0.50 ug/L	0.50	ug/L							
Bromoform	<1.00 ug/L	1.00	ug/L							
Bromomethane	<1.00 ug/L	1.00	ug/L							
Carbon disulfide	<10.0 ug/L	10.0	ug/L							
Carbon tetrachloride	<1.00 ug/L	1.00	ug/L							
Chlorobenzene	<1.00 ug/L	1.00	ug/L							
Chloroethane	<1.00 ug/L	1.00	ug/L							
Chloroform	<0.50 ug/L	0.50	ug/L							
Chloromethane	<1.00 ug/L	1.00	ug/L							
cis-1,2-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
cis-1,3-Dichloropropene	<1.00 ug/L	1.00	ug/L							
Dibromochloromethane	<1.00 ug/L	1.00	ug/L							
Dibromomethane	<1.00 ug/L	1.00	ug/L							
Dichlorodifluoromethane	<1.00 ug/L	1.00	ug/L							
Di-isopropyl ether (DIPE)	<5.00 ug/L	5.00	ug/L							
Ethylbenzene	<1.00 ug/L	1.00	ug/L							
Hexachlorobutadiene	<1.00 ug/L	1.00	ug/L							
Iodomethane	<10.0 ug/L	10.0	ug/L							
Isopropylbenzene	<1.00 ug/L	1.00	ug/L							
m+p-Xylenes	<2.00 ug/L	2.00	ug/L							
Methylene chloride	<4.00 ug/L	4.00	ug/L							
Methyl-t-butyl ether (MTBE)	<1.00 ug/L	1.00	ug/L							
Naphthalene	<1.00 ug/L	1.00	ug/L							
n-Butylbenzene	<1.00 ug/L	1.00	ug/L							
n-Propylbenzene	<1.00 ug/L	1.00	ug/L							
o-Xylene	<1.00 ug/L	1.00	ug/L							
sec-Butylbenzene	<1.00 ug/L	1.00	ug/L							
Styrene	<1.00 ug/L	1.00	ug/L							
TAA	<25.0 ug/L	25.0	ug/L							
TBA	<100 ug/L	100	ug/L							
tert-Butylbenzene	<1.00 ug/L	1.00	ug/L							

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
Blank (BAI0770-BLK1)				Prepared & Analyzed: 09/27/2017						
Tetrachloroethylene (PCE)	<1.00 ug/L	1.00	ug/L							
Toluene	<1.00 ug/L	1.00	ug/L							
trans-1,2-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
trans-1,3-Dichloropropene	<1.00 ug/L	1.00	ug/L							
Trichloroethylene	<1.00 ug/L	1.00	ug/L							
Trichlorofluoromethane	<1.00 ug/L	1.00	ug/L							
Vinyl acetate	<10.0 ug/L	10.0	ug/L							
Vinyl chloride	<0.50 ug/L	0.50	ug/L							
Xylenes, Total	<3.00 ug/L	3.00	ug/L							
Surr: 1,2-Dichloroethane-d4 (Surr)	46.1		ug/L	50.0		92.3	70-120			
Surr: 4-Bromofluorobenzene (Surr)	48.7		ug/L	50.0		97.4	75-120			
Surr: Dibromofluoromethane (Surr)	44.6		ug/L	50.0		89.1	80-119			
Surr: Toluene-d8 (Surr)	51.3		ug/L	50.0		103	85-120			
LCS (BAI0770-BS1)				Prepared & Analyzed: 09/27/2017						
1,1,1,2-Tetrachloroethane	44.4 ug/L	0.4	ug/L	50.0	ug/L	88.8	80-130			
1,1,1-Trichloroethane	45.5 ug/L	1	ug/L	50.0	ug/L	90.9	65-130			
1,1,2,2-Tetrachloroethane	43.1 ug/L	0.4	ug/L	50.0	ug/L	86.3	65-130			
1,1,2-Trichloroethane	50.3 ug/L	1	ug/L	50.0	ug/L	101	75-125			
1,1-Dichloroethane	49.7 ug/L	1	ug/L	50.0	ug/L	99.4	70-135			
1,1-Dichloroethylene	45.0 ug/L	1	ug/L	50.0	ug/L	90.0	70-130			
1,1-Dichloropropene	47.2 ug/L	1	ug/L	50.0	ug/L	94.3	75-135			
1,2,3-Trichlorobenzene	41.9 ug/L	1	ug/L	50.0	ug/L	83.7	55-140			
1,2,3-Trichloropropane	43.3 ug/L	1	ug/L	50.0	ug/L	86.6	75-125			
1,2,4-Trichlorobenzene	42.0 ug/L	1	ug/L	50.0	ug/L	84.0	65-135			
1,2,4-Trimethylbenzene	41.9 ug/L	1	ug/L	50.0	ug/L	83.8	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	39.4 ug/L	4	ug/L	50.0	ug/L	78.9	50-130			
1,2-Dibromoethane (EDB)	45.1 ug/L	1	ug/L	50.0	ug/L	90.1	80-120			
1,2-Dichlorobenzene	42.2 ug/L	1	ug/L	50.0	ug/L	84.5	70-120			
1,2-Dichloroethane	45.3 ug/L	1	ug/L	50.0	ug/L	90.6	70-130			
1,2-Dichloropropane	48.3 ug/L	1	ug/L	50.0	ug/L	96.6	75-125			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
LCS (BAI0770-BS1)				Prepared & Analyzed: 09/27/2017						
1,3,5-Trimethylbenzene	43.0 ug/L	1	ug/L	50.0	ug/L	86.1	75-125			
1,3-Dichlorobenzene	43.8 ug/L	1	ug/L	50.0	ug/L	87.6	75-125			
1,3-Dichloropropane	48.3 ug/L	1	ug/L	50.0	ug/L	96.6	75-125			
1,4-Dichlorobenzene	42.6 ug/L	1	ug/L	50.0	ug/L	85.2	75-125			
2,2-Dichloropropane	47.5 ug/L	2	ug/L	50.0	ug/L	94.9	70-135			
2-Butanone (MEK)	41.4 ug/L	10	ug/L	50.0	ug/L	82.8	30-150			
2-Chlorotoluene	44.1 ug/L	1	ug/L	50.0	ug/L	88.3	75-125			
2-Hexanone (MBK)	43.1 ug/L	5	ug/L	50.0	ug/L	86.3	55-130			
4-Chlorotoluene	42.2 ug/L	1	ug/L	50.0	ug/L	84.3	75-130			
4-Isopropyltoluene	42.0 ug/L	1	ug/L	50.0	ug/L	84.1	75-130			
4-Methyl-2-pentanone (MIBK)	45.0 ug/L	5	ug/L	50.0	ug/L	90.0	60-135			
Acetone	43.8 ug/L	10	ug/L	50.0	ug/L	87.6	40-140			
Benzene	48.1 ug/L	1	ug/L	50.0	ug/L	96.2	80-120			
Bromobenzene	43.1 ug/L	1	ug/L	50.0	ug/L	86.3	75-125			
Bromochloromethane	46.3 ug/L	1	ug/L	50.0	ug/L	92.7	65-130			
Bromodichloromethane	49.1 ug/L	0.5	ug/L	50.0	ug/L	98.3	75-120			
Bromoform	44.5 ug/L	1	ug/L	50.0	ug/L	89.0	70-130			
Bromomethane	43.0 ug/L	1	ug/L	50.0	ug/L	86.0	30-145			
Carbon disulfide	39.2 ug/L	10	ug/L	50.0	ug/L	78.4	35-160			
Carbon tetrachloride	48.0 ug/L	1	ug/L	50.0	ug/L	95.9	65-140			
Chlorobenzene	43.6 ug/L	1	ug/L	50.0	ug/L	87.2	80-120			
Chloroethane	42.1 ug/L	1	ug/L	50.0	ug/L	84.2	60-135			
Chloroform	45.4 ug/L	0.5	ug/L	50.0	ug/L	90.8	65-135			
Chloromethane	37.1 ug/L	1	ug/L	50.0	ug/L	74.2	40-125			
cis-1,2-Dichloroethylene	44.8 ug/L	1	ug/L	50.0	ug/L	89.6	70-125			
cis-1,3-Dichloropropene	49.4 ug/L	1	ug/L	50.0	ug/L	98.8	70-130			
Dibromochloromethane	49.5 ug/L	1	ug/L	50.0	ug/L	99.0	60-135			
Dibromomethane	48.0 ug/L	1	ug/L	50.0	ug/L	96.0	75-125			
Dichlorodifluoromethane	35.8 ug/L	1	ug/L	50.0	ug/L	71.7	30-155			
Ethylbenzene	43.3 ug/L	1	ug/L	50.0	ug/L	86.7	75-125			
Hexachlorobutadiene	43.1 ug/L	1	ug/L	50.0	ug/L	86.2	50-140			

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
LCS (BAI0770-BS1)				Prepared & Analyzed: 09/27/2017						
Isopropylbenzene	45.3 ug/L	1	ug/L	50.0	ug/L	90.6	75-125			
m+p-Xylenes	89.1 ug/L	2	ug/L	100	ug/L	89.1	75-130			
Methylene chloride	46.6 ug/L	4	ug/L	50.0	ug/L	93.2	55-140			
Methyl-t-butyl ether (MTBE)	47.4 ug/L	1	ug/L	50.0	ug/L	94.8	65-125			
Naphthalene	41.5 ug/L	1	ug/L	50.0	ug/L	82.9	55-140			
n-Butylbenzene	44.3 ug/L	1	ug/L	50.0	ug/L	88.7	70-135			
n-Propylbenzene	43.7 ug/L	1	ug/L	50.0	ug/L	87.4	70-130			
o-Xylene	42.8 ug/L	1	ug/L	50.0	ug/L	85.5	80-120			
sec-Butylbenzene	43.1 ug/L	1	ug/L	50.0	ug/L	86.2	70-125			
Styrene	45.6 ug/L	1	ug/L	50.0	ug/L	91.3	65-135			
tert-Butylbenzene	44.3 ug/L	1	ug/L	50.0	ug/L	88.6	70-130			
Tetrachloroethylene (PCE)	61.1 ug/L	1	ug/L	50.0	ug/L	122	45-150			
Toluene	47.9 ug/L	1	ug/L	50.0	ug/L	95.7	75-120			
trans-1,2-Dichloroethylene	46.8 ug/L	1	ug/L	50.0	ug/L	93.6	60-140			
trans-1,3-Dichloropropene	48.6 ug/L	1	ug/L	50.0	ug/L	97.2	55-140			
Trichloroethylene	48.3 ug/L	1	ug/L	50.0	ug/L	96.6	70-125			
Trichlorofluoromethane	40.3 ug/L	1	ug/L	50.0	ug/L	80.5	60-145			
Vinyl chloride	37.9 ug/L	0.5	ug/L	50.0	ug/L	75.8	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	45.7		ug/L	50.0	ug/L	91.5	70-120			
Surr: 4-Bromofluorobenzene (Surr)	50.7		ug/L	50.0	ug/L	101	75-120			
Surr: Dibromofluoromethane (Surr)	46.1		ug/L	50.0	ug/L	92.2	80-119			
Surr: Toluene-d8 (Surr)	49.9		ug/L	50.0	ug/L	99.8	85-120			
Matrix Spike (BAI0770-MS1)		**Source: 17I0765-08**		Prepared & Analyzed: 09/27/2017						
1,1,1,2-Tetrachloroethane	48.6 ug/L	0.4	ug/L	50.0	<0.4 ug/L	97.2	80-130			
1,1,1-Trichloroethane	48.8 ug/L	1	ug/L	50.0	<1 ug/L	97.6	65-130			
1,1,2,2-Tetrachloroethane	46.4 ug/L	0.4	ug/L	50.0	<0.4 ug/L	92.7	65-130			
1,1,2-Trichloroethane	56.1 ug/L	1	ug/L	50.0	<1 ug/L	112	75-125			
1,1-Dichloroethane	54.7 ug/L	1	ug/L	50.0	<1 ug/L	109	70-135			
1,1-Dichloroethylene	46.9 ug/L	1	ug/L	50.0	<1 ug/L	93.7	70-130			
1,1-Dichloropropene	47.6 ug/L	1	ug/L	50.0	<1 ug/L	95.1	75-135			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
Matrix Spike (BAI0770-MS1)		**Source: 17I0765-08**		Prepared & Analyzed: 09/27/2017						
1,2,3-Trichlorobenzene	45.0 ug/L	1	ug/L	50.0	<1 ug/L	89.9	55-140			
1,2,3-Trichloropropane	48.6 ug/L	1	ug/L	50.0	<1 ug/L	97.1	75-125			
1,2,4-Trichlorobenzene	42.1 ug/L	1	ug/L	50.0	<1 ug/L	84.2	65-135			
1,2,4-Trimethylbenzene	43.9 ug/L	1	ug/L	50.0	<1 ug/L	87.7	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	44.1 ug/L	4	ug/L	50.0	<4 ug/L	88.3	50-130			
1,2-Dibromoethane (EDB)	48.3 ug/L	1	ug/L	50.0	<1 ug/L	96.7	80-120			
1,2-Dichlorobenzene	44.8 ug/L	1	ug/L	50.0	<1 ug/L	89.5	70-120			
1,2-Dichloroethane	49.9 ug/L	1	ug/L	50.0	<1 ug/L	99.8	70-130			
1,2-Dichloropropane	53.2 ug/L	1	ug/L	50.0	<1 ug/L	106	75-125			
1,3,5-Trimethylbenzene	45.1 ug/L	1	ug/L	50.0	<1 ug/L	90.1	75-125			
1,3-Dichlorobenzene	44.9 ug/L	1	ug/L	50.0	<1 ug/L	89.8	75-125			
1,3-Dichloropropane	54.4 ug/L	1	ug/L	50.0	<1 ug/L	109	75-125			
1,4-Dichlorobenzene	43.4 ug/L	1	ug/L	50.0	<1 ug/L	86.8	75-125			
2,2-Dichloropropane	48.0 ug/L	2	ug/L	50.0	<2 ug/L	96.0	70-135			
2-Butanone (MEK)	49.7 ug/L	10	ug/L	50.0	<10 ug/L	99.5	30-150			
2-Chlorotoluene	46.4 ug/L	1	ug/L	50.0	<1 ug/L	92.8	75-125			
2-Hexanone (MBK)	47.7 ug/L	5	ug/L	50.0	<5 ug/L	95.3	55-130			
4-Chlorotoluene	43.8 ug/L	1	ug/L	50.0	<1 ug/L	87.5	75-130			
4-Isopropyltoluene	43.7 ug/L	1	ug/L	50.0	<1 ug/L	87.4	75-130			
4-Methyl-2-pentanone (MIBK)	50.2 ug/L	5	ug/L	50.0	<5 ug/L	100	60-135			
Acetone	47.8 ug/L	10	ug/L	50.0	<10 ug/L	85.1	40-140			
Benzene	52.5 ug/L	1	ug/L	50.0	<1 ug/L	105	80-120			
Bromobenzene	45.7 ug/L	1	ug/L	50.0	<1 ug/L	91.4	75-125			
Bromochloromethane	50.8 ug/L	1	ug/L	50.0	<1 ug/L	102	65-130			
Bromodichloromethane	52.6 ug/L	0.5	ug/L	50.0	<0.5 ug/L	105	75-120			
Bromoform	49.1 ug/L	1	ug/L	50.0	<1 ug/L	98.3	70-130			
Bromomethane	47.0 ug/L	1	ug/L	50.0	<1 ug/L	94.0	30-145			
Carbon disulfide	37.3 ug/L	10	ug/L	50.0	<10 ug/L	74.7	35-160			
Carbon tetrachloride	51.5 ug/L	1	ug/L	50.0	<1 ug/L	103	65-140			
Chlorobenzene	46.1 ug/L	1	ug/L	50.0	<1 ug/L	92.1	80-120			
Chloroethane	45.2 ug/L	1	ug/L	50.0	<1 ug/L	90.4	60-135			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
Matrix Spike (BAI0770-MS1)		**Source: 17I0765-08**		Prepared & Analyzed: 09/27/2017						
Chloroform	48.3 ug/L	0.5	ug/L	50.0	<0.5 ug/L	96.5	65-135			
Chloromethane	41.1 ug/L	1	ug/L	50.0	<1 ug/L	82.1	40-125			
cis-1,2-Dichloroethylene	48.3 ug/L	1	ug/L	50.0	<1 ug/L	96.5	70-125			
cis-1,3-Dichloropropene	53.0 ug/L	1	ug/L	50.0	<1 ug/L	106	70-130			
Dibromochloromethane	55.0 ug/L	1	ug/L	50.0	<1 ug/L	110	60-135			
Dibromomethane	54.5 ug/L	1	ug/L	50.0	<1 ug/L	109	75-125			
Dichlorodifluoromethane	36.0 ug/L	1	ug/L	50.0	<1 ug/L	72.0	30-155			
Ethylbenzene	44.8 ug/L	1	ug/L	50.0	<1 ug/L	89.5	75-125			
Hexachlorobutadiene	44.2 ug/L	1	ug/L	50.0	<1 ug/L	88.4	50-140			
Isopropylbenzene	47.8 ug/L	1	ug/L	50.0	<1 ug/L	95.6	75-125			
m+p-Xylenes	95.2 ug/L	2	ug/L	100	<2 ug/L	95.2	75-130			
Methylene chloride	50.2 ug/L	4	ug/L	50.0	<4 ug/L	94.3	55-140			
Methyl-t-butyl ether (MTBE)	51.6 ug/L	1	ug/L	50.0	<1 ug/L	103	65-125			
Naphthalene	44.8 ug/L	1	ug/L	50.0	<1 ug/L	89.5	55-140			
n-Butylbenzene	45.3 ug/L	1	ug/L	50.0	<1 ug/L	90.6	70-135			
n-Propylbenzene	44.6 ug/L	1	ug/L	50.0	<1 ug/L	89.1	70-130			
o-Xylene	46.3 ug/L	1	ug/L	50.0	<1 ug/L	92.6	80-120			
sec-Butylbenzene	44.9 ug/L	1	ug/L	50.0	<1 ug/L	89.8	70-125			
Styrene	47.7 ug/L	1	ug/L	50.0	<1 ug/L	95.5	65-135			
tert-Butylbenzene	46.4 ug/L	1	ug/L	50.0	<1 ug/L	92.9	70-130			
Tetrachloroethylene (PCE)	62.8 ug/L	1	ug/L	50.0	<1 ug/L	126	45-150			
Toluene	52.4 ug/L	1	ug/L	50.0	<1 ug/L	105	75-120			
trans-1,2-Dichloroethylene	47.7 ug/L	1	ug/L	50.0	<1 ug/L	95.4	60-140			
trans-1,3-Dichloropropene	53.1 ug/L	1	ug/L	50.0	<1 ug/L	106	55-140			
Trichloroethylene	51.0 ug/L	1	ug/L	50.0	<1 ug/L	102	70-125			
Trichlorofluoromethane	41.5 ug/L	1	ug/L	50.0	<1 ug/L	83.0	60-145			
Vinyl chloride	41.2 ug/L	0.5	ug/L	50.0	<0.5 ug/L	82.5	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	45.7		ug/L	50.0	ug/L	91.4	70-120			
Surr: 4-Bromofluorobenzene (Surr)	50.5		ug/L	50.0	ug/L	101	75-120			
Surr: Dibromofluoromethane (Surr)	45.1		ug/L	50.0	ug/L	90.2	80-119			
Surr: Toluene-d8 (Surr)	51.2		ug/L	50.0	ug/L	102	85-120			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
Matrix Spike Dup (BAI0770-MSD1)		**Source: 17I0765-08**		Prepared & Analyzed: 09/27/2017						
1,1,1,2-Tetrachloroethane	49.3 ug/L	0.4	ug/L	50.0	<0.4 ug/L	98.6	80-130	1.42	30	
1,1,1-Trichloroethane	51.5 ug/L	1	ug/L	50.0	<1 ug/L	103	65-130	5.30	30	
1,1,2,2-Tetrachloroethane	48.3 ug/L	0.4	ug/L	50.0	<0.4 ug/L	96.6	65-130	4.08	30	
1,1,2-Trichloroethane	56.7 ug/L	1	ug/L	50.0	<1 ug/L	113	75-125	1.04	30	
1,1-Dichloroethane	55.6 ug/L	1	ug/L	50.0	<1 ug/L	111	70-135	1.63	30	
1,1-Dichloroethylene	50.2 ug/L	1	ug/L	50.0	<1 ug/L	100	70-130	6.97	30	
1,1-Dichloropropene	52.1 ug/L	1	ug/L	50.0	<1 ug/L	104	75-135	9.10	30	
1,2,3-Trichlorobenzene	46.1 ug/L	1	ug/L	50.0	<1 ug/L	92.3	55-140	2.59	30	
1,2,3-Trichloropropane	49.3 ug/L	1	ug/L	50.0	<1 ug/L	98.7	75-125	1.63	30	
1,2,4-Trichlorobenzene	44.1 ug/L	1	ug/L	50.0	<1 ug/L	88.3	65-135	4.73	30	
1,2,4-Trimethylbenzene	45.3 ug/L	1	ug/L	50.0	<1 ug/L	90.7	75-130	3.33	30	
1,2-Dibromo-3-chloropropane (DBCP)	45.8 ug/L	4	ug/L	50.0	<4 ug/L	91.6	50-130	3.69	30	
1,2-Dibromoethane (EDB)	50.1 ug/L	1	ug/L	50.0	<1 ug/L	100	80-120	3.64	30	
1,2-Dichlorobenzene	46.6 ug/L	1	ug/L	50.0	<1 ug/L	93.1	70-120	3.99	30	
1,2-Dichloroethane	52.6 ug/L	1	ug/L	50.0	<1 ug/L	105	70-130	5.18	30	
1,2-Dichloropropane	54.1 ug/L	1	ug/L	50.0	<1 ug/L	108	75-125	1.53	30	
1,3,5-Trimethylbenzene	45.8 ug/L	1	ug/L	50.0	<1 ug/L	91.6	75-125	1.66	30	
1,3-Dichlorobenzene	46.3 ug/L	1	ug/L	50.0	<1 ug/L	92.5	75-125	3.01	30	
1,3-Dichloropropane	55.7 ug/L	1	ug/L	50.0	<1 ug/L	111	75-125	2.40	30	
1,4-Dichlorobenzene	45.6 ug/L	1	ug/L	50.0	<1 ug/L	91.2	75-125	4.89	30	
2,2-Dichloropropane	50.4 ug/L	2	ug/L	50.0	<2 ug/L	101	70-135	4.88	30	
2-Butanone (MEK)	52.3 ug/L	10	ug/L	50.0	<10 ug/L	105	30-150	5.00	30	
2-Chlorotoluene	47.5 ug/L	1	ug/L	50.0	<1 ug/L	95.0	75-125	2.39	30	
2-Hexanone (MBK)	48.0 ug/L	5	ug/L	50.0	<5 ug/L	96.0	55-130	0.746	30	
4-Chlorotoluene	44.6 ug/L	1	ug/L	50.0	<1 ug/L	89.2	75-130	1.87	30	
4-Isopropyltoluene	44.8 ug/L	1	ug/L	50.0	<1 ug/L	89.7	75-130	2.58	30	
4-Methyl-2-pentanone (MIBK)	51.0 ug/L	5	ug/L	50.0	<5 ug/L	102	60-135	1.60	30	
Acetone	<10 ug/L	10	ug/L	50.0	<10 ug/L	-10.5	40-140	200	30	
Benzene	53.5 ug/L	1	ug/L	50.0	<1 ug/L	107	80-120	1.82	30	
Bromobenzene	47.8 ug/L	1	ug/L	50.0	<1 ug/L	95.6	75-125	4.47	30	
Bromochloromethane	54.5 ug/L	1	ug/L	50.0	<1 ug/L	109	65-130	7.04	30	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
Matrix Spike Dup (BAI0770-MSD1)		**Source: 17I0765-08**		Prepared & Analyzed: 09/27/2017						
Bromodichloromethane	55.6 ug/L	0.5	ug/L	50.0	<0.5 ug/L	111	75-120	5.55	30	
Bromoform	50.8 ug/L	1	ug/L	50.0	<1 ug/L	102	70-130	3.28	30	
Bromomethane	49.5 ug/L	1	ug/L	50.0	<1 ug/L	99.0	30-145	5.22	30	
Carbon disulfide	40.3 ug/L	10	ug/L	50.0	<10 ug/L	80.7	35-160	7.68	30	
Carbon tetrachloride	52.4 ug/L	1	ug/L	50.0	<1 ug/L	105	65-140	1.86	30	
Chlorobenzene	47.3 ug/L	1	ug/L	50.0	<1 ug/L	94.6	80-120	2.60	30	
Chloroethane	47.8 ug/L	1	ug/L	50.0	<1 ug/L	95.6	60-135	5.59	30	
Chloroform	50.3 ug/L	0.5	ug/L	50.0	<0.5 ug/L	101	65-135	4.20	30	
Chloromethane	42.2 ug/L	1	ug/L	50.0	<1 ug/L	84.3	40-125	2.61	30	
cis-1,2-Dichloroethylene	50.6 ug/L	1	ug/L	50.0	<1 ug/L	101	70-125	4.83	30	
cis-1,3-Dichloropropene	53.9 ug/L	1	ug/L	50.0	<1 ug/L	108	70-130	1.61	30	
Dibromochloromethane	54.8 ug/L	1	ug/L	50.0	<1 ug/L	110	60-135	0.505	30	
Dibromomethane	55.7 ug/L	1	ug/L	50.0	<1 ug/L	111	75-125	2.24	30	
Dichlorodifluoromethane	38.5 ug/L	1	ug/L	50.0	<1 ug/L	77.0	30-155	6.71	30	
Ethylbenzene	46.5 ug/L	1	ug/L	50.0	<1 ug/L	92.9	75-125	3.70	30	
Hexachlorobutadiene	45.1 ug/L	1	ug/L	50.0	<1 ug/L	90.2	50-140	2.10	30	
Isopropylbenzene	49.0 ug/L	1	ug/L	50.0	<1 ug/L	98.0	75-125	2.46	30	
m+p-Xylenes	96.7 ug/L	2	ug/L	100	<2 ug/L	96.7	75-130	1.55	30	
Methylene chloride	52.9 ug/L	4	ug/L	50.0	<4 ug/L	99.7	55-140	5.20	30	
Methyl-t-butyl ether (MTBE)	55.1 ug/L	1	ug/L	50.0	<1 ug/L	110	65-125	6.57	30	
Naphthalene	48.1 ug/L	1	ug/L	50.0	<1 ug/L	96.3	55-140	7.25	30	
n-Butylbenzene	46.7 ug/L	1	ug/L	50.0	<1 ug/L	93.3	70-135	3.00	30	
n-Propylbenzene	45.7 ug/L	1	ug/L	50.0	<1 ug/L	91.4	70-130	2.50	30	
o-Xylene	47.7 ug/L	1	ug/L	50.0	<1 ug/L	95.4	80-120	2.98	30	
sec-Butylbenzene	46.5 ug/L	1	ug/L	50.0	<1 ug/L	93.0	70-125	3.56	30	
Styrene	49.7 ug/L	1	ug/L	50.0	<1 ug/L	99.4	65-135	3.99	30	
tert-Butylbenzene	47.2 ug/L	1	ug/L	50.0	<1 ug/L	94.5	70-130	1.70	30	
Tetrachloroethylene (PCE)	64.2 ug/L	1	ug/L	50.0	<1 ug/L	128	45-150	2.18	30	
Toluene	53.0 ug/L	1	ug/L	50.0	<1 ug/L	106	75-120	1.19	30	
trans-1,2-Dichloroethylene	50.8 ug/L	1	ug/L	50.0	<1 ug/L	102	60-140	6.36	30	
trans-1,3-Dichloropropene	55.5 ug/L	1	ug/L	50.0	<1 ug/L	111	55-140	4.42	30	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
Matrix Spike Dup (BAI0770-MSD1)	**Source: 17I0765-08**		Prepared & Analyzed: 09/27/2017							
Trichloroethylene	52.5 ug/L	1	ug/L	50.0	<1 ug/L	105	70-125	3.03	30	
Trichlorofluoromethane	44.4 ug/L	1	ug/L	50.0	<1 ug/L	88.8	60-145	6.71	30	
Vinyl chloride	43.4 ug/L	0.5	ug/L	50.0	<0.5 ug/L	86.9	50-145	5.18	30	
Surr: 1,2-Dichloroethane-d4 (Surr)	46.5		ug/L	50.0	ug/L	93.1	70-120			
Surr: 4-Bromofluorobenzene (Surr)	51.1		ug/L	50.0	ug/L	102	75-120			
Surr: Dibromofluoromethane (Surr)	47.2		ug/L	50.0	ug/L	94.3	80-119			
Surr: Toluene-d8 (Surr)	50.6		ug/L	50.0	ug/L	101	85-120			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Micro-extractables by GC/ECD - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0018 - SW8011										
Blank (BAJ0018-BLK1)				Prepared & Analyzed: 10/02/2017						
1,2-Dibromoethane (EDB)	<0.010 ug/L	0.010	ug/L							
LCS (BAJ0018-BS1)				Prepared & Analyzed: 10/02/2017						
1,2-Dibromoethane (EDB)	0.268 ug/L	0.010	ug/L	0.250 ug/L		107	65-135			
LCS Dup (BAJ0018-BSD1)				Prepared & Analyzed: 10/02/2017						
1,2-Dibromoethane (EDB)	0.277 ug/L	0.010	ug/L	0.250 ug/L		111	65-135	3.51	20	
Duplicate (BAJ0018-DUP1)		**Source: 17I0855-01**		Prepared: 10/02/2017 Analyzed: 10/03/2017						
1,2-Dibromoethane (EDB)	<0.010 ug/L	0.010	ug/L		<0.010 ug/L			NA	20	
Matrix Spike (BAJ0018-MS1)		**Source: 17I0855-03**		Prepared: 10/02/2017 Analyzed: 10/03/2017						
1,2-Dibromoethane (EDB)	0.196 ug/L	0.010	ug/L	0.246	<0.010 ug/L	79.6	65-135			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
SW8011 in Non-Potable Water	
1,2-Dibromoethane (EDB)	VELAP,NC
SW8260B in Non-Potable Water	
1,1,1,2-Tetrachloroethane	NC,VELAP,WVDEP
1,1,1-Trichloroethane	NC,VELAP,WVDEP
1,1,2,2-Tetrachloroethane	NC,VELAP,WVDEP
1,1,2-Trichloroethane	NC,VELAP,WVDEP
1,1-Dichloroethane	NC,VELAP,WVDEP
1,1-Dichloroethylene	NC,VELAP,WVDEP
1,1-Dichloropropene	NC,VELAP,WVDEP
1,2,3-Trichlorobenzene	NC,VELAP,WVDEP
1,2,3-Trichloropropane	NC,VELAP,WVDEP
1,2,4-Trichlorobenzene	NC,VELAP,WVDEP
1,2,4-Trimethylbenzene	NC,VELAP,WVDEP
1,2-Dibromo-3-chloropropane (DBCP)	NC,VELAP,WVDEP
1,2-Dibromoethane (EDB)	NC,VELAP,WVDEP
1,2-Dichlorobenzene	NC,VELAP,WVDEP
1,2-Dichloroethane	NC,VELAP,WVDEP
1,2-Dichloropropane	NC,VELAP,WVDEP
1,3,5-Trimethylbenzene	NC,WVDEP
1,3-Dichlorobenzene	NC,VELAP,WVDEP
1,3-Dichloropropane	NC,VELAP,WVDEP
1,4-Dichlorobenzene	NC,VELAP,WVDEP
2,2-Dichloropropane	NC,VELAP,WVDEP
2-Butanone (MEK)	NC,VELAP,WVDEP
2-Chlorotoluene	NC,VELAP,WVDEP
2-Hexanone (MBK)	NC,VELAP,WVDEP
4-Chlorotoluene	NC,VELAP,WVDEP
4-Isopropyltoluene	NC,VELAP,WVDEP
4-Methyl-2-pentanone (MIBK)	NC,VELAP,WVDEP
Acetone	NC,VELAP,WVDEP
Benzene	NC,VELAP,WVDEP
Bromobenzene	NC,VELAP,WVDEP
Bromochloromethane	NC,VELAP,WVDEP
Bromodichloromethane	NC,VELAP,WVDEP
Bromoform	NC,VELAP,WVDEP
Bromomethane	NC,VELAP,WVDEP

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
Carbon disulfide	NC,VELAP,WVDEP
Carbon tetrachloride	NC,VELAP,WVDEP
Chlorobenzene	NC,VELAP,WVDEP
Chloroethane	NC,VELAP,WVDEP
Chloroform	NC,VELAP,WVDEP
Chloromethane	NC,VELAP,WVDEP
cis-1,2-Dichloroethylene	NC,VELAP,WVDEP
cis-1,3-Dichloropropene	NC,VELAP,WVDEP
Dibromochloromethane	NC,VELAP,WVDEP
Dibromomethane	NC,VELAP,WVDEP
Dichlorodifluoromethane	NC,VELAP,WVDEP
Di-isopropyl ether (DIPE)	NC,VELAP,WVDEP
Ethylbenzene	NC,VELAP,WVDEP
Hexachlorobutadiene	NC,VELAP,WVDEP
Iodomethane	NC,VELAP,WVDEP
Isopropylbenzene	NC,VELAP,WVDEP
m+p-Xylenes	NC,VELAP,WVDEP
Methylene chloride	NC,VELAP,WVDEP
Methyl-t-butyl ether (MTBE)	NC,VELAP,WVDEP
Naphthalene	NC,VELAP,WVDEP
n-Butylbenzene	NC,VELAP,WVDEP
n-Propylbenzene	NC,VELAP,WVDEP
o-Xylene	NC,VELAP,WVDEP
sec-Butylbenzene	NC,VELAP,WVDEP
Styrene	NC,VELAP,WVDEP
TAA	NC,VELAP,WVDEP
TBA	NC,VELAP,WVDEP
tert-Butylbenzene	NC,VELAP,WVDEP
Tetrachloroethylene (PCE)	NC,VELAP,WVDEP
Toluene	NC,VELAP,WVDEP
trans-1,2-Dichloroethylene	NC,VELAP,WVDEP
trans-1,3-Dichloropropene	NC,VELAP,WVDEP
Trichloroethylene	NC,VELAP,WVDEP
Trichlorofluoromethane	NC,VELAP,WVDEP
Vinyl acetate	NC,VELAP,WVDEP
Vinyl chloride	NC,VELAP,WVDEP
Xylenes, Total	NC,VELAP,WVDEP

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Code	Description	Lab Number	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2017
NC	North Carolina DENR	495	12/31/2017
PADEP	NELAC-Pennsylvania	001	10/31/2017
VELAP	NELAC-Virginia Certificate #9439	460021	06/14/2018
WVDEP	West Virginia DEP	350	11/30/2017

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:37
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Summary of Data Qualifiers

Cl	Residual Chlorine or other oxidizing agent was detected in the container used to analyze this sample.
RPD	Relative Percent Difference
Qual	Qualifers
-RE	Denotes sample was re-analyzed
D.F.	Dilution Factor. Please also see the Preparation Factor in the Analysis Summary section.
TIC	Tentatively Identified Compounds are compounds that are identified by comparing the analyte mass spectral pattern with the NIST spectral library . A TIC spectral match is reported when the pattern is at least 75% consistent with the published pattern. Compound concentrations are estimated and are calculated using an internal standard response factor of 1.
PCBs, Total	Total PCBs are defined as the sum of detected Aroclors 1016, 1221, 1232, 1248, 1254, 1260, 1262, and 1268.

APEX

Apex Companies, LLC
203 Wylderose Court
Midlothian, VA 23113
(804) 897-2718

CHAIN OF CUSTODY RECORD

JOB NO.: 757004-001
JOB NAME: Old Oaks Neighborhood
PROJECT MANAGER: Mark Ryland
SAMPLER(S): (Signature(s)) [signature]
(Printed): Mark Ryland
TURN – AROUND TIME: STD

SAMPLE ID	DATE	TIME	COMP.	GRAB	MATRIX	PRES.	STATION / LOCATION	NO. OF CONTAINERS	VOCs 8260	EDB 8011								REMARKS
92517001-1	8/9/17	13:00		X	W	4°C/HCl	Trip Blank			X								
92517001-2	6/29/17	13:40		X	W	4°C/HCl	Trip Blank		X									
92517001-3	9/25/17	11:10		X	W	4°C/HCl	FB 1327 Cardwell	5	X	X								
92517001-4	9/25/17	11:40		X	W	4°C/HCl	FB 1241 Cardwell	5	X	X								
92517001-5	9/25/17	12:20		X	W	4°C/HCl	FB 1518 Old Oaks	5	X	X								
92517001-6	9/25/17	11:05		X	W	4°C/HCl	1327 Cardwell	5	X	X								
92517001-7	9/25/17	11:35		X	W	4°C/HCl	1241 Cardwell	5	X	X								
92517001-8	9/25/17	12:15		X	W	4°C/HCl	1518 Old Oaks	5	X	X								
							TOTALS	35										

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
① [signature]	9/26/17 1300	② [signature]	③ [signature]	9/26/17 1346	④ [signature] 26 Sept 2017 13:46
(Printed) Mark Ryland		(Printed) Trey Ousterhout	(Printed) Trey Ousterhout		(Printed) TARRAL MIDDLETON
Relinquished by: (Signature) ⑤ 0.3°C NO SEAL ON ICE			Remarks: DEQ State Lead		
(Printed)					

APEX-Richmond 17I0765
Old Oaks Neighborhood
Recd: 09/26/2017 Due: 10/03/2017

Distribution: WHITE => original (accompanies samples; [illegible]pler's copy

v130325002

1 of 1 pages

1941 Reymet Road ● Richmond, Virginia 23237 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 17I0766

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian, VA 23113	Date Received:	September 26, 2017 13:46
		Date Issued:	October 23, 2017 15:51
		Project Number:	757004-001
Submitted To:	Mark Ryland	Purchase Order:	
Client Site I.D.:	Old Oaks Neighborhood		

Enclosed are the results of analyses for samples received by the laboratory on 09/26/2017 13:46. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

Ted Soyars

Ted Soyars
Laboratory Manager

End Notes:

The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

This report shall not be reproduced except in full without the expressed and written approval of an authorized representative of Air Water & Soil Laboratories, Inc.

Accredited in Accordance with nelac
Commonwealth of Virginia, DCLS
Accreditation # 460021

NWBOC EDWOSB Certified

Certified SWaM Small, Women and Minority-Owned
Supplier Diversity Strengthens the Commonwealth
by the Virginia Department of Minority Business Enterprise

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

ANALYTICAL REPORT FOR SAMPLES

Laboratory Order ID 17I0766

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
92617001-1 Trip Blank	17I0766-01	Ground Water	08/09/2017 13:00	09/26/2017 13:46
92617001-2 Trip Blank	17I0766-02	Ground Water	06/29/2017 13:40	09/26/2017 13:46
92617001-3 1490 Old Oaks	17I0766-03	Ground Water	09/26/2017 09:20	09/26/2017 13:46
92617001-4 1490 Old Oaks FB	17I0766-04	Ground Water	09/26/2017 09:09	09/26/2017 13:46
92617001-5 1463 Old Oaks	17I0766-05	Ground Water	09/26/2017 09:48	09/26/2017 13:46
92617001-6 1463 Old Oaks FB	17I0766-06	Ground Water	09/26/2017 09:43	09/26/2017 13:46
92617001-7 1548 River Road West	17I0766-07	Ground Water	09/26/2017 10:12	09/26/2017 13:46
92617001-8 1548 River Road West FB	17I0766-08	Ground Water	09/26/2017 10:06	09/26/2017 13:46
92617001-9 991 Briesmaster Way	17I0766-09	Ground Water	09/26/2017 10:37	09/26/2017 13:46
92617001-10 991 Briesmaster Way FB	17I0766-10	Ground Water	09/26/2017 10:32	09/26/2017 13:46

This Certificate of Analysis is being reissued on October 23, 2017 to include data for TBA and TAA per client request.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-1 Trip Blank **Laboratory Sample ID:** 17I0766-01

Grab Date/Time: 08/09/2017 13:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	01	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/02/17 21:18	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-2 Trip Blank **Laboratory Sample ID:** 17I0766-02

Grab Date/Time: 06/29/2017 13:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	02	SW8260B	<0.40 ug/L		0.40	1	09/27/17 12:10	09/27/17 12:10	JDW
1,1,1-Trichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,1,2,2-Tetrachloroethane	02	SW8260B	<0.40 ug/L		0.40	1	09/27/17 12:10	09/27/17 12:10	JDW
1,1,2-Trichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,1-Dichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,1-Dichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,1-Dichloropropene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,2,3-Trichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,2,3-Trichloropropane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,2,4-Trichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,2,4-Trimethylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,2-Dibromo-3-chloropropane (DBCP)	02	SW8260B	<4.00 ug/L		4.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,2-Dibromoethane (EDB)	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,2-Dichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,2-Dichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,2-Dichloropropane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,3,5-Trimethylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,3-Dichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,3-Dichloropropane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
1,4-Dichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
2,2-Dichloropropane	02	SW8260B	<2.00 ug/L		2.00	1	09/27/17 12:10	09/27/17 12:10	JDW
2-Butanone (MEK)	02	SW8260B	<10.0 ug/L		10.0	1	09/27/17 12:10	09/27/17 12:10	JDW
2-Chlorotoluene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
2-Hexanone (MBK)	02	SW8260B	<5.00 ug/L		5.00	1	09/27/17 12:10	09/27/17 12:10	JDW
4-Chlorotoluene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
4-Isopropyltoluene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-2 Trip Blank **Laboratory Sample ID:** 17I0766-02

Grab Date/Time: 06/29/2017 13:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	02	SW8260B	<5.00 ug/L		5.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Acetone	02	SW8260B	<10.0 ug/L		10.0	1	09/27/17 12:10	09/27/17 12:10	JDW
Benzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Bromobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Bromochloromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Bromodichloromethane	02	SW8260B	<0.50 ug/L		0.50	1	09/27/17 12:10	09/27/17 12:10	JDW
Bromoform	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Bromomethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Carbon disulfide	02	SW8260B	<10.0 ug/L		10.0	1	09/27/17 12:10	09/27/17 12:10	JDW
Carbon tetrachloride	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Chlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Chloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Chloroform	02	SW8260B	<0.50 ug/L		0.50	1	09/27/17 12:10	09/27/17 12:10	JDW
Chloromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
cis-1,2-Dichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
cis-1,3-Dichloropropene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Dibromochloromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Dibromomethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Dichlorodifluoromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Di-isopropyl ether (DIPE)	02	SW8260B	<5.00 ug/L		5.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Ethylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Hexachlorobutadiene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Iodomethane	02	SW8260B	<10.0 ug/L		10.0	1	09/27/17 12:10	09/27/17 12:10	JDW
Isopropylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
m+p-Xylenes	02	SW8260B	<2.00 ug/L		2.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Methylene chloride	02	SW8260B	<4.00 ug/L		4.00	1	09/27/17 12:10	09/27/17 12:10	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-2 Trip Blank **Laboratory Sample ID:** 17I0766-02

Grab Date/Time: 06/29/2017 13:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Naphthalene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
n-Butylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
n-Propylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
o-Xylene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
sec-Butylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Styrene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
TAA	02	SW8260B	<25.0 ug/L		25.0	1	09/27/17 12:10	09/27/17 12:10	JDW
TBA	02	SW8260B	<100 ug/L		100	1	09/27/17 12:10	09/27/17 12:10	JDW
tert-Butylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Tetrachloroethylene (PCE)	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Toluene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
trans-1,2-Dichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
trans-1,3-Dichloropropene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Trichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Trichlorofluoromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Vinyl acetate	02	SW8260B	<10.0 ug/L		10.0	1	09/27/17 12:10	09/27/17 12:10	JDW
Vinyl chloride	02	SW8260B	<0.50 ug/L		0.50	1	09/27/17 12:10	09/27/17 12:10	JDW
Xylenes, Total	02	SW8260B	<3.00 ug/L		3.00	1	09/27/17 12:10	09/27/17 12:10	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*02*	*SW8260B*	*90.6 %*		*70-120*		*09/27/17 12:10*	*09/27/17 12:10*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*02*	*SW8260B*	*100 %*		*75-120*		*09/27/17 12:10*	*09/27/17 12:10*	*JDW*
Surr: Dibromofluoromethane (Surr)	*02*	*SW8260B*	*92.7 %*		*80-119*		*09/27/17 12:10*	*09/27/17 12:10*	*JDW*
Surr: Toluene-d8 (Surr)	*02*	*SW8260B*	*103 %*		*85-120*		*09/27/17 12:10*	*09/27/17 12:10*	*JDW*

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-3 1490 Old Oaks **Laboratory Sample ID:** 17I0766-03

Grab Date/Time: 09/26/2017 09:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	03	SW8260B	<0.40 ug/L		0.40	1	09/27/17 16:51	09/27/17 16:51	JDW
1,1,1-Trichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,1,2,2-Tetrachloroethane	03	SW8260B	<0.40 ug/L		0.40	1	09/27/17 16:51	09/27/17 16:51	JDW
1,1,2-Trichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,1-Dichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,1-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,1-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,2,3-Trichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,2,3-Trichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,2,4-Trichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,2,4-Trimethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,2-Dibromo-3-chloropropane (DBCP)	03	SW8260B	<4.00 ug/L		4.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,2-Dibromoethane (EDB)	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,2-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,2-Dichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,2-Dichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,3,5-Trimethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,3-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,3-Dichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
1,4-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
2,2-Dichloropropane	03	SW8260B	<2.00 ug/L		2.00	1	09/27/17 16:51	09/27/17 16:51	JDW
2-Butanone (MEK)	03	SW8260B	<10.0 ug/L		10.0	1	09/27/17 16:51	09/27/17 16:51	JDW
2-Chlorotoluene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
2-Hexanone (MBK)	03	SW8260B	<5.00 ug/L		5.00	1	09/27/17 16:51	09/27/17 16:51	JDW
4-Chlorotoluene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
4-Isopropyltoluene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-3 1490 Old Oaks **Laboratory Sample ID:** 17I0766-03

Grab Date/Time: 09/26/2017 09:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	03	SW8260B	<5.00 ug/L		5.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Acetone	03	SW8260B	<10.0 ug/L		10.0	1	09/27/17 16:51	09/27/17 16:51	JDW
Benzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Bromobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Bromochloromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Bromodichloromethane	03	SW8260B	<0.50 ug/L		0.50	1	09/27/17 16:51	09/27/17 16:51	JDW
Bromoform	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Bromomethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Carbon disulfide	03	SW8260B	<10.0 ug/L		10.0	1	09/27/17 16:51	09/27/17 16:51	JDW
Carbon tetrachloride	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Chlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Chloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Chloroform	03	SW8260B	<0.50 ug/L		0.50	1	09/27/17 16:51	09/27/17 16:51	JDW
Chloromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
cis-1,2-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
cis-1,3-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Dibromochloromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Dibromomethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Dichlorodifluoromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Di-isopropyl ether (DIPE)	03	SW8260B	<5.00 ug/L		5.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Ethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Hexachlorobutadiene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Iodomethane	03	SW8260B	<10.0 ug/L		10.0	1	09/27/17 16:51	09/27/17 16:51	JDW
Isopropylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
m+p-Xylenes	03	SW8260B	<2.00 ug/L		2.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Methylene chloride	03	SW8260B	<4.00 ug/L		4.00	1	09/27/17 16:51	09/27/17 16:51	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-3 1490 Old Oaks **Laboratory Sample ID:** 17I0766-03

Grab Date/Time: 09/26/2017 09:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	03	SW8260B	**1.38 ug/L**		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Naphthalene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
n-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
n-Propylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
o-Xylene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
sec-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Styrene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
TAA	03	SW8260B	<25.0 ug/L		25.0	1	09/27/17 16:51	09/27/17 16:51	JDW
TBA	03	SW8260B	<100 ug/L		100	1	09/27/17 16:51	09/27/17 16:51	JDW
tert-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Tetrachloroethylene (PCE)	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Toluene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
trans-1,2-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
trans-1,3-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Trichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Trichlorofluoromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Vinyl acetate	03	SW8260B	<10.0 ug/L		10.0	1	09/27/17 16:51	09/27/17 16:51	JDW
Vinyl chloride	03	SW8260B	<0.50 ug/L		0.50	1	09/27/17 16:51	09/27/17 16:51	JDW
Xylenes, Total	03	SW8260B	<3.00 ug/L		3.00	1	09/27/17 16:51	09/27/17 16:51	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*03*	*SW8260B*	*94.3 %*		*70-120*		*09/27/17 16:51*	*09/27/17 16:51*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*03*	*SW8260B*	*99.3 %*		*75-120*		*09/27/17 16:51*	*09/27/17 16:51*	*JDW*
Surr: Dibromofluoromethane (Surr)	*03*	*SW8260B*	*95.9 %*		*80-119*		*09/27/17 16:51*	*09/27/17 16:51*	*JDW*
Surr: Toluene-d8 (Surr)	*03*	*SW8260B*	*104 %*		*85-120*		*09/27/17 16:51*	*09/27/17 16:51*	*JDW*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-3 1490 Old Oaks **Laboratory Sample ID:** 17I0766-03

Grab Date/Time: 09/26/2017 09:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	03	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/02/17 21:37	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-4 1490 Old Oaks FB **Laboratory Sample ID:** 17I0766-04

Grab Date/Time: 09/26/2017 09:09

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	04	SW8260B	<0.40 ug/L		0.40	1	09/27/17 12:57	09/27/17 12:57	JDW
1,1,1-Trichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,1,2,2-Tetrachloroethane	04	SW8260B	<0.40 ug/L		0.40	1	09/27/17 12:57	09/27/17 12:57	JDW
1,1,2-Trichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,1-Dichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,1-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,1-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,2,3-Trichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,2,3-Trichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,2,4-Trichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,2,4-Trimethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,2-Dibromo-3-chloropropane (DBCP)	04	SW8260B	<4.00 ug/L		4.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,2-Dibromoethane (EDB)	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,2-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,2-Dichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,2-Dichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,3,5-Trimethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,3-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,3-Dichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
1,4-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
2,2-Dichloropropane	04	SW8260B	<2.00 ug/L		2.00	1	09/27/17 12:57	09/27/17 12:57	JDW
2-Butanone (MEK)	04	SW8260B	<10.0 ug/L		10.0	1	09/27/17 12:57	09/27/17 12:57	JDW
2-Chlorotoluene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
2-Hexanone (MBK)	04	SW8260B	<5.00 ug/L		5.00	1	09/27/17 12:57	09/27/17 12:57	JDW
4-Chlorotoluene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
4-Isopropyltoluene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-4 1490 Old Oaks FB **Laboratory Sample ID:** 17I0766-04

Grab Date/Time: 09/26/2017 09:09

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	04	SW8260B	<5.00 ug/L		5.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Acetone	04	SW8260B	<10.0 ug/L		10.0	1	09/27/17 12:57	09/27/17 12:57	JDW
Benzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Bromobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Bromochloromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Bromodichloromethane	04	SW8260B	<0.50 ug/L		0.50	1	09/27/17 12:57	09/27/17 12:57	JDW
Bromoform	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Bromomethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Carbon disulfide	04	SW8260B	<10.0 ug/L		10.0	1	09/27/17 12:57	09/27/17 12:57	JDW
Carbon tetrachloride	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Chlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Chloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Chloroform	04	SW8260B	<0.50 ug/L		0.50	1	09/27/17 12:57	09/27/17 12:57	JDW
Chloromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
cis-1,2-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
cis-1,3-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Dibromochloromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Dibromomethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Dichlorodifluoromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Di-isopropyl ether (DIPE)	04	SW8260B	<5.00 ug/L		5.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Ethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Hexachlorobutadiene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Iodomethane	04	SW8260B	<10.0 ug/L		10.0	1	09/27/17 12:57	09/27/17 12:57	JDW
Isopropylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
m+p-Xylenes	04	SW8260B	<2.00 ug/L		2.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Methylene chloride	04	SW8260B	<4.00 ug/L		4.00	1	09/27/17 12:57	09/27/17 12:57	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-4 1490 Old Oaks FB **Laboratory Sample ID:** 17I0766-04

Grab Date/Time: 09/26/2017 09:09

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Naphthalene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
n-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
n-Propylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
o-Xylene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
sec-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Styrene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
TAA	04	SW8260B	<25.0 ug/L		25.0	1	09/27/17 12:57	09/27/17 12:57	JDW
TBA	04	SW8260B	<100 ug/L		100	1	09/27/17 12:57	09/27/17 12:57	JDW
tert-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Tetrachloroethylene (PCE)	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Toluene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
trans-1,2-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
trans-1,3-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Trichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Trichlorofluoromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Vinyl acetate	04	SW8260B	<10.0 ug/L		10.0	1	09/27/17 12:57	09/27/17 12:57	JDW
Vinyl chloride	04	SW8260B	<0.50 ug/L		0.50	1	09/27/17 12:57	09/27/17 12:57	JDW
Xylenes, Total	04	SW8260B	<3.00 ug/L		3.00	1	09/27/17 12:57	09/27/17 12:57	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*04*	*SW8260B*	*92.5 %*		*70-120*		*09/27/17 12:57*	*09/27/17 12:57*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*04*	*SW8260B*	*100 %*		*75-120*		*09/27/17 12:57*	*09/27/17 12:57*	*JDW*
Surr: Dibromofluoromethane (Surr)	*04*	*SW8260B*	*94.4 %*		*80-119*		*09/27/17 12:57*	*09/27/17 12:57*	*JDW*
Surr: Toluene-d8 (Surr)	*04*	*SW8260B*	*101 %*		*85-120*		*09/27/17 12:57*	*09/27/17 12:57*	*JDW*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-4 1490 Old Oaks FB **Laboratory Sample ID:** 17I0766-04

Grab Date/Time: 09/26/2017 09:09

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	04	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/02/17 21:57	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-5 1463 Old Oaks **Laboratory Sample ID:** 17I0766-05

Grab Date/Time: 09/26/2017 09:48

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	05	SW8260B	<0.40 ug/L		0.40	1	09/27/17 17:14	09/27/17 17:14	JDW
1,1,1-Trichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,1,2,2-Tetrachloroethane	05	SW8260B	<0.40 ug/L		0.40	1	09/27/17 17:14	09/27/17 17:14	JDW
1,1,2-Trichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,1-Dichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,1-Dichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,1-Dichloropropene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,2,3-Trichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,2,3-Trichloropropane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,2,4-Trichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,2,4-Trimethylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,2-Dibromo-3-chloropropane (DBCP)	05	SW8260B	<4.00 ug/L		4.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,2-Dibromoethane (EDB)	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,2-Dichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,2-Dichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,2-Dichloropropane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,3,5-Trimethylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,3-Dichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,3-Dichloropropane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
1,4-Dichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
2,2-Dichloropropane	05	SW8260B	<2.00 ug/L		2.00	1	09/27/17 17:14	09/27/17 17:14	JDW
2-Butanone (MEK)	05	SW8260B	<10.0 ug/L		10.0	1	09/27/17 17:14	09/27/17 17:14	JDW
2-Chlorotoluene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
2-Hexanone (MBK)	05	SW8260B	<5.00 ug/L		5.00	1	09/27/17 17:14	09/27/17 17:14	JDW
4-Chlorotoluene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
4-Isopropyltoluene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-5 1463 Old Oaks **Laboratory Sample ID:** 17I0766-05

Grab Date/Time: 09/26/2017 09:48

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	05	SW8260B	<5.00 ug/L		5.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Acetone	05	SW8260B	<10.0 ug/L		10.0	1	09/27/17 17:14	09/27/17 17:14	JDW
Benzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Bromobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Bromochloromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Bromodichloromethane	05	SW8260B	<0.50 ug/L		0.50	1	09/27/17 17:14	09/27/17 17:14	JDW
Bromoform	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Bromomethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Carbon disulfide	05	SW8260B	<10.0 ug/L		10.0	1	09/27/17 17:14	09/27/17 17:14	JDW
Carbon tetrachloride	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Chlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Chloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Chloroform	05	SW8260B	<0.50 ug/L		0.50	1	09/27/17 17:14	09/27/17 17:14	JDW
Chloromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
cis-1,2-Dichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
cis-1,3-Dichloropropene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Dibromochloromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Dibromomethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Dichlorodifluoromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Di-isopropyl ether (DIPE)	05	SW8260B	<5.00 ug/L		5.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Ethylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Hexachlorobutadiene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Iodomethane	05	SW8260B	<10.0 ug/L		10.0	1	09/27/17 17:14	09/27/17 17:14	JDW
Isopropylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
m+p-Xylenes	05	SW8260B	<2.00 ug/L		2.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Methylene chloride	05	SW8260B	<4.00 ug/L		4.00	1	09/27/17 17:14	09/27/17 17:14	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-5 1463 Old Oaks **Laboratory Sample ID:** 17I0766-05

Grab Date/Time: 09/26/2017 09:48

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Naphthalene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
n-Butylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
n-Propylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
o-Xylene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
sec-Butylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Styrene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
TAA	05	SW8260B	<25.0 ug/L		25.0	1	09/27/17 17:14	09/27/17 17:14	JDW
TBA	05	SW8260B	<100 ug/L		100	1	09/27/17 17:14	09/27/17 17:14	JDW
tert-Butylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Tetrachloroethylene (PCE)	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Toluene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
trans-1,2-Dichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
trans-1,3-Dichloropropene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Trichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Trichlorofluoromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Vinyl acetate	05	SW8260B	<10.0 ug/L		10.0	1	09/27/17 17:14	09/27/17 17:14	JDW
Vinyl chloride	05	SW8260B	<0.50 ug/L		0.50	1	09/27/17 17:14	09/27/17 17:14	JDW
Xylenes, Total	05	SW8260B	<3.00 ug/L		3.00	1	09/27/17 17:14	09/27/17 17:14	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*05*	*SW8260B*	*97.7 %*		*70-120*		*09/27/17 17:14*	*09/27/17 17:14*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*05*	*SW8260B*	*98.4 %*		*75-120*		*09/27/17 17:14*	*09/27/17 17:14*	*JDW*
Surr: Dibromofluoromethane (Surr)	*05*	*SW8260B*	*95.8 %*		*80-119*		*09/27/17 17:14*	*09/27/17 17:14*	*JDW*
Surr: Toluene-d8 (Surr)	*05*	*SW8260B*	*103 %*		*85-120*		*09/27/17 17:14*	*09/27/17 17:14*	*JDW*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-5 1463 Old Oaks **Laboratory Sample ID:** 17I0766-05

Grab Date/Time: 09/26/2017 09:48

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	05	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/02/17 22:16	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-6 1463 Old Oaks FB **Laboratory Sample ID:** 17I0766-06

Grab Date/Time: 09/26/2017 09:43

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	06	SW8260B	<0.40 ug/L		0.40	1	09/27/17 14:30	09/27/17 14:30	JDW
1,1,1-Trichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,1,2,2-Tetrachloroethane	06	SW8260B	<0.40 ug/L		0.40	1	09/27/17 14:30	09/27/17 14:30	JDW
1,1,2-Trichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,1-Dichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,1-Dichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,1-Dichloropropene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,2,3-Trichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,2,3-Trichloropropane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,2,4-Trichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,2,4-Trimethylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,2-Dibromo-3-chloropropane (DBCP)	06	SW8260B	<4.00 ug/L		4.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,2-Dibromoethane (EDB)	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,2-Dichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,2-Dichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,2-Dichloropropane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,3,5-Trimethylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,3-Dichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,3-Dichloropropane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
1,4-Dichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
2,2-Dichloropropane	06	SW8260B	<2.00 ug/L		2.00	1	09/27/17 14:30	09/27/17 14:30	JDW
2-Butanone (MEK)	06	SW8260B	<10.0 ug/L		10.0	1	09/27/17 14:30	09/27/17 14:30	JDW
2-Chlorotoluene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
2-Hexanone (MBK)	06	SW8260B	<5.00 ug/L		5.00	1	09/27/17 14:30	09/27/17 14:30	JDW
4-Chlorotoluene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
4-Isopropyltoluene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-6 1463 Old Oaks FB **Laboratory Sample ID:** 17I0766-06

Grab Date/Time: 09/26/2017 09:43

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	06	SW8260B	<5.00 ug/L		5.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Acetone	06	SW8260B	<10.0 ug/L		10.0	1	09/27/17 14:30	09/27/17 14:30	JDW
Benzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Bromobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Bromochloromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Bromodichloromethane	06	SW8260B	<0.50 ug/L		0.50	1	09/27/17 14:30	09/27/17 14:30	JDW
Bromoform	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Bromomethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Carbon disulfide	06	SW8260B	<10.0 ug/L		10.0	1	09/27/17 14:30	09/27/17 14:30	JDW
Carbon tetrachloride	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Chlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Chloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Chloroform	06	SW8260B	<0.50 ug/L		0.50	1	09/27/17 14:30	09/27/17 14:30	JDW
Chloromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
cis-1,2-Dichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
cis-1,3-Dichloropropene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Dibromochloromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Dibromomethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Dichlorodifluoromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Di-isopropyl ether (DIPE)	06	SW8260B	<5.00 ug/L		5.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Ethylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Hexachlorobutadiene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Iodomethane	06	SW8260B	<10.0 ug/L		10.0	1	09/27/17 14:30	09/27/17 14:30	JDW
Isopropylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
m+p-Xylenes	06	SW8260B	<2.00 ug/L		2.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Methylene chloride	06	SW8260B	<4.00 ug/L		4.00	1	09/27/17 14:30	09/27/17 14:30	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-6 1463 Old Oaks FB **Laboratory Sample ID:** 17I0766-06

Grab Date/Time: 09/26/2017 09:43

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Naphthalene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
n-Butylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
n-Propylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
o-Xylene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
sec-Butylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Styrene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
TAA	06	SW8260B	<25.0 ug/L		25.0	1	09/27/17 14:30	09/27/17 14:30	JDW
TBA	06	SW8260B	<100 ug/L		100	1	09/27/17 14:30	09/27/17 14:30	JDW
tert-Butylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Tetrachloroethylene (PCE)	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Toluene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
trans-1,2-Dichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
trans-1,3-Dichloropropene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Trichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Trichlorofluoromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Vinyl acetate	06	SW8260B	<10.0 ug/L		10.0	1	09/27/17 14:30	09/27/17 14:30	JDW
Vinyl chloride	06	SW8260B	<0.50 ug/L		0.50	1	09/27/17 14:30	09/27/17 14:30	JDW
Xylenes, Total	06	SW8260B	<3.00 ug/L		3.00	1	09/27/17 14:30	09/27/17 14:30	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*06*	*SW8260B*	*100 %*		*70-120*		*09/27/17 14:30*	*09/27/17 14:30*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*06*	*SW8260B*	*98.5 %*		*75-120*		*09/27/17 14:30*	*09/27/17 14:30*	*JDW*
Surr: Dibromofluoromethane (Surr)	*06*	*SW8260B*	*96.5 %*		*80-119*		*09/27/17 14:30*	*09/27/17 14:30*	*JDW*
Surr: Toluene-d8 (Surr)	*06*	*SW8260B*	*104 %*		*85-120*		*09/27/17 14:30*	*09/27/17 14:30*	*JDW*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-6 1463 Old Oaks FB **Laboratory Sample ID:** 17I0766-06

Grab Date/Time: 09/26/2017 09:43

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	06	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/02/17 22:35	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-7 1548 River Road West **Laboratory Sample ID:** 17I0766-07

Grab Date/Time: 09/26/2017 10:12

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	07	SW8260B	<0.40 ug/L		0.40	1	09/27/17 17:37	09/27/17 17:37	JDW
1,1,1-Trichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,1,2,2-Tetrachloroethane	07	SW8260B	<0.40 ug/L		0.40	1	09/27/17 17:37	09/27/17 17:37	JDW
1,1,2-Trichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,1-Dichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,1-Dichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,1-Dichloropropene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,2,3-Trichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,2,3-Trichloropropane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,2,4-Trichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,2,4-Trimethylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,2-Dibromo-3-chloropropane (DBCP)	07	SW8260B	<4.00 ug/L		4.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,2-Dibromoethane (EDB)	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,2-Dichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,2-Dichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,2-Dichloropropane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,3,5-Trimethylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,3-Dichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,3-Dichloropropane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
1,4-Dichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
2,2-Dichloropropane	07	SW8260B	<2.00 ug/L		2.00	1	09/27/17 17:37	09/27/17 17:37	JDW
2-Butanone (MEK)	07	SW8260B	<10.0 ug/L		10.0	1	09/27/17 17:37	09/27/17 17:37	JDW
2-Chlorotoluene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
2-Hexanone (MBK)	07	SW8260B	<5.00 ug/L		5.00	1	09/27/17 17:37	09/27/17 17:37	JDW
4-Chlorotoluene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
4-Isopropyltoluene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-7 1548 River Road West **Laboratory Sample ID:** 17I0766-07

Grab Date/Time: 09/26/2017 10:12

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	07	SW8260B	<5.00 ug/L		5.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Acetone	07	SW8260B	<10.0 ug/L		10.0	1	09/27/17 17:37	09/27/17 17:37	JDW
Benzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Bromobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Bromochloromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Bromodichloromethane	07	SW8260B	<0.50 ug/L		0.50	1	09/27/17 17:37	09/27/17 17:37	JDW
Bromoform	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Bromomethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Carbon disulfide	07	SW8260B	<10.0 ug/L		10.0	1	09/27/17 17:37	09/27/17 17:37	JDW
Carbon tetrachloride	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Chlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Chloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Chloroform	07	SW8260B	<0.50 ug/L		0.50	1	09/27/17 17:37	09/27/17 17:37	JDW
Chloromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
cis-1,2-Dichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
cis-1,3-Dichloropropene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Dibromochloromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Dibromomethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Dichlorodifluoromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Di-isopropyl ether (DIPE)	07	SW8260B	<5.00 ug/L		5.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Ethylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Hexachlorobutadiene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Iodomethane	07	SW8260B	<10.0 ug/L		10.0	1	09/27/17 17:37	09/27/17 17:37	JDW
Isopropylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
m+p-Xylenes	07	SW8260B	<2.00 ug/L		2.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Methylene chloride	07	SW8260B	<4.00 ug/L		4.00	1	09/27/17 17:37	09/27/17 17:37	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-7 1548 River Road West **Laboratory Sample ID:** 17I0766-07

Grab Date/Time: 09/26/2017 10:12

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Naphthalene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
n-Butylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
n-Propylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
o-Xylene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
sec-Butylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Styrene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
TAA	07	SW8260B	<25.0 ug/L		25.0	1	09/27/17 17:37	09/27/17 17:37	JDW
TBA	07	SW8260B	<100 ug/L		100	1	09/27/17 17:37	09/27/17 17:37	JDW
tert-Butylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Tetrachloroethylene (PCE)	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Toluene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
trans-1,2-Dichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
trans-1,3-Dichloropropene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Trichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Trichlorofluoromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Vinyl acetate	07	SW8260B	<10.0 ug/L		10.0	1	09/27/17 17:37	09/27/17 17:37	JDW
Vinyl chloride	07	SW8260B	<0.50 ug/L		0.50	1	09/27/17 17:37	09/27/17 17:37	JDW
Xylenes, Total	07	SW8260B	<3.00 ug/L		3.00	1	09/27/17 17:37	09/27/17 17:37	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*07*	*SW8260B*	*92.7 %*		*70-120*		*09/27/17 17:37*	*09/27/17 17:37*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*07*	*SW8260B*	*99.8 %*		*75-120*		*09/27/17 17:37*	*09/27/17 17:37*	*JDW*
Surr: Dibromofluoromethane (Surr)	*07*	*SW8260B*	*95.1 %*		*80-119*		*09/27/17 17:37*	*09/27/17 17:37*	*JDW*
Surr: Toluene-d8 (Surr)	*07*	*SW8260B*	*103 %*		*85-120*		*09/27/17 17:37*	*09/27/17 17:37*	*JDW*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-7 1548 River Road West **Laboratory Sample ID:** 17I0766-07

Grab Date/Time: 09/26/2017 10:12

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	07	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/02/17 22:55	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-8 1548 River Road West FB **Laboratory Sample ID:** 17I0766-08

Grab Date/Time: 09/26/2017 10:06

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	08	SW8260B	<0.40 ug/L		0.40	1	09/27/17 14:54	09/27/17 14:54	JDW
1,1,1-Trichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,1,2,2-Tetrachloroethane	08	SW8260B	<0.40 ug/L		0.40	1	09/27/17 14:54	09/27/17 14:54	JDW
1,1,2-Trichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,1-Dichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,1-Dichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,1-Dichloropropene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,2,3-Trichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,2,3-Trichloropropane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,2,4-Trichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,2,4-Trimethylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,2-Dibromo-3-chloropropane (DBCP)	08	SW8260B	<4.00 ug/L		4.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,2-Dibromoethane (EDB)	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,2-Dichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,2-Dichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,2-Dichloropropane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,3,5-Trimethylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,3-Dichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,3-Dichloropropane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
1,4-Dichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
2,2-Dichloropropane	08	SW8260B	<2.00 ug/L		2.00	1	09/27/17 14:54	09/27/17 14:54	JDW
2-Butanone (MEK)	08	SW8260B	<10.0 ug/L		10.0	1	09/27/17 14:54	09/27/17 14:54	JDW
2-Chlorotoluene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
2-Hexanone (MBK)	08	SW8260B	<5.00 ug/L		5.00	1	09/27/17 14:54	09/27/17 14:54	JDW
4-Chlorotoluene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
4-Isopropyltoluene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-8 1548 River Road West FB **Laboratory Sample ID:** 17I0766-08

Grab Date/Time: 09/26/2017 10:06

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	08	SW8260B	<5.00 ug/L		5.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Acetone	08	SW8260B	<10.0 ug/L		10.0	1	09/27/17 14:54	09/27/17 14:54	JDW
Benzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Bromobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Bromochloromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Bromodichloromethane	08	SW8260B	<0.50 ug/L		0.50	1	09/27/17 14:54	09/27/17 14:54	JDW
Bromoform	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Bromomethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Carbon disulfide	08	SW8260B	<10.0 ug/L		10.0	1	09/27/17 14:54	09/27/17 14:54	JDW
Carbon tetrachloride	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Chlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Chloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Chloroform	08	SW8260B	<0.50 ug/L		0.50	1	09/27/17 14:54	09/27/17 14:54	JDW
Chloromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
cis-1,2-Dichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
cis-1,3-Dichloropropene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Dibromochloromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Dibromomethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Dichlorodifluoromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Di-isopropyl ether (DIPE)	08	SW8260B	<5.00 ug/L		5.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Ethylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Hexachlorobutadiene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Iodomethane	08	SW8260B	<10.0 ug/L		10.0	1	09/27/17 14:54	09/27/17 14:54	JDW
Isopropylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
m+p-Xylenes	08	SW8260B	<2.00 ug/L		2.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Methylene chloride	08	SW8260B	<4.00 ug/L		4.00	1	09/27/17 14:54	09/27/17 14:54	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-8 1548 River Road West FB **Laboratory Sample ID:** 17I0766-08

Grab Date/Time: 09/26/2017 10:06

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Naphthalene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
n-Butylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
n-Propylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
o-Xylene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
sec-Butylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Styrene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
TAA	08	SW8260B	<25.0 ug/L		25.0	1	09/27/17 14:54	09/27/17 14:54	JDW
TBA	08	SW8260B	<100 ug/L		100	1	09/27/17 14:54	09/27/17 14:54	JDW
tert-Butylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Tetrachloroethylene (PCE)	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Toluene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
trans-1,2-Dichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
trans-1,3-Dichloropropene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Trichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Trichlorofluoromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Vinyl acetate	08	SW8260B	<10.0 ug/L		10.0	1	09/27/17 14:54	09/27/17 14:54	JDW
Vinyl chloride	08	SW8260B	<0.50 ug/L		0.50	1	09/27/17 14:54	09/27/17 14:54	JDW
Xylenes, Total	08	SW8260B	<3.00 ug/L		3.00	1	09/27/17 14:54	09/27/17 14:54	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*08*	*SW8260B*	*88.3 %*		*70-120*		*09/27/17 14:54*	*09/27/17 14:54*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*08*	*SW8260B*	*99.1 %*		*75-120*		*09/27/17 14:54*	*09/27/17 14:54*	*JDW*
Surr: Dibromofluoromethane (Surr)	*08*	*SW8260B*	*92.2 %*		*80-119*		*09/27/17 14:54*	*09/27/17 14:54*	*JDW*
Surr: Toluene-d8 (Surr)	*08*	*SW8260B*	*103 %*		*85-120*		*09/27/17 14:54*	*09/27/17 14:54*	*JDW*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-8 1548 River Road West FB **Laboratory Sample ID:** 17I0766-08

Grab Date/Time: 09/26/2017 10:06

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	08	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/02/17 23:14	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-9 991 Briesmaster Way **Laboratory Sample ID:** 17I0766-09

Grab Date/Time: 09/26/2017 10:37

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	09	SW8260B	<0.40 ug/L		0.40	1	09/27/17 18:01	09/27/17 18:01	JDW
1,1,1-Trichloroethane	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,1,2,2-Tetrachloroethane	09	SW8260B	<0.40 ug/L		0.40	1	09/27/17 18:01	09/27/17 18:01	JDW
1,1,2-Trichloroethane	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,1-Dichloroethane	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,1-Dichloroethylene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,1-Dichloropropene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,2,3-Trichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,2,3-Trichloropropane	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,2,4-Trichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,2,4-Trimethylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,2-Dibromo-3-chloropropane (DBCP)	09	SW8260B	<4.00 ug/L		4.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,2-Dibromoethane (EDB)	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,2-Dichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,2-Dichloroethane	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,2-Dichloropropane	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,3,5-Trimethylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,3-Dichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,3-Dichloropropane	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
1,4-Dichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
2,2-Dichloropropane	09	SW8260B	<2.00 ug/L		2.00	1	09/27/17 18:01	09/27/17 18:01	JDW
2-Butanone (MEK)	09	SW8260B	<10.0 ug/L		10.0	1	09/27/17 18:01	09/27/17 18:01	JDW
2-Chlorotoluene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
2-Hexanone (MBK)	09	SW8260B	<5.00 ug/L		5.00	1	09/27/17 18:01	09/27/17 18:01	JDW
4-Chlorotoluene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
4-Isopropyltoluene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-9 991 Briesmaster Way **Laboratory Sample ID:** 17I0766-09

Grab Date/Time: 09/26/2017 10:37

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	09	SW8260B	<5.00 ug/L		5.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Acetone	09	SW8260B	<10.0 ug/L		10.0	1	09/27/17 18:01	09/27/17 18:01	JDW
Benzene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Bromobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Bromochloromethane	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Bromodichloromethane	09	SW8260B	<0.50 ug/L		0.50	1	09/27/17 18:01	09/27/17 18:01	JDW
Bromoform	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Bromomethane	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Carbon disulfide	09	SW8260B	<10.0 ug/L		10.0	1	09/27/17 18:01	09/27/17 18:01	JDW
Carbon tetrachloride	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Chlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Chloroethane	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Chloroform	09	SW8260B	<0.50 ug/L		0.50	1	09/27/17 18:01	09/27/17 18:01	JDW
Chloromethane	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
cis-1,2-Dichloroethylene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
cis-1,3-Dichloropropene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Dibromochloromethane	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Dibromomethane	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Dichlorodifluoromethane	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Di-isopropyl ether (DIPE)	09	SW8260B	<5.00 ug/L		5.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Ethylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Hexachlorobutadiene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Iodomethane	09	SW8260B	<10.0 ug/L		10.0	1	09/27/17 18:01	09/27/17 18:01	JDW
Isopropylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
m+p-Xylenes	09	SW8260B	<2.00 ug/L		2.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Methylene chloride	09	SW8260B	<4.00 ug/L		4.00	1	09/27/17 18:01	09/27/17 18:01	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-9 991 Briesmaster Way **Laboratory Sample ID:** 17I0766-09

Grab Date/Time: 09/26/2017 10:37

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Naphthalene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
n-Butylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
n-Propylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
o-Xylene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
sec-Butylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Styrene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
TAA	09	SW8260B	<25.0 ug/L		25.0	1	09/27/17 18:01	09/27/17 18:01	JDW
TBA	09	SW8260B	<100 ug/L		100	1	09/27/17 18:01	09/27/17 18:01	JDW
tert-Butylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Tetrachloroethylene (PCE)	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Toluene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
trans-1,2-Dichloroethylene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
trans-1,3-Dichloropropene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Trichloroethylene	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Trichlorofluoromethane	09	SW8260B	<1.00 ug/L		1.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Vinyl acetate	09	SW8260B	<10.0 ug/L		10.0	1	09/27/17 18:01	09/27/17 18:01	JDW
Vinyl chloride	09	SW8260B	<0.50 ug/L		0.50	1	09/27/17 18:01	09/27/17 18:01	JDW
Xylenes, Total	09	SW8260B	<3.00 ug/L		3.00	1	09/27/17 18:01	09/27/17 18:01	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*09*	*SW8260B*	*90.7 %*		*70-120*		*09/27/17 18:01*	*09/27/17 18:01*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*09*	*SW8260B*	*97.9 %*		*75-120*		*09/27/17 18:01*	*09/27/17 18:01*	*JDW*
Surr: Dibromofluoromethane (Surr)	*09*	*SW8260B*	*93.4 %*		*80-119*		*09/27/17 18:01*	*09/27/17 18:01*	*JDW*
Surr: Toluene-d8 (Surr)	*09*	*SW8260B*	*103 %*		*85-120*		*09/27/17 18:01*	*09/27/17 18:01*	*JDW*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-9 991 Briesmaster Way **Laboratory Sample ID:** 17I0766-09

Grab Date/Time: 09/26/2017 10:37

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	09	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/02/17 23:34	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-10 991 Briesmaster Way FB **Laboratory Sample ID:** 17I0766-10

Grab Date/Time: 09/26/2017 10:32

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	10	SW8260B	<0.40 ug/L		0.40	1	09/27/17 15:17	09/27/17 15:17	JDW
1,1,1-Trichloroethane	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,1,2,2-Tetrachloroethane	10	SW8260B	<0.40 ug/L		0.40	1	09/27/17 15:17	09/27/17 15:17	JDW
1,1,2-Trichloroethane	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,1-Dichloroethane	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,1-Dichloroethylene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,1-Dichloropropene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,2,3-Trichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,2,3-Trichloropropane	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,2,4-Trichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,2,4-Trimethylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,2-Dibromo-3-chloropropane (DBCP)	10	SW8260B	<4.00 ug/L		4.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,2-Dibromoethane (EDB)	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,2-Dichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,2-Dichloroethane	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,2-Dichloropropane	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,3,5-Trimethylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,3-Dichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,3-Dichloropropane	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
1,4-Dichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
2,2-Dichloropropane	10	SW8260B	<2.00 ug/L		2.00	1	09/27/17 15:17	09/27/17 15:17	JDW
2-Butanone (MEK)	10	SW8260B	<10.0 ug/L		10.0	1	09/27/17 15:17	09/27/17 15:17	JDW
2-Chlorotoluene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
2-Hexanone (MBK)	10	SW8260B	<5.00 ug/L		5.00	1	09/27/17 15:17	09/27/17 15:17	JDW
4-Chlorotoluene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
4-Isopropyltoluene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-10 991 Briesmaster Way FB **Laboratory Sample ID:** 17I0766-10

Grab Date/Time: 09/26/2017 10:32

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	10	SW8260B	<5.00 ug/L		5.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Acetone	10	SW8260B	<10.0 ug/L		10.0	1	09/27/17 15:17	09/27/17 15:17	JDW
Benzene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Bromobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Bromochloromethane	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Bromodichloromethane	10	SW8260B	<0.50 ug/L		0.50	1	09/27/17 15:17	09/27/17 15:17	JDW
Bromoform	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Bromomethane	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Carbon disulfide	10	SW8260B	<10.0 ug/L		10.0	1	09/27/17 15:17	09/27/17 15:17	JDW
Carbon tetrachloride	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Chlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Chloroethane	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Chloroform	10	SW8260B	<0.50 ug/L		0.50	1	09/27/17 15:17	09/27/17 15:17	JDW
Chloromethane	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
cis-1,2-Dichloroethylene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
cis-1,3-Dichloropropene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Dibromochloromethane	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Dibromomethane	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Dichlorodifluoromethane	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Di-isopropyl ether (DIPE)	10	SW8260B	<5.00 ug/L		5.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Ethylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Hexachlorobutadiene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Iodomethane	10	SW8260B	<10.0 ug/L		10.0	1	09/27/17 15:17	09/27/17 15:17	JDW
Isopropylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
m+p-Xylenes	10	SW8260B	<2.00 ug/L		2.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Methylene chloride	10	SW8260B	<4.00 ug/L		4.00	1	09/27/17 15:17	09/27/17 15:17	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-10 991 Briesmaster Way FB **Laboratory Sample ID:** 17I0766-10

Grab Date/Time: 09/26/2017 10:32

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Naphthalene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
n-Butylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
n-Propylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
o-Xylene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
sec-Butylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Styrene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
TAA	10	SW8260B	<25.0 ug/L		25.0	1	09/27/17 15:17	09/27/17 15:17	JDW
TBA	10	SW8260B	<100 ug/L		100	1	09/27/17 15:17	09/27/17 15:17	JDW
tert-Butylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Tetrachloroethylene (PCE)	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Toluene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
trans-1,2-Dichloroethylene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
trans-1,3-Dichloropropene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Trichloroethylene	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Trichlorofluoromethane	10	SW8260B	<1.00 ug/L		1.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Vinyl acetate	10	SW8260B	<10.0 ug/L		10.0	1	09/27/17 15:17	09/27/17 15:17	JDW
Vinyl chloride	10	SW8260B	<0.50 ug/L		0.50	1	09/27/17 15:17	09/27/17 15:17	JDW
Xylenes, Total	10	SW8260B	<3.00 ug/L		3.00	1	09/27/17 15:17	09/27/17 15:17	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*10*	*SW8260B*	*91.2 %*		*70-120*		*09/27/17 15:17*	*09/27/17 15:17*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*10*	*SW8260B*	*98.5 %*		*75-120*		*09/27/17 15:17*	*09/27/17 15:17*	*JDW*
Surr: Dibromofluoromethane (Surr)	*10*	*SW8260B*	*93.3 %*		*80-119*		*09/27/17 15:17*	*09/27/17 15:17*	*JDW*
Surr: Toluene-d8 (Surr)	*10*	*SW8260B*	*101 %*		*85-120*		*09/27/17 15:17*	*09/27/17 15:17*	*JDW*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0766

Analytical Results

Sample I.D. 92617001-10 991 Briesmaster Way FB **Laboratory Sample ID:** 17I0766-10

Grab Date/Time: 09/26/2017 10:32

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	10	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/02/17 23:53	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Organic Compounds by GCMS		**Preparation Method:**	**SW5030B**		
17I0766-02	5.00 mL / 5.00 mL	SW8260B	BAI0770	SAI0719	AI70017
17I0766-03	5.00 mL / 5.00 mL	SW8260B	BAI0770	SAI0719	AI70017
17I0766-04	5.00 mL / 5.00 mL	SW8260B	BAI0770	SAI0719	AI70017
17I0766-05	5.00 mL / 5.00 mL	SW8260B	BAI0770	SAI0719	AI70017
17I0766-06	5.00 mL / 5.00 mL	SW8260B	BAI0770	SAI0719	AI70017
17I0766-07	5.00 mL / 5.00 mL	SW8260B	BAI0770	SAI0719	AI70017
17I0766-08	5.00 mL / 5.00 mL	SW8260B	BAI0770	SAI0719	AI70017
17I0766-09	5.00 mL / 5.00 mL	SW8260B	BAI0770	SAI0719	AI70017
17I0766-10	5.00 mL / 5.00 mL	SW8260B	BAI0770	SAI0719	AI70017

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Micro-extractables by GC/ECD		**Preparation Method:**	**SW8011**		
17I0766-01	60.1 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0766-03	60.7 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0766-04	61.3 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0766-05	60.8 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0766-06	61.0 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0766-07	60.8 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0766-08	59.7 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0766-09	61.1 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0766-10	61.4 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
Blank (BAI0770-BLK1)				Prepared & Analyzed: 09/27/2017						
1,1,1,2-Tetrachloroethane	<0.40 ug/L	0.40	ug/L							
1,1,1-Trichloroethane	<1.00 ug/L	1.00	ug/L							
1,1,2,2-Tetrachloroethane	<0.40 ug/L	0.40	ug/L							
1,1,2-Trichloroethane	<1.00 ug/L	1.00	ug/L							
1,1-Dichloroethane	<1.00 ug/L	1.00	ug/L							
1,1-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
1,1-Dichloropropene	<1.00 ug/L	1.00	ug/L							
1,2,3-Trichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2,3-Trichloropropane	<1.00 ug/L	1.00	ug/L							
1,2,4-Trichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2,4-Trimethylbenzene	<1.00 ug/L	1.00	ug/L							
1,2-Dibromo-3-chloropropane (DBCP)	<4.00 ug/L	4.00	ug/L							
1,2-Dibromoethane (EDB)	<1.00 ug/L	1.00	ug/L							
1,2-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2-Dichloroethane	<1.00 ug/L	1.00	ug/L							
1,2-Dichloropropane	<1.00 ug/L	1.00	ug/L							
1,3,5-Trimethylbenzene	<1.00 ug/L	1.00	ug/L							
1,3-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,3-Dichloropropane	<1.00 ug/L	1.00	ug/L							
1,4-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
2,2-Dichloropropane	<2.00 ug/L	2.00	ug/L							
2-Butanone (MEK)	<10.0 ug/L	10.0	ug/L							
2-Chlorotoluene	<1.00 ug/L	1.00	ug/L							
2-Hexanone (MBK)	<5.00 ug/L	5.00	ug/L							
4-Chlorotoluene	<1.00 ug/L	1.00	ug/L							
4-Isopropyltoluene	<1.00 ug/L	1.00	ug/L							
4-Methyl-2-pentanone (MIBK)	<5.00 ug/L	5.00	ug/L							
Acetone	<10.0 ug/L	10.0	ug/L							
Benzene	<1.00 ug/L	1.00	ug/L							
Bromobenzene	<1.00 ug/L	1.00	ug/L							
Bromochloromethane	<1.00 ug/L	1.00	ug/L							

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
Blank (BAI0770-BLK1)				Prepared & Analyzed: 09/27/2017						
Bromodichloromethane	<0.50 ug/L	0.50	ug/L							
Bromoform	<1.00 ug/L	1.00	ug/L							
Bromomethane	<1.00 ug/L	1.00	ug/L							
Carbon disulfide	<10.0 ug/L	10.0	ug/L							
Carbon tetrachloride	<1.00 ug/L	1.00	ug/L							
Chlorobenzene	<1.00 ug/L	1.00	ug/L							
Chloroethane	<1.00 ug/L	1.00	ug/L							
Chloroform	<0.50 ug/L	0.50	ug/L							
Chloromethane	<1.00 ug/L	1.00	ug/L							
cis-1,2-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
cis-1,3-Dichloropropene	<1.00 ug/L	1.00	ug/L							
Dibromochloromethane	<1.00 ug/L	1.00	ug/L							
Dibromomethane	<1.00 ug/L	1.00	ug/L							
Dichlorodifluoromethane	<1.00 ug/L	1.00	ug/L							
Di-isopropyl ether (DIPE)	<5.00 ug/L	5.00	ug/L							
Ethylbenzene	<1.00 ug/L	1.00	ug/L							
Hexachlorobutadiene	<1.00 ug/L	1.00	ug/L							
Iodomethane	<10.0 ug/L	10.0	ug/L							
Isopropylbenzene	<1.00 ug/L	1.00	ug/L							
m+p-Xylenes	<2.00 ug/L	2.00	ug/L							
Methylene chloride	<4.00 ug/L	4.00	ug/L							
Methyl-t-butyl ether (MTBE)	<1.00 ug/L	1.00	ug/L							
Naphthalene	<1.00 ug/L	1.00	ug/L							
n-Butylbenzene	<1.00 ug/L	1.00	ug/L							
n-Propylbenzene	<1.00 ug/L	1.00	ug/L							
o-Xylene	<1.00 ug/L	1.00	ug/L							
sec-Butylbenzene	<1.00 ug/L	1.00	ug/L							
Styrene	<1.00 ug/L	1.00	ug/L							
TAA	<25.0 ug/L	25.0	ug/L							
TBA	<100 ug/L	100	ug/L							
tert-Butylbenzene	<1.00 ug/L	1.00	ug/L							

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
Blank (BAI0770-BLK1)				Prepared & Analyzed: 09/27/2017						
Tetrachloroethylene (PCE)	<1.00 ug/L	1.00	ug/L							
Toluene	<1.00 ug/L	1.00	ug/L							
trans-1,2-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
trans-1,3-Dichloropropene	<1.00 ug/L	1.00	ug/L							
Trichloroethylene	<1.00 ug/L	1.00	ug/L							
Trichlorofluoromethane	<1.00 ug/L	1.00	ug/L							
Vinyl acetate	<10.0 ug/L	10.0	ug/L							
Vinyl chloride	<0.50 ug/L	0.50	ug/L							
Xylenes, Total	<3.00 ug/L	3.00	ug/L							
Surr: 1,2-Dichloroethane-d4 (Surr)	46.1		ug/L	50.0		92.3	70-120			
Surr: 4-Bromofluorobenzene (Surr)	48.7		ug/L	50.0		97.4	75-120			
Surr: Dibromofluoromethane (Surr)	44.6		ug/L	50.0		89.1	80-119			
Surr: Toluene-d8 (Surr)	51.3		ug/L	50.0		103	85-120			
LCS (BAI0770-BS1)				Prepared & Analyzed: 09/27/2017						
1,1,1,2-Tetrachloroethane	44.4 ug/L	0.4	ug/L	50.0	ug/L	88.8	80-130			
1,1,1-Trichloroethane	45.5 ug/L	1	ug/L	50.0	ug/L	90.9	65-130			
1,1,2,2-Tetrachloroethane	43.1 ug/L	0.4	ug/L	50.0	ug/L	86.3	65-130			
1,1,2-Trichloroethane	50.3 ug/L	1	ug/L	50.0	ug/L	101	75-125			
1,1-Dichloroethane	49.7 ug/L	1	ug/L	50.0	ug/L	99.4	70-135			
1,1-Dichloroethylene	45.0 ug/L	1	ug/L	50.0	ug/L	90.0	70-130			
1,1-Dichloropropene	47.2 ug/L	1	ug/L	50.0	ug/L	94.3	75-135			
1,2,3-Trichlorobenzene	41.9 ug/L	1	ug/L	50.0	ug/L	83.7	55-140			
1,2,3-Trichloropropane	43.3 ug/L	1	ug/L	50.0	ug/L	86.6	75-125			
1,2,4-Trichlorobenzene	42.0 ug/L	1	ug/L	50.0	ug/L	84.0	65-135			
1,2,4-Trimethylbenzene	41.9 ug/L	1	ug/L	50.0	ug/L	83.8	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	39.4 ug/L	4	ug/L	50.0	ug/L	78.9	50-130			
1,2-Dibromoethane (EDB)	45.1 ug/L	1	ug/L	50.0	ug/L	90.1	80-120			
1,2-Dichlorobenzene	42.2 ug/L	1	ug/L	50.0	ug/L	84.5	70-120			
1,2-Dichloroethane	45.3 ug/L	1	ug/L	50.0	ug/L	90.6	70-130			
1,2-Dichloropropane	48.3 ug/L	1	ug/L	50.0	ug/L	96.6	75-125			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
LCS (BAI0770-BS1)				Prepared & Analyzed: 09/27/2017						
1,3,5-Trimethylbenzene	43.0 ug/L	1	ug/L	50.0	ug/L	86.1	75-125			
1,3-Dichlorobenzene	43.8 ug/L	1	ug/L	50.0	ug/L	87.6	75-125			
1,3-Dichloropropane	48.3 ug/L	1	ug/L	50.0	ug/L	96.6	75-125			
1,4-Dichlorobenzene	42.6 ug/L	1	ug/L	50.0	ug/L	85.2	75-125			
2,2-Dichloropropane	47.5 ug/L	2	ug/L	50.0	ug/L	94.9	70-135			
2-Butanone (MEK)	41.4 ug/L	10	ug/L	50.0	ug/L	82.8	30-150			
2-Chlorotoluene	44.1 ug/L	1	ug/L	50.0	ug/L	88.3	75-125			
2-Hexanone (MBK)	43.1 ug/L	5	ug/L	50.0	ug/L	86.3	55-130			
4-Chlorotoluene	42.2 ug/L	1	ug/L	50.0	ug/L	84.3	75-130			
4-Isopropyltoluene	42.0 ug/L	1	ug/L	50.0	ug/L	84.1	75-130			
4-Methyl-2-pentanone (MIBK)	45.0 ug/L	5	ug/L	50.0	ug/L	90.0	60-135			
Acetone	43.8 ug/L	10	ug/L	50.0	ug/L	87.6	40-140			
Benzene	48.1 ug/L	1	ug/L	50.0	ug/L	96.2	80-120			
Bromobenzene	43.1 ug/L	1	ug/L	50.0	ug/L	86.3	75-125			
Bromochloromethane	46.3 ug/L	1	ug/L	50.0	ug/L	92.7	65-130			
Bromodichloromethane	49.1 ug/L	0.5	ug/L	50.0	ug/L	98.3	75-120			
Bromoform	44.5 ug/L	1	ug/L	50.0	ug/L	89.0	70-130			
Bromomethane	43.0 ug/L	1	ug/L	50.0	ug/L	86.0	30-145			
Carbon disulfide	39.2 ug/L	10	ug/L	50.0	ug/L	78.4	35-160			
Carbon tetrachloride	48.0 ug/L	1	ug/L	50.0	ug/L	95.9	65-140			
Chlorobenzene	43.6 ug/L	1	ug/L	50.0	ug/L	87.2	80-120			
Chloroethane	42.1 ug/L	1	ug/L	50.0	ug/L	84.2	60-135			
Chloroform	45.4 ug/L	0.5	ug/L	50.0	ug/L	90.8	65-135			
Chloromethane	37.1 ug/L	1	ug/L	50.0	ug/L	74.2	40-125			
cis-1,2-Dichloroethylene	44.8 ug/L	1	ug/L	50.0	ug/L	89.6	70-125			
cis-1,3-Dichloropropene	49.4 ug/L	1	ug/L	50.0	ug/L	98.8	70-130			
Dibromochloromethane	49.5 ug/L	1	ug/L	50.0	ug/L	99.0	60-135			
Dibromomethane	48.0 ug/L	1	ug/L	50.0	ug/L	96.0	75-125			
Dichlorodifluoromethane	35.8 ug/L	1	ug/L	50.0	ug/L	71.7	30-155			
Ethylbenzene	43.3 ug/L	1	ug/L	50.0	ug/L	86.7	75-125			
Hexachlorobutadiene	43.1 ug/L	1	ug/L	50.0	ug/L	86.2	50-140			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
LCS (BAI0770-BS1)				Prepared & Analyzed: 09/27/2017						
Isopropylbenzene	45.3 ug/L	1	ug/L	50.0	ug/L	90.6	75-125			
m+p-Xylenes	89.1 ug/L	2	ug/L	100	ug/L	89.1	75-130			
Methylene chloride	46.6 ug/L	4	ug/L	50.0	ug/L	93.2	55-140			
Methyl-t-butyl ether (MTBE)	47.4 ug/L	1	ug/L	50.0	ug/L	94.8	65-125			
Naphthalene	41.5 ug/L	1	ug/L	50.0	ug/L	82.9	55-140			
n-Butylbenzene	44.3 ug/L	1	ug/L	50.0	ug/L	88.7	70-135			
n-Propylbenzene	43.7 ug/L	1	ug/L	50.0	ug/L	87.4	70-130			
o-Xylene	42.8 ug/L	1	ug/L	50.0	ug/L	85.5	80-120			
sec-Butylbenzene	43.1 ug/L	1	ug/L	50.0	ug/L	86.2	70-125			
Styrene	45.6 ug/L	1	ug/L	50.0	ug/L	91.3	65-135			
tert-Butylbenzene	44.3 ug/L	1	ug/L	50.0	ug/L	88.6	70-130			
Tetrachloroethylene (PCE)	61.1 ug/L	1	ug/L	50.0	ug/L	122	45-150			
Toluene	47.9 ug/L	1	ug/L	50.0	ug/L	95.7	75-120			
trans-1,2-Dichloroethylene	46.8 ug/L	1	ug/L	50.0	ug/L	93.6	60-140			
trans-1,3-Dichloropropene	48.6 ug/L	1	ug/L	50.0	ug/L	97.2	55-140			
Trichloroethylene	48.3 ug/L	1	ug/L	50.0	ug/L	96.6	70-125			
Trichlorofluoromethane	40.3 ug/L	1	ug/L	50.0	ug/L	80.5	60-145			
Vinyl chloride	37.9 ug/L	0.5	ug/L	50.0	ug/L	75.8	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	45.7		ug/L	50.0	ug/L	91.5	70-120			
Surr: 4-Bromofluorobenzene (Surr)	50.7		ug/L	50.0	ug/L	101	75-120			
Surr: Dibromofluoromethane (Surr)	46.1		ug/L	50.0	ug/L	92.2	80-119			
Surr: Toluene-d8 (Surr)	49.9		ug/L	50.0	ug/L	99.8	85-120			
Matrix Spike (BAI0770-MS1)		**Source: 17I0765-08**		Prepared & Analyzed: 09/27/2017						
1,1,1,2-Tetrachloroethane	48.6 ug/L	0.4	ug/L	50.0	<0.4 ug/L	97.2	80-130			
1,1,1-Trichloroethane	48.8 ug/L	1	ug/L	50.0	<1 ug/L	97.6	65-130			
1,1,2,2-Tetrachloroethane	46.4 ug/L	0.4	ug/L	50.0	<0.4 ug/L	92.7	65-130			
1,1,2-Trichloroethane	56.1 ug/L	1	ug/L	50.0	<1 ug/L	112	75-125			
1,1-Dichloroethane	54.7 ug/L	1	ug/L	50.0	<1 ug/L	109	70-135			
1,1-Dichloroethylene	46.9 ug/L	1	ug/L	50.0	<1 ug/L	93.7	70-130			
1,1-Dichloropropene	47.6 ug/L	1	ug/L	50.0	<1 ug/L	95.1	75-135			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
Matrix Spike (BAI0770-MS1)		**Source: 17I0765-08**		Prepared & Analyzed: 09/27/2017						
1,2,3-Trichlorobenzene	45.0 ug/L	1	ug/L	50.0	<1 ug/L	89.9	55-140			
1,2,3-Trichloropropane	48.6 ug/L	1	ug/L	50.0	<1 ug/L	97.1	75-125			
1,2,4-Trichlorobenzene	42.1 ug/L	1	ug/L	50.0	<1 ug/L	84.2	65-135			
1,2,4-Trimethylbenzene	43.9 ug/L	1	ug/L	50.0	<1 ug/L	87.7	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	44.1 ug/L	4	ug/L	50.0	<4 ug/L	88.3	50-130			
1,2-Dibromoethane (EDB)	48.3 ug/L	1	ug/L	50.0	<1 ug/L	96.7	80-120			
1,2-Dichlorobenzene	44.8 ug/L	1	ug/L	50.0	<1 ug/L	89.5	70-120			
1,2-Dichloroethane	49.9 ug/L	1	ug/L	50.0	<1 ug/L	99.8	70-130			
1,2-Dichloropropane	53.2 ug/L	1	ug/L	50.0	<1 ug/L	106	75-125			
1,3,5-Trimethylbenzene	45.1 ug/L	1	ug/L	50.0	<1 ug/L	90.1	75-125			
1,3-Dichlorobenzene	44.9 ug/L	1	ug/L	50.0	<1 ug/L	89.8	75-125			
1,3-Dichloropropane	54.4 ug/L	1	ug/L	50.0	<1 ug/L	109	75-125			
1,4-Dichlorobenzene	43.4 ug/L	1	ug/L	50.0	<1 ug/L	86.8	75-125			
2,2-Dichloropropane	48.0 ug/L	2	ug/L	50.0	<2 ug/L	96.0	70-135			
2-Butanone (MEK)	49.7 ug/L	10	ug/L	50.0	<10 ug/L	99.5	30-150			
2-Chlorotoluene	46.4 ug/L	1	ug/L	50.0	<1 ug/L	92.8	75-125			
2-Hexanone (MBK)	47.7 ug/L	5	ug/L	50.0	<5 ug/L	95.3	55-130			
4-Chlorotoluene	43.8 ug/L	1	ug/L	50.0	<1 ug/L	87.5	75-130			
4-Isopropyltoluene	43.7 ug/L	1	ug/L	50.0	<1 ug/L	87.4	75-130			
4-Methyl-2-pentanone (MIBK)	50.2 ug/L	5	ug/L	50.0	<5 ug/L	100	60-135			
Acetone	47.8 ug/L	10	ug/L	50.0	<10 ug/L	85.1	40-140			
Benzene	52.5 ug/L	1	ug/L	50.0	<1 ug/L	105	80-120			
Bromobenzene	45.7 ug/L	1	ug/L	50.0	<1 ug/L	91.4	75-125			
Bromochloromethane	50.8 ug/L	1	ug/L	50.0	<1 ug/L	102	65-130			
Bromodichloromethane	52.6 ug/L	0.5	ug/L	50.0	<0.5 ug/L	105	75-120			
Bromoform	49.1 ug/L	1	ug/L	50.0	<1 ug/L	98.3	70-130			
Bromomethane	47.0 ug/L	1	ug/L	50.0	<1 ug/L	94.0	30-145			
Carbon disulfide	37.3 ug/L	10	ug/L	50.0	<10 ug/L	74.7	35-160			
Carbon tetrachloride	51.5 ug/L	1	ug/L	50.0	<1 ug/L	103	65-140			
Chlorobenzene	46.1 ug/L	1	ug/L	50.0	<1 ug/L	92.1	80-120			
Chloroethane	45.2 ug/L	1	ug/L	50.0	<1 ug/L	90.4	60-135			

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
Matrix Spike (BAI0770-MS1)		**Source: 17I0765-08**		Prepared & Analyzed: 09/27/2017						
Chloroform	48.3 ug/L	0.5	ug/L	50.0	<0.5 ug/L	96.5	65-135			
Chloromethane	41.1 ug/L	1	ug/L	50.0	<1 ug/L	82.1	40-125			
cis-1,2-Dichloroethylene	48.3 ug/L	1	ug/L	50.0	<1 ug/L	96.5	70-125			
cis-1,3-Dichloropropene	53.0 ug/L	1	ug/L	50.0	<1 ug/L	106	70-130			
Dibromochloromethane	55.0 ug/L	1	ug/L	50.0	<1 ug/L	110	60-135			
Dibromomethane	54.5 ug/L	1	ug/L	50.0	<1 ug/L	109	75-125			
Dichlorodifluoromethane	36.0 ug/L	1	ug/L	50.0	<1 ug/L	72.0	30-155			
Ethylbenzene	44.8 ug/L	1	ug/L	50.0	<1 ug/L	89.5	75-125			
Hexachlorobutadiene	44.2 ug/L	1	ug/L	50.0	<1 ug/L	88.4	50-140			
Isopropylbenzene	47.8 ug/L	1	ug/L	50.0	<1 ug/L	95.6	75-125			
m+p-Xylenes	95.2 ug/L	2	ug/L	100	<2 ug/L	95.2	75-130			
Methylene chloride	50.2 ug/L	4	ug/L	50.0	<4 ug/L	94.3	55-140			
Methyl-t-butyl ether (MTBE)	51.6 ug/L	1	ug/L	50.0	<1 ug/L	103	65-125			
Naphthalene	44.8 ug/L	1	ug/L	50.0	<1 ug/L	89.5	55-140			
n-Butylbenzene	45.3 ug/L	1	ug/L	50.0	<1 ug/L	90.6	70-135			
n-Propylbenzene	44.6 ug/L	1	ug/L	50.0	<1 ug/L	89.1	70-130			
o-Xylene	46.3 ug/L	1	ug/L	50.0	<1 ug/L	92.6	80-120			
sec-Butylbenzene	44.9 ug/L	1	ug/L	50.0	<1 ug/L	89.8	70-125			
Styrene	47.7 ug/L	1	ug/L	50.0	<1 ug/L	95.5	65-135			
tert-Butylbenzene	46.4 ug/L	1	ug/L	50.0	<1 ug/L	92.9	70-130			
Tetrachloroethylene (PCE)	62.8 ug/L	1	ug/L	50.0	<1 ug/L	126	45-150			
Toluene	52.4 ug/L	1	ug/L	50.0	<1 ug/L	105	75-120			
trans-1,2-Dichloroethylene	47.7 ug/L	1	ug/L	50.0	<1 ug/L	95.4	60-140			
trans-1,3-Dichloropropene	53.1 ug/L	1	ug/L	50.0	<1 ug/L	106	55-140			
Trichloroethylene	51.0 ug/L	1	ug/L	50.0	<1 ug/L	102	70-125			
Trichlorofluoromethane	41.5 ug/L	1	ug/L	50.0	<1 ug/L	83.0	60-145			
Vinyl chloride	41.2 ug/L	0.5	ug/L	50.0	<0.5 ug/L	82.5	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	45.7		ug/L	50.0	ug/L	91.4	70-120			
Surr: 4-Bromofluorobenzene (Surr)	50.5		ug/L	50.0	ug/L	101	75-120			
Surr: Dibromofluoromethane (Surr)	45.1		ug/L	50.0	ug/L	90.2	80-119			
Surr: Toluene-d8 (Surr)	51.2		ug/L	50.0	ug/L	102	85-120			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
Matrix Spike Dup (BAI0770-MSD1)		**Source: 17I0765-08**		Prepared & Analyzed: 09/27/2017						
1,1,1,2-Tetrachloroethane	49.3 ug/L	0.4	ug/L	50.0	<0.4 ug/L	98.6	80-130	1.42	30	
1,1,1-Trichloroethane	51.5 ug/L	1	ug/L	50.0	<1 ug/L	103	65-130	5.30	30	
1,1,2,2-Tetrachloroethane	48.3 ug/L	0.4	ug/L	50.0	<0.4 ug/L	96.6	65-130	4.08	30	
1,1,2-Trichloroethane	56.7 ug/L	1	ug/L	50.0	<1 ug/L	113	75-125	1.04	30	
1,1-Dichloroethane	55.6 ug/L	1	ug/L	50.0	<1 ug/L	111	70-135	1.63	30	
1,1-Dichloroethylene	50.2 ug/L	1	ug/L	50.0	<1 ug/L	100	70-130	6.97	30	
1,1-Dichloropropene	52.1 ug/L	1	ug/L	50.0	<1 ug/L	104	75-135	9.10	30	
1,2,3-Trichlorobenzene	46.1 ug/L	1	ug/L	50.0	<1 ug/L	92.3	55-140	2.59	30	
1,2,3-Trichloropropane	49.3 ug/L	1	ug/L	50.0	<1 ug/L	98.7	75-125	1.63	30	
1,2,4-Trichlorobenzene	44.1 ug/L	1	ug/L	50.0	<1 ug/L	88.3	65-135	4.73	30	
1,2,4-Trimethylbenzene	45.3 ug/L	1	ug/L	50.0	<1 ug/L	90.7	75-130	3.33	30	
1,2-Dibromo-3-chloropropane (DBCP)	45.8 ug/L	4	ug/L	50.0	<4 ug/L	91.6	50-130	3.69	30	
1,2-Dibromoethane (EDB)	50.1 ug/L	1	ug/L	50.0	<1 ug/L	100	80-120	3.64	30	
1,2-Dichlorobenzene	46.6 ug/L	1	ug/L	50.0	<1 ug/L	93.1	70-120	3.99	30	
1,2-Dichloroethane	52.6 ug/L	1	ug/L	50.0	<1 ug/L	105	70-130	5.18	30	
1,2-Dichloropropane	54.1 ug/L	1	ug/L	50.0	<1 ug/L	108	75-125	1.53	30	
1,3,5-Trimethylbenzene	45.8 ug/L	1	ug/L	50.0	<1 ug/L	91.6	75-125	1.66	30	
1,3-Dichlorobenzene	46.3 ug/L	1	ug/L	50.0	<1 ug/L	92.5	75-125	3.01	30	
1,3-Dichloropropane	55.7 ug/L	1	ug/L	50.0	<1 ug/L	111	75-125	2.40	30	
1,4-Dichlorobenzene	45.6 ug/L	1	ug/L	50.0	<1 ug/L	91.2	75-125	4.89	30	
2,2-Dichloropropane	50.4 ug/L	2	ug/L	50.0	<2 ug/L	101	70-135	4.88	30	
2-Butanone (MEK)	52.3 ug/L	10	ug/L	50.0	<10 ug/L	105	30-150	5.00	30	
2-Chlorotoluene	47.5 ug/L	1	ug/L	50.0	<1 ug/L	95.0	75-125	2.39	30	
2-Hexanone (MBK)	48.0 ug/L	5	ug/L	50.0	<5 ug/L	96.0	55-130	0.746	30	
4-Chlorotoluene	44.6 ug/L	1	ug/L	50.0	<1 ug/L	89.2	75-130	1.87	30	
4-Isopropyltoluene	44.8 ug/L	1	ug/L	50.0	<1 ug/L	89.7	75-130	2.58	30	
4-Methyl-2-pentanone (MIBK)	51.0 ug/L	5	ug/L	50.0	<5 ug/L	102	60-135	1.60	30	
Acetone	<10 ug/L	10	ug/L	50.0	<10 ug/L	-10.5	40-140	200	30	
Benzene	53.5 ug/L	1	ug/L	50.0	<1 ug/L	107	80-120	1.82	30	
Bromobenzene	47.8 ug/L	1	ug/L	50.0	<1 ug/L	95.6	75-125	4.47	30	
Bromochloromethane	54.5 ug/L	1	ug/L	50.0	<1 ug/L	109	65-130	7.04	30	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
Matrix Spike Dup (BAI0770-MSD1)		**Source: 17I0765-08**		Prepared & Analyzed: 09/27/2017						
Bromodichloromethane	55.6 ug/L	0.5	ug/L	50.0	<0.5 ug/L	111	75-120	5.55	30	
Bromoform	50.8 ug/L	1	ug/L	50.0	<1 ug/L	102	70-130	3.28	30	
Bromomethane	49.5 ug/L	1	ug/L	50.0	<1 ug/L	99.0	30-145	5.22	30	
Carbon disulfide	40.3 ug/L	10	ug/L	50.0	<10 ug/L	80.7	35-160	7.68	30	
Carbon tetrachloride	52.4 ug/L	1	ug/L	50.0	<1 ug/L	105	65-140	1.86	30	
Chlorobenzene	47.3 ug/L	1	ug/L	50.0	<1 ug/L	94.6	80-120	2.60	30	
Chloroethane	47.8 ug/L	1	ug/L	50.0	<1 ug/L	95.6	60-135	5.59	30	
Chloroform	50.3 ug/L	0.5	ug/L	50.0	<0.5 ug/L	101	65-135	4.20	30	
Chloromethane	42.2 ug/L	1	ug/L	50.0	<1 ug/L	84.3	40-125	2.61	30	
cis-1,2-Dichloroethylene	50.6 ug/L	1	ug/L	50.0	<1 ug/L	101	70-125	4.83	30	
cis-1,3-Dichloropropene	53.9 ug/L	1	ug/L	50.0	<1 ug/L	108	70-130	1.61	30	
Dibromochloromethane	54.8 ug/L	1	ug/L	50.0	<1 ug/L	110	60-135	0.505	30	
Dibromomethane	55.7 ug/L	1	ug/L	50.0	<1 ug/L	111	75-125	2.24	30	
Dichlorodifluoromethane	38.5 ug/L	1	ug/L	50.0	<1 ug/L	77.0	30-155	6.71	30	
Ethylbenzene	46.5 ug/L	1	ug/L	50.0	<1 ug/L	92.9	75-125	3.70	30	
Hexachlorobutadiene	45.1 ug/L	1	ug/L	50.0	<1 ug/L	90.2	50-140	2.10	30	
Isopropylbenzene	49.0 ug/L	1	ug/L	50.0	<1 ug/L	98.0	75-125	2.46	30	
m+p-Xylenes	96.7 ug/L	2	ug/L	100	<2 ug/L	96.7	75-130	1.55	30	
Methylene chloride	52.9 ug/L	4	ug/L	50.0	<4 ug/L	99.7	55-140	5.20	30	
Methyl-t-butyl ether (MTBE)	55.1 ug/L	1	ug/L	50.0	<1 ug/L	110	65-125	6.57	30	
Naphthalene	48.1 ug/L	1	ug/L	50.0	<1 ug/L	96.3	55-140	7.25	30	
n-Butylbenzene	46.7 ug/L	1	ug/L	50.0	<1 ug/L	93.3	70-135	3.00	30	
n-Propylbenzene	45.7 ug/L	1	ug/L	50.0	<1 ug/L	91.4	70-130	2.50	30	
o-Xylene	47.7 ug/L	1	ug/L	50.0	<1 ug/L	95.4	80-120	2.98	30	
sec-Butylbenzene	46.5 ug/L	1	ug/L	50.0	<1 ug/L	93.0	70-125	3.56	30	
Styrene	49.7 ug/L	1	ug/L	50.0	<1 ug/L	99.4	65-135	3.99	30	
tert-Butylbenzene	47.2 ug/L	1	ug/L	50.0	<1 ug/L	94.5	70-130	1.70	30	
Tetrachloroethylene (PCE)	64.2 ug/L	1	ug/L	50.0	<1 ug/L	128	45-150	2.18	30	
Toluene	53.0 ug/L	1	ug/L	50.0	<1 ug/L	106	75-120	1.19	30	
trans-1,2-Dichloroethylene	50.8 ug/L	1	ug/L	50.0	<1 ug/L	102	60-140	6.36	30	
trans-1,3-Dichloropropene	55.5 ug/L	1	ug/L	50.0	<1 ug/L	111	55-140	4.42	30	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAI0770 - SW5030B										
Matrix Spike Dup (BAI0770-MSD1)	**Source: 17I0765-08**		Prepared & Analyzed: 09/27/2017							
Trichloroethylene	52.5 ug/L	1	ug/L	50.0	<1 ug/L	105	70-125	3.03	30	
Trichlorofluoromethane	44.4 ug/L	1	ug/L	50.0	<1 ug/L	88.8	60-145	6.71	30	
Vinyl chloride	43.4 ug/L	0.5	ug/L	50.0	<0.5 ug/L	86.9	50-145	5.18	30	
Surr: 1,2-Dichloroethane-d4 (Surr)	46.5		ug/L	50.0	ug/L	93.1	70-120			
Surr: 4-Bromofluorobenzene (Surr)	51.1		ug/L	50.0	ug/L	102	75-120			
Surr: Dibromofluoromethane (Surr)	47.2		ug/L	50.0	ug/L	94.3	80-119			
Surr: Toluene-d8 (Surr)	50.6		ug/L	50.0	ug/L	101	85-120			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Micro-extractables by GC/ECD - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0018 - SW8011										
Blank (BAJ0018-BLK1)				Prepared & Analyzed: 10/02/2017						
1,2-Dibromoethane (EDB)	<0.010 ug/L	0.010	ug/L							
LCS (BAJ0018-BS1)				Prepared & Analyzed: 10/02/2017						
1,2-Dibromoethane (EDB)	0.268 ug/L	0.010	ug/L	0.250 ug/L		107	65-135			
LCS Dup (BAJ0018-BSD1)				Prepared & Analyzed: 10/02/2017						
1,2-Dibromoethane (EDB)	0.277 ug/L	0.010	ug/L	0.250 ug/L		111	65-135	3.51	20	
Duplicate (BAJ0018-DUP1)		**Source: 17I0855-01**		Prepared: 10/02/2017 Analyzed: 10/03/2017						
1,2-Dibromoethane (EDB)	<0.010 ug/L	0.010	ug/L		<0.010 ug/L			NA	20	
Matrix Spike (BAJ0018-MS1)		**Source: 17I0855-03**		Prepared: 10/02/2017 Analyzed: 10/03/2017						
1,2-Dibromoethane (EDB)	0.196 ug/L	0.010	ug/L	0.246	<0.010 ug/L	79.6	65-135			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
SW8011 in Non-Potable Water	
1,2-Dibromoethane (EDB)	VELAP,NC
SW8260B in Non-Potable Water	
1,1,1,2-Tetrachloroethane	NC,VELAP,WVDEP
1,1,1-Trichloroethane	NC,VELAP,WVDEP
1,1,2,2-Tetrachloroethane	NC,VELAP,WVDEP
1,1,2-Trichloroethane	NC,VELAP,WVDEP
1,1-Dichloroethane	NC,VELAP,WVDEP
1,1-Dichloroethylene	NC,VELAP,WVDEP
1,1-Dichloropropene	NC,VELAP,WVDEP
1,2,3-Trichlorobenzene	NC,VELAP,WVDEP
1,2,3-Trichloropropane	NC,VELAP,WVDEP
1,2,4-Trichlorobenzene	NC,VELAP,WVDEP
1,2,4-Trimethylbenzene	NC,VELAP,WVDEP
1,2-Dibromo-3-chloropropane (DBCP)	NC,VELAP,WVDEP
1,2-Dibromoethane (EDB)	NC,VELAP,WVDEP
1,2-Dichlorobenzene	NC,VELAP,WVDEP
1,2-Dichloroethane	NC,VELAP,WVDEP
1,2-Dichloropropane	NC,VELAP,WVDEP
1,3,5-Trimethylbenzene	NC,WVDEP
1,3-Dichlorobenzene	NC,VELAP,WVDEP
1,3-Dichloropropane	NC,VELAP,WVDEP
1,4-Dichlorobenzene	NC,VELAP,WVDEP
2,2-Dichloropropane	NC,VELAP,WVDEP
2-Butanone (MEK)	NC,VELAP,WVDEP
2-Chlorotoluene	NC,VELAP,WVDEP
2-Hexanone (MBK)	NC,VELAP,WVDEP
4-Chlorotoluene	NC,VELAP,WVDEP
4-Isopropyltoluene	NC,VELAP,WVDEP
4-Methyl-2-pentanone (MIBK)	NC,VELAP,WVDEP
Acetone	NC,VELAP,WVDEP
Benzene	NC,VELAP,WVDEP
Bromobenzene	NC,VELAP,WVDEP
Bromochloromethane	NC,VELAP,WVDEP
Bromodichloromethane	NC,VELAP,WVDEP
Bromoform	NC,VELAP,WVDEP
Bromomethane	NC,VELAP,WVDEP

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
Carbon disulfide	NC,VELAP,WVDEP
Carbon tetrachloride	NC,VELAP,WVDEP
Chlorobenzene	NC,VELAP,WVDEP
Chloroethane	NC,VELAP,WVDEP
Chloroform	NC,VELAP,WVDEP
Chloromethane	NC,VELAP,WVDEP
cis-1,2-Dichloroethylene	NC,VELAP,WVDEP
cis-1,3-Dichloropropene	NC,VELAP,WVDEP
Dibromochloromethane	NC,VELAP,WVDEP
Dibromomethane	NC,VELAP,WVDEP
Dichlorodifluoromethane	NC,VELAP,WVDEP
Di-isopropyl ether (DIPE)	NC,VELAP,WVDEP
Ethylbenzene	NC,VELAP,WVDEP
Hexachlorobutadiene	NC,VELAP,WVDEP
Iodomethane	NC,VELAP,WVDEP
Isopropylbenzene	NC,VELAP,WVDEP
m+p-Xylenes	NC,VELAP,WVDEP
Methylene chloride	NC,VELAP,WVDEP
Methyl-t-butyl ether (MTBE)	NC,VELAP,WVDEP
Naphthalene	NC,VELAP,WVDEP
n-Butylbenzene	NC,VELAP,WVDEP
n-Propylbenzene	NC,VELAP,WVDEP
o-Xylene	NC,VELAP,WVDEP
sec-Butylbenzene	NC,VELAP,WVDEP
Styrene	NC,VELAP,WVDEP
TAA	NC,VELAP,WVDEP
TBA	NC,VELAP,WVDEP
tert-Butylbenzene	NC,VELAP,WVDEP
Tetrachloroethylene (PCE)	NC,VELAP,WVDEP
Toluene	NC,VELAP,WVDEP
trans-1,2-Dichloroethylene	NC,VELAP,WVDEP
trans-1,3-Dichloropropene	NC,VELAP,WVDEP
Trichloroethylene	NC,VELAP,WVDEP
Trichlorofluoromethane	NC,VELAP,WVDEP
Vinyl acetate	NC,VELAP,WVDEP
Vinyl chloride	NC,VELAP,WVDEP
Xylenes, Total	NC,VELAP,WVDEP

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Code	Description	Lab Number	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2017
NC	North Carolina DENR	495	12/31/2017
PADEP	NELAC-Pennsylvania	001	10/31/2017
VELAP	NELAC-Virginia Certificate #9439	460021	06/14/2018
WVDEP	West Virginia DEP	350	11/30/2017

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/23/2017 15:51
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Summary of Data Qualifiers

RPD	Relative Percent Difference
Qual	Qualifers
-RE	Denotes sample was re-analyzed
D.F.	Dilution Factor. Please also see the Preparation Factor in the Analysis Summary section.
TIC	Tentatively Identified Compounds are compounds that are identified by comparing the analyte mass spectral pattern with the NIST spectral library . A TIC spectral match is reported when the pattern is at least 75% consistent with the published pattern. Compound concentrations are estimated and are calculated using an internal standard response factor of 1.
PCBs, Total	Total PCBs are defined as the sum of detected Aroclors 1016, 1221, 1232, 1248, 1254, 1260, 1262, and 1268.

APEX

Apex Companies, LLC
203 Wylderose Court
Midlothian, VA 23113
(804) 897-2718

CHAIN OF CUSTODY RECORD

JOB NO.	JOB NAME	PROJECT MANAGER
757004-001	OLD OAKS NEIGHBORHOOD	MARK RYLAND

SAMPLER(S): (Signature(s)) Trey Ousterhout

(Printed) MICHAEL MAY Trey Ousterhout

TURN – AROUND TIME: STD

PARAMETERS: EDB 8011; VOCS 8260D

SAMPLE ID	DATE	TIME	COMP.	GRAB	MATRIX	PRES.	STATION / LOCATION	NO. OF CONTAINERS	EDB 8011	VOCS 8260D								REMARKS
92617001-1	8.9.17	1360		X	W	4°C HCL	TRIP BLANK	2	X									
92617001-2	6.29.17	1340		X	W	4°C HCL	TRIP BLANK	2		X								
92617001-3	9.26.17	920		X	W	4°C HCL	1490 OLD OAKS	5	X	X								
92617001-4	92617	909		X	W	4°C HCL	1490 OLD OAKS FB	5	X	X								
92617001-5	92617	948		X	W	4°C HCL	1463 OLD OAKS	5	X	X								
92617001-6	92617	943		X	W	4°C HCL	1463 OLD OAKS FB	5	X	X								
92617001-7	92617	1012		X	W	4°C HCL	1548 RIVER ROAD WEST	5	X	X								
92617001-8	92617	1000		X	W	4°C HCL	1548 RIVER ROAD WEST FB	5	X	X								
92617001-9	92617	1037		X	W	4°C HCL	991 BRIGSMASTER WAY	5	X	X								
92617001-10	92617	1032		X	W	4°C HCL	991 BRIGSMASTER WAY FB	5	X	X								
							TOTALS	44	9	9								

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
① Trey Ousterhout	9/26/17 1346	② 26 Sept 2017 13:46	③ 0.3°C NO SEAL ON ICE		④
(Printed) Trey Ousterhout		(Printed) JAFRAL MIDDLETON	(Printed)		(Printed)
Relinquished by: (Signature) ⑤	Date/Time	Received by: (Signature) ⑥	Remarks DEQ STATE LEAD		
(Printed)		(Printed)			

APEX-Richmond 17I0766
Old Oaks Neighborhood
Recd: 09/26/2017 Due: 10/03/2017

v130325002

Distribution: WHITE => original (accompanies samples; returned with results) : YELLOW => laboratory copy : PINK => sampler's copy

1941 Reymet Road ● Richmond, Virginia 23237 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 17I0855

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian, VA 23113	Date Received:	September 28, 2017 13:36
		Date Issued:	October 24, 2017 12:36
		Project Number:	757004-001
Submitted To:	Mark Ryland	Purchase Order:	
Client Site I.D.:	Old Oaks Neighborhood		

Enclosed are the results of analyses for samples received by the laboratory on 09/28/2017 13:36. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

Ted Soyars

Ted Soyars
Laboratory Manager

End Notes:

The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

This report shall not be reproduced except in full without the expressed and written approval of an authorized representative of Air Water & Soil Laboratories, Inc.

Accredited in accordance with nelac
Commonwealth of Virginia, DCLS
Accreditation # 460021

NWBOC EDWOSB Certified

Certified SWaM Small, Women and Minority-Owned
Supplier Diversity Strengthens the Commonwealth
by the Virginia Department of Minority Business Enterprise

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

ANALYTICAL REPORT FOR SAMPLES

Laboratory Order ID 17I0855

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
92717001-1 Trip Blank	17I0855-01	Ground Water	10/24/2016 09:00	09/28/2017 13:36
92717001-2 Trip Blank	17I0855-02	Ground Water	09/27/2017 15:50	09/28/2017 13:36
92717001-3 1510 Old Oaks FB	17I0855-03	Ground Water	09/27/2017 10:12	09/28/2017 13:36
92717001-4 1510 Old Oaks	17I0855-04	Ground Water	09/27/2017 10:28	09/28/2017 13:36
92717001-5 1534 Old Oaks FB	17I0855-05	Ground Water	09/27/2017 10:50	09/28/2017 13:36
92717001-6 1534 Old Oaks	17I0855-06	Ground Water	09/27/2017 10:57	09/28/2017 13:36
92717001-7 1235 Cardwell FB	17I0855-07	Ground Water	09/27/2017 11:17	09/28/2017 13:36
92717001-8 1235 Cardwell	17I0855-08	Ground Water	09/27/2017 11:21	09/28/2017 13:36
92717001-9 1491 Oakencroft FB	17I0855-09	Ground Water	09/27/2017 11:37	09/28/2017 13:36
92717001-10 1491 Oakencroft	17I0855-10	Ground Water	09/27/2017 11:42	09/28/2017 13:36

This Certificate of Analysis is being reissued on October 24, 2017 to include TBA and TAA data per the client's request.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-1 Trip Blank **Laboratory Sample ID:** 17I0855-01

Grab Date/Time: 10/24/2016 09:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	01	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/03/17 00:12	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-2 Trip Blank **Laboratory Sample ID:** 17I0855-02

Grab Date/Time: 09/27/2017 15:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	02	SW8260B	<0.40 ug/L		0.40	1	09/29/17 11:08	09/29/17 11:08	KCS
1,1,1-Trichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,1,2,2-Tetrachloroethane	02	SW8260B	<0.40 ug/L		0.40	1	09/29/17 11:08	09/29/17 11:08	KCS
1,1,2-Trichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,1-Dichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,1-Dichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,1-Dichloropropene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,2,3-Trichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,2,3-Trichloropropane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,2,4-Trichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,2,4-Trimethylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,2-Dibromo-3-chloropropane (DBCP)	02	SW8260B	<4.00 ug/L		4.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,2-Dibromoethane (EDB)	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,2-Dichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,2-Dichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,2-Dichloropropane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,3,5-Trimethylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,3-Dichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,3-Dichloropropane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
1,4-Dichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
2,2-Dichloropropane	02	SW8260B	<2.00 ug/L		2.00	1	09/29/17 11:08	09/29/17 11:08	KCS
2-Butanone (MEK)	02	SW8260B	<10.0 ug/L		10.0	1	09/29/17 11:08	09/29/17 11:08	KCS
2-Chlorotoluene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
2-Hexanone (MBK)	02	SW8260B	<5.00 ug/L		5.00	1	09/29/17 11:08	09/29/17 11:08	KCS
4-Chlorotoluene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
4-Isopropyltoluene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-2 Trip Blank **Laboratory Sample ID:** 17I0855-02

Grab Date/Time: 09/27/2017 15:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	02	SW8260B	<5.00 ug/L		5.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Acetone	02	SW8260B	<10.0 ug/L		10.0	1	09/29/17 11:08	09/29/17 11:08	KCS
Benzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Bromobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Bromochloromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Bromodichloromethane	02	SW8260B	<0.50 ug/L		0.50	1	09/29/17 11:08	09/29/17 11:08	KCS
Bromoform	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Bromomethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Carbon disulfide	02	SW8260B	<10.0 ug/L		10.0	1	09/29/17 11:08	09/29/17 11:08	KCS
Carbon tetrachloride	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Chlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Chloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Chloroform	02	SW8260B	<0.50 ug/L		0.50	1	09/29/17 11:08	09/29/17 11:08	KCS
Chloromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
cis-1,2-Dichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
cis-1,3-Dichloropropene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Dibromochloromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Dibromomethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Dichlorodifluoromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Di-isopropyl ether (DIPE)	02	SW8260B	<5.00 ug/L		5.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Ethylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Hexachlorobutadiene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Iodomethane	02	SW8260B	<10.0 ug/L		10.0	1	09/29/17 11:08	09/29/17 11:08	KCS
Isopropylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
m+p-Xylenes	02	SW8260B	<2.00 ug/L		2.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Methylene chloride	02	SW8260B	<4.00 ug/L		4.00	1	09/29/17 11:08	09/29/17 11:08	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-2 Trip Blank **Laboratory Sample ID:** 17I0855-02

Grab Date/Time: 09/27/2017 15:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Naphthalene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
n-Butylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
n-Propylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
o-Xylene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
sec-Butylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Styrene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
TAA	02	SW8260B	<25.0 ug/L		25.0	1	09/29/17 11:08	09/29/17 11:08	KCS
TBA	02	SW8260B	<100 ug/L		100	1	09/29/17 11:08	09/29/17 11:08	KCS
tert-Butylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Tetrachloroethylene (PCE)	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Toluene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
trans-1,2-Dichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
trans-1,3-Dichloropropene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Trichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Trichlorofluoromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Vinyl acetate	02	SW8260B	<10.0 ug/L		10.0	1	09/29/17 11:08	09/29/17 11:08	KCS
Vinyl chloride	02	SW8260B	<0.50 ug/L		0.50	1	09/29/17 11:08	09/29/17 11:08	KCS
Xylenes, Total	02	SW8260B	<3.00 ug/L		3.00	1	09/29/17 11:08	09/29/17 11:08	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*02*	*SW8260B*	*93.2 %*		*70-120*		*09/29/17 11:08*	*09/29/17 11:08*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*02*	*SW8260B*	*92.2 %*		*75-120*		*09/29/17 11:08*	*09/29/17 11:08*	*KCS*
Surr: Dibromofluoromethane (Surr)	*02*	*SW8260B*	*103 %*		*80-119*		*09/29/17 11:08*	*09/29/17 11:08*	*KCS*
Surr: Toluene-d8 (Surr)	*02*	*SW8260B*	*99.6 %*		*85-120*		*09/29/17 11:08*	*09/29/17 11:08*	*KCS*

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-3 1510 Old Oaks FB **Laboratory Sample ID:** 17I0855-03

Grab Date/Time: 09/27/2017 10:12

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	03	SW8260B	<0.40 ug/L		0.40	1	09/29/17 11:56	09/29/17 11:56	KCS
1,1,1-Trichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,1,2,2-Tetrachloroethane	03	SW8260B	<0.40 ug/L		0.40	1	09/29/17 11:56	09/29/17 11:56	KCS
1,1,2-Trichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,1-Dichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,1-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,1-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,2,3-Trichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,2,3-Trichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,2,4-Trichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,2,4-Trimethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,2-Dibromo-3-chloropropane (DBCP)	03	SW8260B	<4.00 ug/L		4.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,2-Dibromoethane (EDB)	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,2-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,2-Dichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,2-Dichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,3,5-Trimethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,3-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,3-Dichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
1,4-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
2,2-Dichloropropane	03	SW8260B	<2.00 ug/L		2.00	1	09/29/17 11:56	09/29/17 11:56	KCS
2-Butanone (MEK)	03	SW8260B	<10.0 ug/L		10.0	1	09/29/17 11:56	09/29/17 11:56	KCS
2-Chlorotoluene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
2-Hexanone (MBK)	03	SW8260B	<5.00 ug/L		5.00	1	09/29/17 11:56	09/29/17 11:56	KCS
4-Chlorotoluene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
4-Isopropyltoluene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-3 1510 Old Oaks FB **Laboratory Sample ID:** 17I0855-03

Grab Date/Time: 09/27/2017 10:12

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	03	SW8260B	<5.00 ug/L		5.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Acetone	03	SW8260B	<10.0 ug/L		10.0	1	09/29/17 11:56	09/29/17 11:56	KCS
Benzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Bromobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Bromochloromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Bromodichloromethane	03	SW8260B	<0.50 ug/L		0.50	1	09/29/17 11:56	09/29/17 11:56	KCS
Bromoform	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Bromomethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Carbon disulfide	03	SW8260B	<10.0 ug/L		10.0	1	09/29/17 11:56	09/29/17 11:56	KCS
Carbon tetrachloride	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Chlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Chloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Chloroform	03	SW8260B	<0.50 ug/L		0.50	1	09/29/17 11:56	09/29/17 11:56	KCS
Chloromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
cis-1,2-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
cis-1,3-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Dibromochloromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Dibromomethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Dichlorodifluoromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Di-isopropyl ether (DIPE)	03	SW8260B	<5.00 ug/L		5.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Ethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Hexachlorobutadiene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Iodomethane	03	SW8260B	<10.0 ug/L		10.0	1	09/29/17 11:56	09/29/17 11:56	KCS
Isopropylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
m+p-Xylenes	03	SW8260B	<2.00 ug/L		2.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Methylene chloride	03	SW8260B	<4.00 ug/L		4.00	1	09/29/17 11:56	09/29/17 11:56	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-3 1510 Old Oaks FB **Laboratory Sample ID:** 17I0855-03

Grab Date/Time: 09/27/2017 10:12

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Naphthalene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
n-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
n-Propylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
o-Xylene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
sec-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Styrene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
TAA	03	SW8260B	<25.0 ug/L		25.0	1	09/29/17 11:56	09/29/17 11:56	KCS
TBA	03	SW8260B	<100 ug/L		100	1	09/29/17 11:56	09/29/17 11:56	KCS
tert-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Tetrachloroethylene (PCE)	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Toluene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
trans-1,2-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
trans-1,3-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Trichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Trichlorofluoromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Vinyl acetate	03	SW8260B	<10.0 ug/L		10.0	1	09/29/17 11:56	09/29/17 11:56	KCS
Vinyl chloride	03	SW8260B	<0.50 ug/L		0.50	1	09/29/17 11:56	09/29/17 11:56	KCS
Xylenes, Total	03	SW8260B	<3.00 ug/L		3.00	1	09/29/17 11:56	09/29/17 11:56	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*03*	*SW8260B*	*107 %*		*70-120*		*09/29/17 11:56*	*09/29/17 11:56*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*03*	*SW8260B*	*91.2 %*		*75-120*		*09/29/17 11:56*	*09/29/17 11:56*	*KCS*
Surr: Dibromofluoromethane (Surr)	*03*	*SW8260B*	*107 %*		*80-119*		*09/29/17 11:56*	*09/29/17 11:56*	*KCS*
Surr: Toluene-d8 (Surr)	*03*	*SW8260B*	*98.1 %*		*85-120*		*09/29/17 11:56*	*09/29/17 11:56*	*KCS*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-3 1510 Old Oaks FB **Laboratory Sample ID:** 17I0855-03

Grab Date/Time: 09/27/2017 10:12

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	03	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/03/17 00:51	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-4 1510 Old Oaks **Laboratory Sample ID:** 17I0855-04

Grab Date/Time: 09/27/2017 10:28

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	04	SW8260B	<0.40 ug/L		0.40	1	09/29/17 15:05	09/29/17 15:05	KCS
1,1,1-Trichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,1,2,2-Tetrachloroethane	04	SW8260B	<0.40 ug/L		0.40	1	09/29/17 15:05	09/29/17 15:05	KCS
1,1,2-Trichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,1-Dichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,1-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,1-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,2,3-Trichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,2,3-Trichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,2,4-Trichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,2,4-Trimethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,2-Dibromo-3-chloropropane (DBCP)	04	SW8260B	<4.00 ug/L		4.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,2-Dibromoethane (EDB)	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,2-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,2-Dichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,2-Dichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,3,5-Trimethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,3-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,3-Dichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
1,4-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
2,2-Dichloropropane	04	SW8260B	<2.00 ug/L		2.00	1	09/29/17 15:05	09/29/17 15:05	KCS
2-Butanone (MEK)	04	SW8260B	<10.0 ug/L		10.0	1	09/29/17 15:05	09/29/17 15:05	KCS
2-Chlorotoluene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
2-Hexanone (MBK)	04	SW8260B	<5.00 ug/L		5.00	1	09/29/17 15:05	09/29/17 15:05	KCS
4-Chlorotoluene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
4-Isopropyltoluene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-4 1510 Old Oaks **Laboratory Sample ID:** 17I0855-04

Grab Date/Time: 09/27/2017 10:28

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	04	SW8260B	<5.00 ug/L		5.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Acetone	04	SW8260B	<10.0 ug/L		10.0	1	09/29/17 15:05	09/29/17 15:05	KCS
Benzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Bromobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Bromochloromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Bromodichloromethane	04	SW8260B	<0.50 ug/L		0.50	1	09/29/17 15:05	09/29/17 15:05	KCS
Bromoform	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Bromomethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Carbon disulfide	04	SW8260B	<10.0 ug/L		10.0	1	09/29/17 15:05	09/29/17 15:05	KCS
Carbon tetrachloride	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Chlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Chloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Chloroform	04	SW8260B	**0.53 ug/L**		0.50	1	09/29/17 15:05	09/29/17 15:05	KCS
Chloromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
cis-1,2-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
cis-1,3-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Dibromochloromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Dibromomethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Dichlorodifluoromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Di-isopropyl ether (DIPE)	04	SW8260B	<5.00 ug/L		5.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Ethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Hexachlorobutadiene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Iodomethane	04	SW8260B	<10.0 ug/L		10.0	1	09/29/17 15:05	09/29/17 15:05	KCS
Isopropylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
m+p-Xylenes	04	SW8260B	<2.00 ug/L		2.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Methylene chloride	04	SW8260B	<4.00 ug/L		4.00	1	09/29/17 15:05	09/29/17 15:05	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-4 1510 Old Oaks **Laboratory Sample ID:** 17I0855-04

Grab Date/Time: 09/27/2017 10:28

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Naphthalene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
n-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
n-Propylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
o-Xylene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
sec-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Styrene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
TAA	04	SW8260B	<25.0 ug/L		25.0	1	09/29/17 15:05	09/29/17 15:05	KCS
TBA	04	SW8260B	<100 ug/L		100	1	09/29/17 15:05	09/29/17 15:05	KCS
tert-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Tetrachloroethylene (PCE)	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Toluene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
trans-1,2-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
trans-1,3-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Trichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Trichlorofluoromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Vinyl acetate	04	SW8260B	<10.0 ug/L		10.0	1	09/29/17 15:05	09/29/17 15:05	KCS
Vinyl chloride	04	SW8260B	<0.50 ug/L		0.50	1	09/29/17 15:05	09/29/17 15:05	KCS
Xylenes, Total	04	SW8260B	<3.00 ug/L		3.00	1	09/29/17 15:05	09/29/17 15:05	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*04*	*SW8260B*	*105 %*		*70-120*		*09/29/17 15:05*	*09/29/17 15:05*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*04*	*SW8260B*	*89.9 %*		*75-120*		*09/29/17 15:05*	*09/29/17 15:05*	*KCS*
Surr: Dibromofluoromethane (Surr)	*04*	*SW8260B*	*105 %*		*80-119*		*09/29/17 15:05*	*09/29/17 15:05*	*KCS*
Surr: Toluene-d8 (Surr)	*04*	*SW8260B*	*100 %*		*85-120*		*09/29/17 15:05*	*09/29/17 15:05*	*KCS*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-4 1510 Old Oaks **Laboratory Sample ID:** 17I0855-04

Grab Date/Time: 09/27/2017 10:28

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	04	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/03/17 01:30	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-5 1534 Old Oaks FB **Laboratory Sample ID:** 17I0855-05

Grab Date/Time: 09/27/2017 10:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	05	SW8260B	<0.40 ug/L		0.40	1	09/29/17 12:19	09/29/17 12:19	KCS
1,1,1-Trichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,1,2,2-Tetrachloroethane	05	SW8260B	<0.40 ug/L		0.40	1	09/29/17 12:19	09/29/17 12:19	KCS
1,1,2-Trichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,1-Dichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,1-Dichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,1-Dichloropropene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,2,3-Trichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,2,3-Trichloropropane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,2,4-Trichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,2,4-Trimethylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,2-Dibromo-3-chloropropane (DBCP)	05	SW8260B	<4.00 ug/L		4.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,2-Dibromoethane (EDB)	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,2-Dichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,2-Dichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,2-Dichloropropane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,3,5-Trimethylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,3-Dichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,3-Dichloropropane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
1,4-Dichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
2,2-Dichloropropane	05	SW8260B	<2.00 ug/L		2.00	1	09/29/17 12:19	09/29/17 12:19	KCS
2-Butanone (MEK)	05	SW8260B	<10.0 ug/L		10.0	1	09/29/17 12:19	09/29/17 12:19	KCS
2-Chlorotoluene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
2-Hexanone (MBK)	05	SW8260B	<5.00 ug/L		5.00	1	09/29/17 12:19	09/29/17 12:19	KCS
4-Chlorotoluene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
4-Isopropyltoluene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-5 1534 Old Oaks FB **Laboratory Sample ID:** 17I0855-05

Grab Date/Time: 09/27/2017 10:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	05	SW8260B	<5.00 ug/L		5.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Acetone	05	SW8260B	<10.0 ug/L		10.0	1	09/29/17 12:19	09/29/17 12:19	KCS
Benzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Bromobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Bromochloromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Bromodichloromethane	05	SW8260B	<0.50 ug/L		0.50	1	09/29/17 12:19	09/29/17 12:19	KCS
Bromoform	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Bromomethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Carbon disulfide	05	SW8260B	<10.0 ug/L		10.0	1	09/29/17 12:19	09/29/17 12:19	KCS
Carbon tetrachloride	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Chlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Chloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Chloroform	05	SW8260B	<0.50 ug/L		0.50	1	09/29/17 12:19	09/29/17 12:19	KCS
Chloromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
cis-1,2-Dichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
cis-1,3-Dichloropropene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Dibromochloromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Dibromomethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Dichlorodifluoromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Di-isopropyl ether (DIPE)	05	SW8260B	<5.00 ug/L		5.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Ethylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Hexachlorobutadiene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Iodomethane	05	SW8260B	<10.0 ug/L		10.0	1	09/29/17 12:19	09/29/17 12:19	KCS
Isopropylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
m+p-Xylenes	05	SW8260B	<2.00 ug/L		2.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Methylene chloride	05	SW8260B	<4.00 ug/L		4.00	1	09/29/17 12:19	09/29/17 12:19	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-5 1534 Old Oaks FB **Laboratory Sample ID:** 17I0855-05

Grab Date/Time: 09/27/2017 10:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Naphthalene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
n-Butylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
n-Propylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
o-Xylene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
sec-Butylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Styrene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
TAA	05	SW8260B	<25.0 ug/L		25.0	1	09/29/17 12:19	09/29/17 12:19	KCS
TBA	05	SW8260B	<100 ug/L		100	1	09/29/17 12:19	09/29/17 12:19	KCS
tert-Butylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Tetrachloroethylene (PCE)	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Toluene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
trans-1,2-Dichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
trans-1,3-Dichloropropene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Trichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Trichlorofluoromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Vinyl acetate	05	SW8260B	<10.0 ug/L		10.0	1	09/29/17 12:19	09/29/17 12:19	KCS
Vinyl chloride	05	SW8260B	<0.50 ug/L		0.50	1	09/29/17 12:19	09/29/17 12:19	KCS
Xylenes, Total	05	SW8260B	<3.00 ug/L		3.00	1	09/29/17 12:19	09/29/17 12:19	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*05*	*SW8260B*	*103 %*		*70-120*		*09/29/17 12:19*	*09/29/17 12:19*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*05*	*SW8260B*	*90.5 %*		*75-120*		*09/29/17 12:19*	*09/29/17 12:19*	*KCS*
Surr: Dibromofluoromethane (Surr)	*05*	*SW8260B*	*104 %*		*80-119*		*09/29/17 12:19*	*09/29/17 12:19*	*KCS*
Surr: Toluene-d8 (Surr)	*05*	*SW8260B*	*99.7 %*		*85-120*		*09/29/17 12:19*	*09/29/17 12:19*	*KCS*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-5 1534 Old Oaks FB **Laboratory Sample ID:** 17I0855-05

Grab Date/Time: 09/27/2017 10:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	05	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:18	10/03/17 01:49	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-6 1534 Old Oaks **Laboratory Sample ID:** 17I0855-06

Grab Date/Time: 09/27/2017 10:57

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	06	SW8260B	<0.40 ug/L		0.40	1	09/29/17 15:29	09/29/17 15:29	KCS
1,1,1-Trichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,1,2,2-Tetrachloroethane	06	SW8260B	<0.40 ug/L		0.40	1	09/29/17 15:29	09/29/17 15:29	KCS
1,1,2-Trichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,1-Dichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,1-Dichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,1-Dichloropropene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,2,3-Trichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,2,3-Trichloropropane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,2,4-Trichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,2,4-Trimethylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,2-Dibromo-3-chloropropane (DBCP)	06	SW8260B	<4.00 ug/L		4.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,2-Dibromoethane (EDB)	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,2-Dichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,2-Dichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,2-Dichloropropane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,3,5-Trimethylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,3-Dichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,3-Dichloropropane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
1,4-Dichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
2,2-Dichloropropane	06	SW8260B	<2.00 ug/L		2.00	1	09/29/17 15:29	09/29/17 15:29	KCS
2-Butanone (MEK)	06	SW8260B	<10.0 ug/L		10.0	1	09/29/17 15:29	09/29/17 15:29	KCS
2-Chlorotoluene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
2-Hexanone (MBK)	06	SW8260B	<5.00 ug/L		5.00	1	09/29/17 15:29	09/29/17 15:29	KCS
4-Chlorotoluene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
4-Isopropyltoluene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-6 1534 Old Oaks **Laboratory Sample ID:** 17I0855-06

Grab Date/Time: 09/27/2017 10:57

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	06	SW8260B	<5.00 ug/L		5.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Acetone	06	SW8260B	<10.0 ug/L		10.0	1	09/29/17 15:29	09/29/17 15:29	KCS
Benzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Bromobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Bromochloromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Bromodichloromethane	06	SW8260B	<0.50 ug/L		0.50	1	09/29/17 15:29	09/29/17 15:29	KCS
Bromoform	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Bromomethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Carbon disulfide	06	SW8260B	<10.0 ug/L		10.0	1	09/29/17 15:29	09/29/17 15:29	KCS
Carbon tetrachloride	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Chlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Chloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Chloroform	06	SW8260B	<0.50 ug/L		0.50	1	09/29/17 15:29	09/29/17 15:29	KCS
Chloromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
cis-1,2-Dichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
cis-1,3-Dichloropropene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Dibromochloromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Dibromomethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Dichlorodifluoromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Di-isopropyl ether (DIPE)	06	SW8260B	<5.00 ug/L		5.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Ethylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Hexachlorobutadiene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Iodomethane	06	SW8260B	<10.0 ug/L		10.0	1	09/29/17 15:29	09/29/17 15:29	KCS
Isopropylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
m+p-Xylenes	06	SW8260B	<2.00 ug/L		2.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Methylene chloride	06	SW8260B	<4.00 ug/L		4.00	1	09/29/17 15:29	09/29/17 15:29	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-6 1534 Old Oaks **Laboratory Sample ID:** 17I0855-06

Grab Date/Time: 09/27/2017 10:57

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Naphthalene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
n-Butylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
n-Propylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
o-Xylene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
sec-Butylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Styrene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
TAA	06	SW8260B	<25.0 ug/L		25.0	1	09/29/17 15:29	09/29/17 15:29	KCS
TBA	06	SW8260B	<100 ug/L		100	1	09/29/17 15:29	09/29/17 15:29	KCS
tert-Butylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Tetrachloroethylene (PCE)	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Toluene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
trans-1,2-Dichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
trans-1,3-Dichloropropene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Trichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Trichlorofluoromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Vinyl acetate	06	SW8260B	<10.0 ug/L		10.0	1	09/29/17 15:29	09/29/17 15:29	KCS
Vinyl chloride	06	SW8260B	<0.50 ug/L		0.50	1	09/29/17 15:29	09/29/17 15:29	KCS
Xylenes, Total	06	SW8260B	<3.00 ug/L		3.00	1	09/29/17 15:29	09/29/17 15:29	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*06*	*SW8260B*	*96.0 %*		*70-120*		*09/29/17 15:29*	*09/29/17 15:29*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*06*	*SW8260B*	*89.8 %*		*75-120*		*09/29/17 15:29*	*09/29/17 15:29*	*KCS*
Surr: Dibromofluoromethane (Surr)	*06*	*SW8260B*	*109 %*		*80-119*		*09/29/17 15:29*	*09/29/17 15:29*	*KCS*
Surr: Toluene-d8 (Surr)	*06*	*SW8260B*	*101 %*		*85-120*		*09/29/17 15:29*	*09/29/17 15:29*	*KCS*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-6 1534 Old Oaks **Laboratory Sample ID:** 17I0855-06

Grab Date/Time: 09/27/2017 10:57

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	06	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:21	10/03/17 07:19	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-7 1235 Cardwell FB **Laboratory Sample ID:** 17I0855-07

Grab Date/Time: 09/27/2017 11:17

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	07	SW8260B	<0.40 ug/L		0.40	1	09/29/17 12:43	09/29/17 12:43	KCS
1,1,1-Trichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,1,2,2-Tetrachloroethane	07	SW8260B	<0.40 ug/L		0.40	1	09/29/17 12:43	09/29/17 12:43	KCS
1,1,2-Trichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,1-Dichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,1-Dichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,1-Dichloropropene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,2,3-Trichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,2,3-Trichloropropane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,2,4-Trichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,2,4-Trimethylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,2-Dibromo-3-chloropropane (DBCP)	07	SW8260B	<4.00 ug/L		4.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,2-Dibromoethane (EDB)	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,2-Dichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,2-Dichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,2-Dichloropropane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,3,5-Trimethylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,3-Dichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,3-Dichloropropane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
1,4-Dichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
2,2-Dichloropropane	07	SW8260B	<2.00 ug/L		2.00	1	09/29/17 12:43	09/29/17 12:43	KCS
2-Butanone (MEK)	07	SW8260B	<10.0 ug/L		10.0	1	09/29/17 12:43	09/29/17 12:43	KCS
2-Chlorotoluene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
2-Hexanone (MBK)	07	SW8260B	<5.00 ug/L		5.00	1	09/29/17 12:43	09/29/17 12:43	KCS
4-Chlorotoluene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
4-Isopropyltoluene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-7 1235 Cardwell FB **Laboratory Sample ID:** 17I0855-07

Grab Date/Time: 09/27/2017 11:17

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	07	SW8260B	<5.00 ug/L		5.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Acetone	07	SW8260B	<10.0 ug/L		10.0	1	09/29/17 12:43	09/29/17 12:43	KCS
Benzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Bromobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Bromochloromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Bromodichloromethane	07	SW8260B	<0.50 ug/L		0.50	1	09/29/17 12:43	09/29/17 12:43	KCS
Bromoform	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Bromomethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Carbon disulfide	07	SW8260B	<10.0 ug/L		10.0	1	09/29/17 12:43	09/29/17 12:43	KCS
Carbon tetrachloride	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Chlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Chloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Chloroform	07	SW8260B	<0.50 ug/L		0.50	1	09/29/17 12:43	09/29/17 12:43	KCS
Chloromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
cis-1,2-Dichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
cis-1,3-Dichloropropene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Dibromochloromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Dibromomethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Dichlorodifluoromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Di-isopropyl ether (DIPE)	07	SW8260B	<5.00 ug/L		5.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Ethylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Hexachlorobutadiene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Iodomethane	07	SW8260B	<10.0 ug/L		10.0	1	09/29/17 12:43	09/29/17 12:43	KCS
Isopropylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
m+p-Xylenes	07	SW8260B	<2.00 ug/L		2.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Methylene chloride	07	SW8260B	<4.00 ug/L		4.00	1	09/29/17 12:43	09/29/17 12:43	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-7 1235 Cardwell FB **Laboratory Sample ID:** 17I0855-07

Grab Date/Time: 09/27/2017 11:17

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Naphthalene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
n-Butylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
n-Propylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
o-Xylene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
sec-Butylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Styrene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
TAA	07	SW8260B	<25.0 ug/L		25.0	1	09/29/17 12:43	09/29/17 12:43	KCS
TBA	07	SW8260B	<100 ug/L		100	1	09/29/17 12:43	09/29/17 12:43	KCS
tert-Butylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Tetrachloroethylene (PCE)	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Toluene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
trans-1,2-Dichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
trans-1,3-Dichloropropene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Trichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Trichlorofluoromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Vinyl acetate	07	SW8260B	<10.0 ug/L		10.0	1	09/29/17 12:43	09/29/17 12:43	KCS
Vinyl chloride	07	SW8260B	<0.50 ug/L		0.50	1	09/29/17 12:43	09/29/17 12:43	KCS
Xylenes, Total	07	SW8260B	<3.00 ug/L		3.00	1	09/29/17 12:43	09/29/17 12:43	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*07*	*SW8260B*	*101 %*		*70-120*		*09/29/17 12:43*	*09/29/17 12:43*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*07*	*SW8260B*	*91.1 %*		*75-120*		*09/29/17 12:43*	*09/29/17 12:43*	*KCS*
Surr: Dibromofluoromethane (Surr)	*07*	*SW8260B*	*107 %*		*80-119*		*09/29/17 12:43*	*09/29/17 12:43*	*KCS*
Surr: Toluene-d8 (Surr)	*07*	*SW8260B*	*101 %*		*85-120*		*09/29/17 12:43*	*09/29/17 12:43*	*KCS*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-7 1235 Cardwell FB **Laboratory Sample ID:** 17I0855-07

Grab Date/Time: 09/27/2017 11:17

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	07	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:21	10/03/17 07:39	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-8 1235 Cardwell **Laboratory Sample ID:** 17I0855-08

Grab Date/Time: 09/27/2017 11:21

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	08	SW8260B	<0.40 ug/L		0.40	1	09/29/17 15:53	09/29/17 15:53	KCS
1,1,1-Trichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,1,2,2-Tetrachloroethane	08	SW8260B	<0.40 ug/L		0.40	1	09/29/17 15:53	09/29/17 15:53	KCS
1,1,2-Trichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,1-Dichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,1-Dichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,1-Dichloropropene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,2,3-Trichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,2,3-Trichloropropane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,2,4-Trichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,2,4-Trimethylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,2-Dibromo-3-chloropropane (DBCP)	08	SW8260B	<4.00 ug/L		4.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,2-Dibromoethane (EDB)	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,2-Dichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,2-Dichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,2-Dichloropropane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,3,5-Trimethylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,3-Dichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,3-Dichloropropane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
1,4-Dichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
2,2-Dichloropropane	08	SW8260B	<2.00 ug/L		2.00	1	09/29/17 15:53	09/29/17 15:53	KCS
2-Butanone (MEK)	08	SW8260B	<10.0 ug/L		10.0	1	09/29/17 15:53	09/29/17 15:53	KCS
2-Chlorotoluene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
2-Hexanone (MBK)	08	SW8260B	<5.00 ug/L		5.00	1	09/29/17 15:53	09/29/17 15:53	KCS
4-Chlorotoluene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
4-Isopropyltoluene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-8 1235 Cardwell **Laboratory Sample ID:** 17I0855-08

Grab Date/Time: 09/27/2017 11:21

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	08	SW8260B	<5.00 ug/L		5.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Acetone	08	SW8260B	<10.0 ug/L		10.0	1	09/29/17 15:53	09/29/17 15:53	KCS
Benzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Bromobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Bromochloromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Bromodichloromethane	08	SW8260B	<0.50 ug/L		0.50	1	09/29/17 15:53	09/29/17 15:53	KCS
Bromoform	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Bromomethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Carbon disulfide	08	SW8260B	<10.0 ug/L		10.0	1	09/29/17 15:53	09/29/17 15:53	KCS
Carbon tetrachloride	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Chlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Chloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Chloroform	08	SW8260B	<0.50 ug/L		0.50	1	09/29/17 15:53	09/29/17 15:53	KCS
Chloromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
cis-1,2-Dichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
cis-1,3-Dichloropropene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Dibromochloromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Dibromomethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Dichlorodifluoromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Di-isopropyl ether (DIPE)	08	SW8260B	<5.00 ug/L		5.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Ethylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Hexachlorobutadiene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Iodomethane	08	SW8260B	<10.0 ug/L		10.0	1	09/29/17 15:53	09/29/17 15:53	KCS
Isopropylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
m+p-Xylenes	08	SW8260B	<2.00 ug/L		2.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Methylene chloride	08	SW8260B	<4.00 ug/L		4.00	1	09/29/17 15:53	09/29/17 15:53	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-8 1235 Cardwell **Laboratory Sample ID:** 17I0855-08

Grab Date/Time: 09/27/2017 11:21

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Naphthalene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
n-Butylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
n-Propylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
o-Xylene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
sec-Butylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Styrene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
TAA	08	SW8260B	<25.0 ug/L		25.0	1	09/29/17 15:53	09/29/17 15:53	KCS
TBA	08	SW8260B	<100 ug/L		100	1	09/29/17 15:53	09/29/17 15:53	KCS
tert-Butylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Tetrachloroethylene (PCE)	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Toluene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
trans-1,2-Dichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
trans-1,3-Dichloropropene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Trichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Trichlorofluoromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Vinyl acetate	08	SW8260B	<10.0 ug/L		10.0	1	09/29/17 15:53	09/29/17 15:53	KCS
Vinyl chloride	08	SW8260B	<0.50 ug/L		0.50	1	09/29/17 15:53	09/29/17 15:53	KCS
Xylenes, Total	08	SW8260B	<3.00 ug/L		3.00	1	09/29/17 15:53	09/29/17 15:53	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*08*	*SW8260B*	*108 %*		*70-120*		*09/29/17 15:53*	*09/29/17 15:53*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*08*	*SW8260B*	*89.2 %*		*75-120*		*09/29/17 15:53*	*09/29/17 15:53*	*KCS*
Surr: Dibromofluoromethane (Surr)	*08*	*SW8260B*	*109 %*		*80-119*		*09/29/17 15:53*	*09/29/17 15:53*	*KCS*
Surr: Toluene-d8 (Surr)	*08*	*SW8260B*	*101 %*		*85-120*		*09/29/17 15:53*	*09/29/17 15:53*	*KCS*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-8 1235 Cardwell **Laboratory Sample ID:** 17I0855-08

Grab Date/Time: 09/27/2017 11:21

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	08	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:21	10/03/17 07:58	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-9 1491 Oakencroft FB **Laboratory Sample ID:** 17I0855-09

Grab Date/Time: 09/27/2017 11:37

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	09	SW8260B	<0.40 ug/L		0.40	1	09/29/17 13:07	09/29/17 13:07	KCS
1,1,1-Trichloroethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,1,2,2-Tetrachloroethane	09	SW8260B	<0.40 ug/L		0.40	1	09/29/17 13:07	09/29/17 13:07	KCS
1,1,2-Trichloroethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,1-Dichloroethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,1-Dichloroethylene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,1-Dichloropropene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,2,3-Trichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,2,3-Trichloropropane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,2,4-Trichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,2,4-Trimethylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,2-Dibromo-3-chloropropane (DBCP)	09	SW8260B	<4.00 ug/L		4.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,2-Dibromoethane (EDB)	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,2-Dichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,2-Dichloroethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,2-Dichloropropane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,3,5-Trimethylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,3-Dichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,3-Dichloropropane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
1,4-Dichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
2,2-Dichloropropane	09	SW8260B	<2.00 ug/L		2.00	1	09/29/17 13:07	09/29/17 13:07	KCS
2-Butanone (MEK)	09	SW8260B	<10.0 ug/L		10.0	1	09/29/17 13:07	09/29/17 13:07	KCS
2-Chlorotoluene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
2-Hexanone (MBK)	09	SW8260B	<5.00 ug/L		5.00	1	09/29/17 13:07	09/29/17 13:07	KCS
4-Chlorotoluene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
4-Isopropyltoluene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-9 1491 Oakencroft FB **Laboratory Sample ID:** 17I0855-09

Grab Date/Time: 09/27/2017 11:37

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	09	SW8260B	<5.00 ug/L		5.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Acetone	09	SW8260B	<10.0 ug/L		10.0	1	09/29/17 13:07	09/29/17 13:07	KCS
Benzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Bromobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Bromochloromethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Bromodichloromethane	09	SW8260B	<0.50 ug/L		0.50	1	09/29/17 13:07	09/29/17 13:07	KCS
Bromoform	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Bromomethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Carbon disulfide	09	SW8260B	<10.0 ug/L		10.0	1	09/29/17 13:07	09/29/17 13:07	KCS
Carbon tetrachloride	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Chlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Chloroethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Chloroform	09	SW8260B	<0.50 ug/L		0.50	1	09/29/17 13:07	09/29/17 13:07	KCS
Chloromethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
cis-1,2-Dichloroethylene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
cis-1,3-Dichloropropene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Dibromochloromethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Dibromomethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Dichlorodifluoromethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Di-isopropyl ether (DIPE)	09	SW8260B	<5.00 ug/L		5.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Ethylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Hexachlorobutadiene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Iodomethane	09	SW8260B	<10.0 ug/L		10.0	1	09/29/17 13:07	09/29/17 13:07	KCS
Isopropylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
m+p-Xylenes	09	SW8260B	<2.00 ug/L		2.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Methylene chloride	09	SW8260B	<4.00 ug/L		4.00	1	09/29/17 13:07	09/29/17 13:07	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-9 1491 Oakencroft FB **Laboratory Sample ID:** 17I0855-09

Grab Date/Time: 09/27/2017 11:37

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Naphthalene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
n-Butylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
n-Propylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
o-Xylene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
sec-Butylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Styrene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
TAA	09	SW8260B	<25.0 ug/L		25.0	1	09/29/17 13:07	09/29/17 13:07	KCS
TBA	09	SW8260B	<100 ug/L		100	1	09/29/17 13:07	09/29/17 13:07	KCS
tert-Butylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Tetrachloroethylene (PCE)	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Toluene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
trans-1,2-Dichloroethylene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
trans-1,3-Dichloropropene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Trichloroethylene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Trichlorofluoromethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Vinyl acetate	09	SW8260B	<10.0 ug/L		10.0	1	09/29/17 13:07	09/29/17 13:07	KCS
Vinyl chloride	09	SW8260B	<0.50 ug/L		0.50	1	09/29/17 13:07	09/29/17 13:07	KCS
Xylenes, Total	09	SW8260B	<3.00 ug/L		3.00	1	09/29/17 13:07	09/29/17 13:07	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*09*	*SW8260B*	*104 %*		*70-120*		*09/29/17 13:07*	*09/29/17 13:07*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*09*	*SW8260B*	*91.1 %*		*75-120*		*09/29/17 13:07*	*09/29/17 13:07*	*KCS*
Surr: Dibromofluoromethane (Surr)	*09*	*SW8260B*	*105 %*		*80-119*		*09/29/17 13:07*	*09/29/17 13:07*	*KCS*
Surr: Toluene-d8 (Surr)	*09*	*SW8260B*	*100 %*		*85-120*		*09/29/17 13:07*	*09/29/17 13:07*	*KCS*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-9 1491 Oakencroft FB **Laboratory Sample ID:** 17I0855-09

Grab Date/Time: 09/27/2017 11:37

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	09	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:21	10/03/17 08:18	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-10 1491 Oakencroft **Laboratory Sample ID:** 17I0855-10

Grab Date/Time: 09/27/2017 11:42

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	10	SW8260B	<0.40 ug/L		0.40	1	09/29/17 16:17	09/29/17 16:17	KCS
1,1,1-Trichloroethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,1,2,2-Tetrachloroethane	10	SW8260B	<0.40 ug/L		0.40	1	09/29/17 16:17	09/29/17 16:17	KCS
1,1,2-Trichloroethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,1-Dichloroethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,1-Dichloroethylene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,1-Dichloropropene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,2,3-Trichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,2,3-Trichloropropane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,2,4-Trichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,2,4-Trimethylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,2-Dibromo-3-chloropropane (DBCP)	10	SW8260B	<4.00 ug/L		4.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,2-Dibromoethane (EDB)	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,2-Dichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,2-Dichloroethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,2-Dichloropropane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,3,5-Trimethylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,3-Dichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,3-Dichloropropane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
1,4-Dichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
2,2-Dichloropropane	10	SW8260B	<2.00 ug/L		2.00	1	09/29/17 16:17	09/29/17 16:17	KCS
2-Butanone (MEK)	10	SW8260B	<10.0 ug/L		10.0	1	09/29/17 16:17	09/29/17 16:17	KCS
2-Chlorotoluene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
2-Hexanone (MBK)	10	SW8260B	<5.00 ug/L		5.00	1	09/29/17 16:17	09/29/17 16:17	KCS
4-Chlorotoluene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
4-Isopropyltoluene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-10 1491 Oakencroft **Laboratory Sample ID:** 17I0855-10

Grab Date/Time: 09/27/2017 11:42

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	10	SW8260B	<5.00 ug/L		5.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Acetone	10	SW8260B	<10.0 ug/L		10.0	1	09/29/17 16:17	09/29/17 16:17	KCS
Benzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Bromobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Bromochloromethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Bromodichloromethane	10	SW8260B	<0.50 ug/L		0.50	1	09/29/17 16:17	09/29/17 16:17	KCS
Bromoform	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Bromomethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Carbon disulfide	10	SW8260B	<10.0 ug/L		10.0	1	09/29/17 16:17	09/29/17 16:17	KCS
Carbon tetrachloride	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Chlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Chloroethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Chloroform	10	SW8260B	<0.50 ug/L		0.50	1	09/29/17 16:17	09/29/17 16:17	KCS
Chloromethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
cis-1,2-Dichloroethylene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
cis-1,3-Dichloropropene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Dibromochloromethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Dibromomethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Dichlorodifluoromethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Di-isopropyl ether (DIPE)	10	SW8260B	<5.00 ug/L		5.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Ethylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Hexachlorobutadiene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Iodomethane	10	SW8260B	<10.0 ug/L		10.0	1	09/29/17 16:17	09/29/17 16:17	KCS
Isopropylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
m+p-Xylenes	10	SW8260B	<2.00 ug/L		2.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Methylene chloride	10	SW8260B	<4.00 ug/L		4.00	1	09/29/17 16:17	09/29/17 16:17	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-10 1491 Oakencroft **Laboratory Sample ID:** 17I0855-10

Grab Date/Time: 09/27/2017 11:42

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Naphthalene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
n-Butylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
n-Propylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
o-Xylene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
sec-Butylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Styrene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
TAA	10	SW8260B	<25.0 ug/L		25.0	1	09/29/17 16:17	09/29/17 16:17	KCS
TBA	10	SW8260B	<100 ug/L		100	1	09/29/17 16:17	09/29/17 16:17	KCS
tert-Butylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Tetrachloroethylene (PCE)	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Toluene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
trans-1,2-Dichloroethylene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
trans-1,3-Dichloropropene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Trichloroethylene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Trichlorofluoromethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Vinyl acetate	10	SW8260B	<10.0 ug/L		10.0	1	09/29/17 16:17	09/29/17 16:17	KCS
Vinyl chloride	10	SW8260B	<0.50 ug/L		0.50	1	09/29/17 16:17	09/29/17 16:17	KCS
Xylenes, Total	10	SW8260B	<3.00 ug/L		3.00	1	09/29/17 16:17	09/29/17 16:17	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*10*	*SW8260B*	*109 %*		*70-120*		*09/29/17 16:17*	*09/29/17 16:17*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*10*	*SW8260B*	*90.9 %*		*75-120*		*09/29/17 16:17*	*09/29/17 16:17*	*KCS*
Surr: Dibromofluoromethane (Surr)	*10*	*SW8260B*	*109 %*		*80-119*		*09/29/17 16:17*	*09/29/17 16:17*	*KCS*
Surr: Toluene-d8 (Surr)	*10*	*SW8260B*	*101 %*		*85-120*		*09/29/17 16:17*	*09/29/17 16:17*	*KCS*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0855

Analytical Results

Sample I.D. 92717001-10 1491 Oakencroft **Laboratory Sample ID:** 17I0855-10

Grab Date/Time: 09/27/2017 11:42

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	10	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:21	10/03/17 08:37	LBH

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Organic Compounds by GCMS		**Preparation Method:**	**SW5030B**		
17I0855-02	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121
17I0855-03	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121
17I0855-04	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121
17I0855-05	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121
17I0855-06	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121
17I0855-07	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121
17I0855-08	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121
17I0855-09	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121
17I0855-10	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Micro-extractables by GC/ECD		**Preparation Method:**	**SW8011**		
17I0855-01	61.3 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0855-03	60.2 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0855-04	61.6 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
17I0855-05	61.3 mL / 2.00 mL	SW8011	BAJ0018	SAJ0017	AG70133
Micro-extractables by GC/ECD		**Preparation Method:**	**SW8011**		
17I0855-06	61.6 mL / 2.00 mL	SW8011	BAJ0019	SAJ0017	AG70133
17I0855-07	60.6 mL / 2.00 mL	SW8011	BAJ0019	SAJ0017	AG70133
17I0855-08	61.6 mL / 2.00 mL	SW8011	BAJ0019	SAJ0017	AG70133
17I0855-09	61.5 mL / 2.00 mL	SW8011	BAJ0019	SAJ0017	AG70133
17I0855-10	61.0 mL / 2.00 mL	SW8011	BAJ0019	SAJ0017	AG70133

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
Blank (BAJ0006-BLK1)				Prepared & Analyzed: 09/29/2017						
1,1,1,2-Tetrachloroethane	<0.40 ug/L	0.40	ug/L							
1,1,1-Trichloroethane	<1.00 ug/L	1.00	ug/L							
1,1,2,2-Tetrachloroethane	<0.40 ug/L	0.40	ug/L							
1,1,2-Trichloroethane	<1.00 ug/L	1.00	ug/L							
1,1-Dichloroethane	<1.00 ug/L	1.00	ug/L							
1,1-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
1,1-Dichloropropene	<1.00 ug/L	1.00	ug/L							
1,2,3-Trichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2,3-Trichloropropane	<1.00 ug/L	1.00	ug/L							
1,2,4-Trichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2,4-Trimethylbenzene	<1.00 ug/L	1.00	ug/L							
1,2-Dibromo-3-chloropropane (DBCP)	<4.00 ug/L	4.00	ug/L							
1,2-Dibromoethane (EDB)	<1.00 ug/L	1.00	ug/L							
1,2-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2-Dichloroethane	<1.00 ug/L	1.00	ug/L							
1,2-Dichloropropane	<1.00 ug/L	1.00	ug/L							
1,3,5-Trimethylbenzene	<1.00 ug/L	1.00	ug/L							
1,3-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,3-Dichloropropane	<1.00 ug/L	1.00	ug/L							
1,4-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
2,2-Dichloropropane	<2.00 ug/L	2.00	ug/L							
2-Butanone (MEK)	<10.0 ug/L	10.0	ug/L							
2-Chlorotoluene	<1.00 ug/L	1.00	ug/L							
2-Hexanone (MBK)	<5.00 ug/L	5.00	ug/L							
4-Chlorotoluene	<1.00 ug/L	1.00	ug/L							
4-Isopropyltoluene	<1.00 ug/L	1.00	ug/L							
4-Methyl-2-pentanone (MIBK)	<5.00 ug/L	5.00	ug/L							
Acetone	<10.0 ug/L	10.0	ug/L							
Benzene	<1.00 ug/L	1.00	ug/L							
Bromobenzene	<1.00 ug/L	1.00	ug/L							
Bromochloromethane	<1.00 ug/L	1.00	ug/L							

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
Blank (BAJ0006-BLK1)				Prepared & Analyzed: 09/29/2017						
Bromodichloromethane	<0.50 ug/L	0.50	ug/L							
Bromoform	<1.00 ug/L	1.00	ug/L							
Bromomethane	<1.00 ug/L	1.00	ug/L							
Carbon disulfide	<10.0 ug/L	10.0	ug/L							
Carbon tetrachloride	<1.00 ug/L	1.00	ug/L							
Chlorobenzene	<1.00 ug/L	1.00	ug/L							
Chloroethane	<1.00 ug/L	1.00	ug/L							
Chloroform	<0.50 ug/L	0.50	ug/L							
Chloromethane	<1.00 ug/L	1.00	ug/L							
cis-1,2-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
cis-1,3-Dichloropropene	<1.00 ug/L	1.00	ug/L							
Dibromochloromethane	<1.00 ug/L	1.00	ug/L							
Dibromomethane	<1.00 ug/L	1.00	ug/L							
Dichlorodifluoromethane	<1.00 ug/L	1.00	ug/L							
Di-isopropyl ether (DIPE)	<5.00 ug/L	5.00	ug/L							
Ethylbenzene	<1.00 ug/L	1.00	ug/L							
Hexachlorobutadiene	<1.00 ug/L	1.00	ug/L							
Iodomethane	<10.0 ug/L	10.0	ug/L							
Isopropylbenzene	<1.00 ug/L	1.00	ug/L							
m+p-Xylenes	<2.00 ug/L	2.00	ug/L							
Methylene chloride	<4.00 ug/L	4.00	ug/L							
Methyl-t-butyl ether (MTBE)	<1.00 ug/L	1.00	ug/L							
Naphthalene	<1.00 ug/L	1.00	ug/L							
n-Butylbenzene	<1.00 ug/L	1.00	ug/L							
n-Propylbenzene	<1.00 ug/L	1.00	ug/L							
o-Xylene	<1.00 ug/L	1.00	ug/L							
sec-Butylbenzene	<1.00 ug/L	1.00	ug/L							
Styrene	<1.00 ug/L	1.00	ug/L							
TAA	<25.0 ug/L	25.0	ug/L							
TBA	<100 ug/L	100	ug/L							
tert-Butylbenzene	<1.00 ug/L	1.00	ug/L							

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
Blank (BAJ0006-BLK1)				Prepared & Analyzed: 09/29/2017						
Tetrachloroethylene (PCE)	<1.00 ug/L	1.00	ug/L							
Toluene	<1.00 ug/L	1.00	ug/L							
trans-1,2-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
trans-1,3-Dichloropropene	<1.00 ug/L	1.00	ug/L							
Trichloroethylene	<1.00 ug/L	1.00	ug/L							
Trichlorofluoromethane	<1.00 ug/L	1.00	ug/L							
Vinyl acetate	<10.0 ug/L	10.0	ug/L							
Vinyl chloride	<0.50 ug/L	0.50	ug/L							
Xylenes, Total	<3.00 ug/L	3.00	ug/L							
Surr: 1,2-Dichloroethane-d4 (Surr)	52.2		ug/L	50.0		104	70-120			
Surr: 4-Bromofluorobenzene (Surr)	45.8		ug/L	50.0		91.6	75-120			
Surr: Dibromofluoromethane (Surr)	52.9		ug/L	50.0		106	80-119			
Surr: Toluene-d8 (Surr)	49.7		ug/L	50.0		99.4	85-120			
LCS (BAJ0006-BS1)				Prepared & Analyzed: 09/29/2017						
1,1,1,2-Tetrachloroethane	51.0 ug/L	0.4	ug/L	50.0	ug/L	102	80-130			
1,1,1-Trichloroethane	50.2 ug/L	1	ug/L	50.0	ug/L	100	65-130			
1,1,2,2-Tetrachloroethane	50.8 ug/L	0.4	ug/L	50.0	ug/L	102	65-130			
1,1,2-Trichloroethane	51.2 ug/L	1	ug/L	50.0	ug/L	102	75-125			
1,1-Dichloroethane	57.3 ug/L	1	ug/L	50.0	ug/L	115	70-135			
1,1-Dichloroethylene	54.2 ug/L	1	ug/L	50.0	ug/L	108	70-130			
1,1-Dichloropropene	49.2 ug/L	1	ug/L	50.0	ug/L	98.5	75-135			
1,2,3-Trichlorobenzene	49.9 ug/L	1	ug/L	50.0	ug/L	99.7	55-140			
1,2,3-Trichloropropane	47.7 ug/L	1	ug/L	50.0	ug/L	95.3	75-125			
1,2,4-Trichlorobenzene	50.0 ug/L	1	ug/L	50.0	ug/L	100	65-135			
1,2,4-Trimethylbenzene	53.9 ug/L	1	ug/L	50.0	ug/L	108	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	40.6 ug/L	4	ug/L	50.0	ug/L	81.3	50-130			
1,2-Dibromoethane (EDB)	52.1 ug/L	1	ug/L	50.0	ug/L	104	80-120			
1,2-Dichlorobenzene	50.9 ug/L	1	ug/L	50.0	ug/L	102	70-120			
1,2-Dichloroethane	47.8 ug/L	1	ug/L	50.0	ug/L	95.5	70-130			
1,2-Dichloropropane	48.1 ug/L	1	ug/L	50.0	ug/L	96.2	75-125			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
LCS (BAJ0006-BS1)				Prepared & Analyzed: 09/29/2017						
1,3,5-Trimethylbenzene	57.6 ug/L	1	ug/L	50.0	ug/L	115	75-125			
1,3-Dichlorobenzene	60.2 ug/L	1	ug/L	50.0	ug/L	120	75-125			
1,3-Dichloropropane	48.7 ug/L	1	ug/L	50.0	ug/L	97.3	75-125			
1,4-Dichlorobenzene	50.1 ug/L	1	ug/L	50.0	ug/L	100	75-125			
2,2-Dichloropropane	50.1 ug/L	2	ug/L	50.0	ug/L	100	70-135			
2-Butanone (MEK)	46.8 ug/L	10	ug/L	50.0	ug/L	93.6	30-150			
2-Chlorotoluene	60.4 ug/L	1	ug/L	50.0	ug/L	121	75-125			
2-Hexanone (MBK)	45.4 ug/L	5	ug/L	50.0	ug/L	90.7	55-130			
4-Chlorotoluene	57.2 ug/L	1	ug/L	50.0	ug/L	114	75-130			
4-Isopropyltoluene	46.9 ug/L	1	ug/L	50.0	ug/L	93.8	75-130			
4-Methyl-2-pentanone (MIBK)	40.9 ug/L	5	ug/L	50.0	ug/L	81.9	60-135			
Acetone	54.1 ug/L	10	ug/L	50.0	ug/L	108	40-140			
Benzene	50.5 ug/L	1	ug/L	50.0	ug/L	101	80-120			
Bromobenzene	52.9 ug/L	1	ug/L	50.0	ug/L	106	75-125			
Bromochloromethane	54.0 ug/L	1	ug/L	50.0	ug/L	108	65-130			
Bromodichloromethane	49.1 ug/L	0.5	ug/L	50.0	ug/L	98.1	75-120			
Bromoform	50.8 ug/L	1	ug/L	50.0	ug/L	102	70-130			
Bromomethane	51.2 ug/L	1	ug/L	50.0	ug/L	102	30-145			
Carbon disulfide	44.9 ug/L	10	ug/L	50.0	ug/L	89.8	35-160			
Carbon tetrachloride	50.5 ug/L	1	ug/L	50.0	ug/L	101	65-140			
Chlorobenzene	52.1 ug/L	1	ug/L	50.0	ug/L	104	80-120			
Chloroethane	50.4 ug/L	1	ug/L	50.0	ug/L	101	60-135			
Chloroform	49.2 ug/L	0.5	ug/L	50.0	ug/L	98.3	65-135			
Chloromethane	50.4 ug/L	1	ug/L	50.0	ug/L	101	40-125			
cis-1,2-Dichloroethylene	49.8 ug/L	1	ug/L	50.0	ug/L	99.6	70-125			
cis-1,3-Dichloropropene	48.0 ug/L	1	ug/L	50.0	ug/L	96.0	70-130			
Dibromochloromethane	50.0 ug/L	1	ug/L	50.0	ug/L	100	60-135			
Dibromomethane	50.6 ug/L	1	ug/L	50.0	ug/L	101	75-125			
Dichlorodifluoromethane	47.2 ug/L	1	ug/L	50.0	ug/L	94.3	30-155			
Ethylbenzene	47.4 ug/L	1	ug/L	50.0	ug/L	94.7	75-125			
Hexachlorobutadiene	53.6 ug/L	1	ug/L	50.0	ug/L	107	50-140			

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
LCS (BAJ0006-BS1)				Prepared & Analyzed: 09/29/2017						
Isopropylbenzene	53.8 ug/L	1	ug/L	50.0	ug/L	108	75-125			
m+p-Xylenes	97.6 ug/L	2	ug/L	100	ug/L	97.6	75-130			
Methylene chloride	55.1 ug/L	4	ug/L	50.0	ug/L	110	55-140			
Methyl-t-butyl ether (MTBE)	47.6 ug/L	1	ug/L	50.0	ug/L	95.2	65-125			
Naphthalene	43.7 ug/L	1	ug/L	50.0	ug/L	87.4	55-140			
n-Butylbenzene	47.6 ug/L	1	ug/L	50.0	ug/L	95.3	70-135			
n-Propylbenzene	57.8 ug/L	1	ug/L	50.0	ug/L	116	70-130			
o-Xylene	48.5 ug/L	1	ug/L	50.0	ug/L	97.0	80-120			
sec-Butylbenzene	58.5 ug/L	1	ug/L	50.0	ug/L	117	70-125			
Styrene	51.7 ug/L	1	ug/L	50.0	ug/L	103	65-135			
tert-Butylbenzene	58.2 ug/L	1	ug/L	50.0	ug/L	116	70-130			
Tetrachloroethylene (PCE)	73.8 ug/L	1	ug/L	50.0	ug/L	148	45-150			
Toluene	47.2 ug/L	1	ug/L	50.0	ug/L	94.3	75-120			
trans-1,2-Dichloroethylene	52.7 ug/L	1	ug/L	50.0	ug/L	105	60-140			
trans-1,3-Dichloropropene	47.6 ug/L	1	ug/L	50.0	ug/L	95.2	55-140			
Trichloroethylene	50.9 ug/L	1	ug/L	50.0	ug/L	102	70-125			
Trichlorofluoromethane	45.9 ug/L	1	ug/L	50.0	ug/L	91.8	60-145			
Vinyl chloride	46.1 ug/L	0.5	ug/L	50.0	ug/L	92.2	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	50.2		ug/L	50.0	ug/L	100	70-120			
Surr: 4-Bromofluorobenzene (Surr)	50.4		ug/L	50.0	ug/L	101	75-120			
Surr: Dibromofluoromethane (Surr)	52.0		ug/L	50.0	ug/L	104	80-119			
Surr: Toluene-d8 (Surr)	49.1		ug/L	50.0	ug/L	98.3	85-120			
Matrix Spike (BAJ0006-MS1)		**Source: 17I0855-04**		Prepared & Analyzed: 09/29/2017						
1,1,1,2-Tetrachloroethane	57.0 ug/L	0.4	ug/L	50.0	<0.4 ug/L	114	80-130			
1,1,1-Trichloroethane	57.3 ug/L	1	ug/L	50.0	<1 ug/L	115	65-130			
1,1,2,2-Tetrachloroethane	56.0 ug/L	0.4	ug/L	50.0	<0.4 ug/L	112	65-130			
1,1,2-Trichloroethane	58.9 ug/L	1	ug/L	50.0	<1 ug/L	118	75-125			
1,1-Dichloroethane	65.5 ug/L	1	ug/L	50.0	<1 ug/L	131	70-135			
1,1-Dichloroethylene	59.8 ug/L	1	ug/L	50.0	<1 ug/L	120	70-130			
1,1-Dichloropropene	54.6 ug/L	1	ug/L	50.0	<1 ug/L	109	75-135			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
Matrix Spike (BAJ0006-MS1)		**Source: 17I0855-04**		Prepared & Analyzed: 09/29/2017						
1,2,3-Trichlorobenzene	51.3 ug/L	1	ug/L	50.0	<1 ug/L	103	55-140			
1,2,3-Trichloropropane	52.8 ug/L	1	ug/L	50.0	<1 ug/L	106	75-125			
1,2,4-Trichlorobenzene	48.6 ug/L	1	ug/L	50.0	<1 ug/L	97.2	65-135			
1,2,4-Trimethylbenzene	50.6 ug/L	1	ug/L	50.0	<1 ug/L	101	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	51.2 ug/L	4	ug/L	50.0	<4 ug/L	102	50-130			
1,2-Dibromoethane (EDB)	57.8 ug/L	1	ug/L	50.0	<1 ug/L	116	80-120			
1,2-Dichlorobenzene	56.3 ug/L	1	ug/L	50.0	<1 ug/L	113	70-120			
1,2-Dichloroethane	55.4 ug/L	1	ug/L	50.0	<1 ug/L	111	70-130			
1,2-Dichloropropane	55.2 ug/L	1	ug/L	50.0	<1 ug/L	110	75-125			
1,3,5-Trimethylbenzene	54.7 ug/L	1	ug/L	50.0	<1 ug/L	109	75-125			
1,3-Dichlorobenzene	57.9 ug/L	1	ug/L	50.0	<1 ug/L	116	75-125			
1,3-Dichloropropane	57.1 ug/L	1	ug/L	50.0	<1 ug/L	114	75-125			
1,4-Dichlorobenzene	54.8 ug/L	1	ug/L	50.0	<1 ug/L	110	75-125			
2,2-Dichloropropane	53.6 ug/L	2	ug/L	50.0	<2 ug/L	107	70-135			
2-Butanone (MEK)	46.7 ug/L	10	ug/L	50.0	<10 ug/L	93.5	30-150			
2-Chlorotoluene	57.3 ug/L	1	ug/L	50.0	<1 ug/L	115	75-125			
2-Hexanone (MBK)	42.0 ug/L	5	ug/L	50.0	<5 ug/L	84.0	55-130			
4-Chlorotoluene	52.8 ug/L	1	ug/L	50.0	<1 ug/L	106	75-130			
4-Isopropyltoluene	55.0 ug/L	1	ug/L	50.0	<1 ug/L	110	75-130			
4-Methyl-2-pentanone (MIBK)	39.0 ug/L	5	ug/L	50.0	<5 ug/L	78.0	60-135			
Acetone	59.4 ug/L	10	ug/L	50.0	<10 ug/L	102	40-140			
Benzene	58.2 ug/L	1	ug/L	50.0	<1 ug/L	116	80-120			
Bromobenzene	57.6 ug/L	1	ug/L	50.0	<1 ug/L	115	75-125			
Bromochloromethane	60.8 ug/L	1	ug/L	50.0	<1 ug/L	122	65-130			
Bromodichloromethane	57.4 ug/L	0.5	ug/L	50.0	<0.5 ug/L	115	75-120			
Bromoform	55.5 ug/L	1	ug/L	50.0	<1 ug/L	111	70-130			
Bromomethane	56.2 ug/L	1	ug/L	50.0	<1 ug/L	112	30-145			
Carbon disulfide	45.4 ug/L	10	ug/L	50.0	<10 ug/L	90.8	35-160			
Carbon tetrachloride	58.7 ug/L	1	ug/L	50.0	<1 ug/L	117	65-140			
Chlorobenzene	56.3 ug/L	1	ug/L	50.0	<1 ug/L	113	80-120			
Chloroethane	56.7 ug/L	1	ug/L	50.0	<1 ug/L	113	60-135			

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
Matrix Spike (BAJ0006-MS1)		**Source: 17I0855-04**		Prepared & Analyzed: 09/29/2017						
Chloroform	56.3 ug/L	0.5	ug/L	50.0	0.53 ug/L	112	65-135			
Chloromethane	55.4 ug/L	1	ug/L	50.0	<1 ug/L	111	40-125			
cis-1,2-Dichloroethylene	56.9 ug/L	1	ug/L	50.0	<1 ug/L	114	70-125			
cis-1,3-Dichloropropene	53.7 ug/L	1	ug/L	50.0	<1 ug/L	107	70-130			
Dibromochloromethane	58.6 ug/L	1	ug/L	50.0	<1 ug/L	117	60-135			
Dibromomethane	57.7 ug/L	1	ug/L	50.0	<1 ug/L	115	75-125			
Dichlorodifluoromethane	52.9 ug/L	1	ug/L	50.0	<1 ug/L	106	30-155			
Ethylbenzene	51.5 ug/L	1	ug/L	50.0	<1 ug/L	103	75-125			
Hexachlorobutadiene	55.3 ug/L	1	ug/L	50.0	<1 ug/L	111	50-140			
Isopropylbenzene	59.2 ug/L	1	ug/L	50.0	<1 ug/L	118	75-125			
m+p-Xylenes	107 ug/L	2	ug/L	100	<2 ug/L	106	75-130			
Methylene chloride	63.0 ug/L	4	ug/L	50.0	<4 ug/L	123	55-140			
Methyl-t-butyl ether (MTBE)	52.2 ug/L	1	ug/L	50.0	<1 ug/L	104	65-125			
Naphthalene	48.4 ug/L	1	ug/L	50.0	<1 ug/L	96.7	55-140			
n-Butylbenzene	54.6 ug/L	1	ug/L	50.0	<1 ug/L	109	70-135			
n-Propylbenzene	53.9 ug/L	1	ug/L	50.0	<1 ug/L	108	70-130			
o-Xylene	54.0 ug/L	1	ug/L	50.0	<1 ug/L	108	80-120			
sec-Butylbenzene	57.0 ug/L	1	ug/L	50.0	<1 ug/L	114	70-125			
Styrene	55.7 ug/L	1	ug/L	50.0	<1 ug/L	111	65-135			
tert-Butylbenzene	55.9 ug/L	1	ug/L	50.0	<1 ug/L	112	70-130			
Tetrachloroethylene (PCE)	79.2 ug/L	1	ug/L	50.0	<1 ug/L	158	45-150			M
Toluene	54.4 ug/L	1	ug/L	50.0	<1 ug/L	108	75-120			
trans-1,2-Dichloroethylene	58.9 ug/L	1	ug/L	50.0	<1 ug/L	118	60-140			
trans-1,3-Dichloropropene	53.7 ug/L	1	ug/L	50.0	<1 ug/L	107	55-140			
Trichloroethylene	57.3 ug/L	1	ug/L	50.0	<1 ug/L	115	70-125			
Trichlorofluoromethane	52.4 ug/L	1	ug/L	50.0	<1 ug/L	105	60-145			
Vinyl chloride	53.0 ug/L	0.5	ug/L	50.0	<0.5 ug/L	106	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	51.6		ug/L	50.0	ug/L	103	70-120			
Surr: 4-Bromofluorobenzene (Surr)	49.8		ug/L	50.0	ug/L	99.5	75-120			
Surr: Dibromofluoromethane (Surr)	52.2		ug/L	50.0	ug/L	104	80-119			
Surr: Toluene-d8 (Surr)	50.9		ug/L	50.0	ug/L	102	85-120			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
Matrix Spike Dup (BAJ0006-MSD1)		**Source: 17I0855-04**		Prepared & Analyzed: 09/29/2017						
1,1,1,2-Tetrachloroethane	58.8 ug/L	0.4	ug/L	50.0	<0.4 ug/L	118	80-130	2.97	30	
1,1,1-Trichloroethane	59.0 ug/L	1	ug/L	50.0	<1 ug/L	118	65-130	2.77	30	
1,1,2,2-Tetrachloroethane	57.8 ug/L	0.4	ug/L	50.0	<0.4 ug/L	116	65-130	3.04	30	
1,1,2-Trichloroethane	59.0 ug/L	1	ug/L	50.0	<1 ug/L	118	75-125	0.170	30	
1,1-Dichloroethane	67.1 ug/L	1	ug/L	50.0	<1 ug/L	134	70-135	2.47	30	
1,1-Dichloroethylene	62.9 ug/L	1	ug/L	50.0	<1 ug/L	126	70-130	5.00	30	
1,1-Dichloropropene	56.8 ug/L	1	ug/L	50.0	<1 ug/L	114	75-135	3.95	30	
1,2,3-Trichlorobenzene	53.5 ug/L	1	ug/L	50.0	<1 ug/L	107	55-140	4.18	30	
1,2,3-Trichloropropane	55.1 ug/L	1	ug/L	50.0	<1 ug/L	110	75-125	4.28	30	
1,2,4-Trichlorobenzene	51.6 ug/L	1	ug/L	50.0	<1 ug/L	103	65-135	5.93	30	
1,2,4-Trimethylbenzene	52.6 ug/L	1	ug/L	50.0	<1 ug/L	105	75-130	3.76	30	
1,2-Dibromo-3-chloropropane (DBCP)	54.1 ug/L	4	ug/L	50.0	<4 ug/L	108	50-130	5.62	30	
1,2-Dibromoethane (EDB)	58.5 ug/L	1	ug/L	50.0	<1 ug/L	117	80-120	1.15	30	
1,2-Dichlorobenzene	57.9 ug/L	1	ug/L	50.0	<1 ug/L	116	70-120	2.85	30	
1,2-Dichloroethane	56.5 ug/L	1	ug/L	50.0	<1 ug/L	113	70-130	1.84	30	
1,2-Dichloropropane	56.6 ug/L	1	ug/L	50.0	<1 ug/L	113	75-125	2.58	30	
1,3,5-Trimethylbenzene	57.1 ug/L	1	ug/L	50.0	<1 ug/L	114	75-125	4.38	30	
1,3-Dichlorobenzene	60.1 ug/L	1	ug/L	50.0	<1 ug/L	120	75-125	3.73	30	
1,3-Dichloropropane	57.4 ug/L	1	ug/L	50.0	<1 ug/L	115	75-125	0.471	30	
1,4-Dichlorobenzene	57.4 ug/L	1	ug/L	50.0	<1 ug/L	115	75-125	4.69	30	
2,2-Dichloropropane	55.0 ug/L	2	ug/L	50.0	<2 ug/L	110	70-135	2.52	30	
2-Butanone (MEK)	55.0 ug/L	10	ug/L	50.0	<10 ug/L	110	30-150	16.2	30	
2-Chlorotoluene	58.9 ug/L	1	ug/L	50.0	<1 ug/L	118	75-125	2.70	30	
2-Hexanone (MBK)	49.4 ug/L	5	ug/L	50.0	<5 ug/L	98.7	55-130	16.2	30	
4-Chlorotoluene	55.4 ug/L	1	ug/L	50.0	<1 ug/L	111	75-130	4.83	30	
4-Isopropyltoluene	56.6 ug/L	1	ug/L	50.0	<1 ug/L	113	75-130	2.98	30	
4-Methyl-2-pentanone (MIBK)	45.5 ug/L	5	ug/L	50.0	<5 ug/L	91.1	60-135	15.5	30	
Acetone	72.9 ug/L	10	ug/L	50.0	<10 ug/L	129	40-140	20.4	30	
Benzene	58.5 ug/L	1	ug/L	50.0	<1 ug/L	117	80-120	0.428	30	
Bromobenzene	58.9 ug/L	1	ug/L	50.0	<1 ug/L	118	75-125	2.27	30	
Bromochloromethane	62.8 ug/L	1	ug/L	50.0	<1 ug/L	126	65-130	3.24	30	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
Matrix Spike Dup (BAJ0006-MSD1)		**Source: 17I0855-04**		Prepared & Analyzed: 09/29/2017						
Bromodichloromethane	58.1 ug/L	0.5	ug/L	50.0	<0.5 ug/L	116	75-120	1.25	30	
Bromoform	56.8 ug/L	1	ug/L	50.0	<1 ug/L	114	70-130	2.24	30	
Bromomethane	61.6 ug/L	1	ug/L	50.0	<1 ug/L	123	30-145	9.15	30	
Carbon disulfide	52.4 ug/L	10	ug/L	50.0	<10 ug/L	105	35-160	14.4	30	
Carbon tetrachloride	59.8 ug/L	1	ug/L	50.0	<1 ug/L	120	65-140	1.77	30	
Chlorobenzene	58.2 ug/L	1	ug/L	50.0	<1 ug/L	116	80-120	3.42	30	
Chloroethane	60.5 ug/L	1	ug/L	50.0	<1 ug/L	121	60-135	6.52	30	
Chloroform	57.9 ug/L	0.5	ug/L	50.0	0.53 ug/L	115	65-135	2.80	30	
Chloromethane	61.5 ug/L	1	ug/L	50.0	<1 ug/L	123	40-125	10.6	30	
cis-1,2-Dichloroethylene	58.8 ug/L	1	ug/L	50.0	<1 ug/L	118	70-125	3.41	30	
cis-1,3-Dichloropropene	54.0 ug/L	1	ug/L	50.0	<1 ug/L	108	70-130	0.576	30	
Dibromochloromethane	58.8 ug/L	1	ug/L	50.0	<1 ug/L	118	60-135	0.324	30	
Dibromomethane	58.2 ug/L	1	ug/L	50.0	<1 ug/L	116	75-125	0.794	30	
Dichlorodifluoromethane	57.4 ug/L	1	ug/L	50.0	<1 ug/L	115	30-155	8.16	30	
Ethylbenzene	52.5 ug/L	1	ug/L	50.0	<1 ug/L	105	75-125	1.90	30	
Hexachlorobutadiene	56.0 ug/L	1	ug/L	50.0	<1 ug/L	112	50-140	1.26	30	
Isopropylbenzene	60.4 ug/L	1	ug/L	50.0	<1 ug/L	121	75-125	2.01	30	
m+p-Xylenes	109 ug/L	2	ug/L	100	<2 ug/L	109	75-130	2.28	30	
Methylene chloride	64.0 ug/L	4	ug/L	50.0	<4 ug/L	125	55-140	1.65	30	
Methyl-t-butyl ether (MTBE)	54.8 ug/L	1	ug/L	50.0	<1 ug/L	110	65-125	5.01	30	
Naphthalene	51.2 ug/L	1	ug/L	50.0	<1 ug/L	102	55-140	5.59	30	
n-Butylbenzene	57.2 ug/L	1	ug/L	50.0	<1 ug/L	114	70-135	4.66	30	
n-Propylbenzene	56.8 ug/L	1	ug/L	50.0	<1 ug/L	114	70-130	5.17	30	
o-Xylene	55.0 ug/L	1	ug/L	50.0	<1 ug/L	110	80-120	1.96	30	
sec-Butylbenzene	59.4 ug/L	1	ug/L	50.0	<1 ug/L	119	70-125	4.14	30	
Styrene	57.9 ug/L	1	ug/L	50.0	<1 ug/L	116	65-135	3.85	30	
tert-Butylbenzene	57.6 ug/L	1	ug/L	50.0	<1 ug/L	115	70-130	2.98	30	
Tetrachloroethylene (PCE)	82.7 ug/L	1	ug/L	50.0	<1 ug/L	165	45-150	4.22	30	M
Toluene	55.2 ug/L	1	ug/L	50.0	<1 ug/L	110	75-120	1.46	30	
trans-1,2-Dichloroethylene	61.4 ug/L	1	ug/L	50.0	<1 ug/L	123	60-140	4.12	30	
trans-1,3-Dichloropropene	53.8 ug/L	1	ug/L	50.0	<1 ug/L	108	55-140	0.260	30	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
Matrix Spike Dup (BAJ0006-MSD1)		**Source: 17I0855-04**		Prepared & Analyzed: 09/29/2017						
Trichloroethylene	58.2 ug/L	1	ug/L	50.0	<1 ug/L	116	70-125	1.49	30	
Trichlorofluoromethane	55.1 ug/L	1	ug/L	50.0	<1 ug/L	110	60-145	4.97	30	
Vinyl chloride	55.4 ug/L	0.5	ug/L	50.0	<0.5 ug/L	111	50-145	4.35	30	
Surr: 1,2-Dichloroethane-d4 (Surr)	50.9		ug/L	50.0	ug/L	102	70-120			
Surr: 4-Bromofluorobenzene (Surr)	49.5		ug/L	50.0	ug/L	98.9	75-120			
Surr: Dibromofluoromethane (Surr)	52.6		ug/L	50.0	ug/L	105	80-119			
Surr: Toluene-d8 (Surr)	50.0		ug/L	50.0	ug/L	99.9	85-120			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Micro-extractables by GC/ECD - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0018 - SW8011										
Blank (BAJ0018-BLK1)				Prepared & Analyzed: 10/02/2017						
1,2-Dibromoethane (EDB)	<0.010 ug/L	0.010	ug/L							
LCS (BAJ0018-BS1)				Prepared & Analyzed: 10/02/2017						
1,2-Dibromoethane (EDB)	0.268 ug/L	0.010	ug/L	0.250 ug/L		107	65-135			
LCS Dup (BAJ0018-BSD1)				Prepared & Analyzed: 10/02/2017						
1,2-Dibromoethane (EDB)	0.277 ug/L	0.010	ug/L	0.250 ug/L		111	65-135	3.51	20	
Duplicate (BAJ0018-DUP1)		**Source: 17I0855-01**		Prepared: 10/02/2017 Analyzed: 10/03/2017						
1,2-Dibromoethane (EDB)	<0.010 ug/L	0.010	ug/L		<0.010 ug/L			NA	20	
Matrix Spike (BAJ0018-MS1)		**Source: 17I0855-03**		Prepared: 10/02/2017 Analyzed: 10/03/2017						
1,2-Dibromoethane (EDB)	0.196 ug/L	0.010	ug/L	0.246	<0.010 ug/L	79.6	65-135			
Batch BAJ0019 - SW8011										
Blank (BAJ0019-BLK1)				Prepared: 10/02/2017 Analyzed: 10/03/2017						
1,2-Dibromoethane (EDB)	<0.010 ug/L	0.010	ug/L							
LCS (BAJ0019-BS1)				Prepared: 10/02/2017 Analyzed: 10/03/2017						
1,2-Dibromoethane (EDB)	0.260 ug/L	0.010	ug/L	0.250 ug/L		104	65-135			
LCS Dup (BAJ0019-BSD1)				Prepared: 10/02/2017 Analyzed: 10/03/2017						
1,2-Dibromoethane (EDB)	0.269 ug/L	0.010	ug/L	0.250 ug/L		107	65-135	3.24	20	
Matrix Spike (BAJ0019-MS1)		**Source: 17I0764-02**		Prepared: 10/02/2017 Analyzed: 10/03/2017						
1,2-Dibromoethane (EDB)	0.154 ug/L	0.010	ug/L	0.245	<0.010 ug/L	62.9	65-135			M

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
SW8011 in Non-Potable Water	
1,2-Dibromoethane (EDB)	VELAP,NC
SW8260B in Non-Potable Water	
1,1,1,2-Tetrachloroethane	NC,VELAP,WVDEP
1,1,1-Trichloroethane	NC,VELAP,WVDEP
1,1,2,2-Tetrachloroethane	NC,VELAP,WVDEP
1,1,2-Trichloroethane	NC,VELAP,WVDEP
1,1-Dichloroethane	NC,VELAP,WVDEP
1,1-Dichloroethylene	NC,VELAP,WVDEP
1,1-Dichloropropene	NC,VELAP,WVDEP
1,2,3-Trichlorobenzene	NC,VELAP,WVDEP
1,2,3-Trichloropropane	NC,VELAP,WVDEP
1,2,4-Trichlorobenzene	NC,VELAP,WVDEP
1,2,4-Trimethylbenzene	NC,VELAP,WVDEP
1,2-Dibromo-3-chloropropane (DBCP)	NC,VELAP,WVDEP
1,2-Dibromoethane (EDB)	NC,VELAP,WVDEP
1,2-Dichlorobenzene	NC,VELAP,WVDEP
1,2-Dichloroethane	NC,VELAP,WVDEP
1,2-Dichloropropane	NC,VELAP,WVDEP
1,3,5-Trimethylbenzene	NC,WVDEP
1,3-Dichlorobenzene	NC,VELAP,WVDEP
1,3-Dichloropropane	NC,VELAP,WVDEP
1,4-Dichlorobenzene	NC,VELAP,WVDEP
2,2-Dichloropropane	NC,VELAP,WVDEP
2-Butanone (MEK)	NC,VELAP,WVDEP
2-Chlorotoluene	NC,VELAP,WVDEP
2-Hexanone (MBK)	NC,VELAP,WVDEP
4-Chlorotoluene	NC,VELAP,WVDEP
4-Isopropyltoluene	NC,VELAP,WVDEP
4-Methyl-2-pentanone (MIBK)	NC,VELAP,WVDEP
Acetone	NC,VELAP,WVDEP
Benzene	NC,VELAP,WVDEP
Bromobenzene	NC,VELAP,WVDEP
Bromochloromethane	NC,VELAP,WVDEP
Bromodichloromethane	NC,VELAP,WVDEP
Bromoform	NC,VELAP,WVDEP
Bromomethane	NC,VELAP,WVDEP

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
Carbon disulfide	NC,VELAP,WVDEP
Carbon tetrachloride	NC,VELAP,WVDEP
Chlorobenzene	NC,VELAP,WVDEP
Chloroethane	NC,VELAP,WVDEP
Chloroform	NC,VELAP,WVDEP
Chloromethane	NC,VELAP,WVDEP
cis-1,2-Dichloroethylene	NC,VELAP,WVDEP
cis-1,3-Dichloropropene	NC,VELAP,WVDEP
Dibromochloromethane	NC,VELAP,WVDEP
Dibromomethane	NC,VELAP,WVDEP
Dichlorodifluoromethane	NC,VELAP,WVDEP
Di-isopropyl ether (DIPE)	NC,VELAP,WVDEP
Ethylbenzene	NC,VELAP,WVDEP
Hexachlorobutadiene	NC,VELAP,WVDEP
Iodomethane	NC,VELAP,WVDEP
Isopropylbenzene	NC,VELAP,WVDEP
m+p-Xylenes	NC,VELAP,WVDEP
Methylene chloride	NC,VELAP,WVDEP
Methyl-t-butyl ether (MTBE)	NC,VELAP,WVDEP
Naphthalene	NC,VELAP,WVDEP
n-Butylbenzene	NC,VELAP,WVDEP
n-Propylbenzene	NC,VELAP,WVDEP
o-Xylene	NC,VELAP,WVDEP
sec-Butylbenzene	NC,VELAP,WVDEP
Styrene	NC,VELAP,WVDEP
TAA	NC,VELAP,WVDEP
TBA	NC,VELAP,WVDEP
tert-Butylbenzene	NC,VELAP,WVDEP
Tetrachloroethylene (PCE)	NC,VELAP,WVDEP
Toluene	NC,VELAP,WVDEP
trans-1,2-Dichloroethylene	NC,VELAP,WVDEP
trans-1,3-Dichloropropene	NC,VELAP,WVDEP
Trichloroethylene	NC,VELAP,WVDEP
Trichlorofluoromethane	NC,VELAP,WVDEP
Vinyl acetate	NC,VELAP,WVDEP
Vinyl chloride	NC,VELAP,WVDEP
Xylenes, Total	NC,VELAP,WVDEP

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Code	Description	Lab Number	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2017
NC	North Carolina DENR	495	12/31/2017
PADEP	NELAC-Pennsylvania	001	10/31/2017
VELAP	NELAC-Virginia Certificate #9439	460021	06/14/2018
WVDEP	West Virginia DEP	350	11/30/2017

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:36
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Summary of Data Qualifiers

M	Matrix spike recovery is outside established acceptance limits
RPD	Relative Percent Difference
Qual	Qualifers
-RE	Denotes sample was re-analyzed
D.F.	Dilution Factor. Please also see the Preparation Factor in the Analysis Summary section.
TIC	Tentatively Identified Compounds are compounds that are identified by comparing the analyte mass spectral pattern with the NIST spectral library . A TIC spectral match is reported when the pattern is at least 75% consistent with the published pattern. Compound concentrations are estimated and are calculated using an internal standard response factor of 1.
PCBs, Total	Total PCBs are defined as the sum of detected Aroclors 1016, 1221, 1232, 1248, 1254, 1260, 1262, and 1268.

APEX

Apex Companies, LLC
203 Wylderose Court
Midlothian, VA 23113
(804) 897-2718

CHAIN OF CUSTODY RECORD

JOB NO.: 757004-001
JOB NAME: OLD OAKS NEIGHBORHOOD
PROJECT MANAGER: MARK BYLAND
SAMPLER(S): (Signature(s)) [signature]
(Printed): MICHAEL MAY
TURN – AROUND TIME: STD

SAMPLE ID	DATE	TIME	COMP.	GRAB	MATRIX	PRES.	STATION / LOCATION	NO. OF CONTAINERS	EDB 8011	VOCs 8260	REMARKS
92717001-1	102416	900		X	W	4°C HCL	TRIP BLANK	2	X		
92717001-2	92717	1550		X	W	4°C HCL	TRIP BLANK	2		X	
92717001-3	92717	1012		X	W	4°C HCL	1510 OLD OAKS FB	5	X	X	
92717001-4	92717	1028		X	W	4°C HCL	1510 OLD OAKS	5	X	X	
92717001-5	92717	1050		X	W	4°C HCL	1534 OLD OAKS FB	5	X	X	
92717001-6	92717	1057		X	W	4°C HCL	1534 OLD OAKS	5	X	X	
92717001-7	92717	1117		X	W	4°C HCL	1235 CARDWELL FB	5	X	X	
92717001-8	92717	1121		X	W	4°C HCL	1235 CARDWELL	5	X	X	
92717001-9	92717	1137		X	W	4°C HCL	1491 OAKENCROFT FB	5	X	X	
92717001-10	92717	1142		X	W	4°C HCL	1491 OAKENCROFT	5	X	X	
											2.6°C No Seal On Ice
							TOTALS	44	9	9	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
① [signature]	9/28/17 900	② Trey Ousterhout	③ Trey Ousterhout	9/28/17 1336	[signature]
(Printed) MICHAEL MAY		(Printed) Trey Ousterhout	(Printed) Trey Ousterhout		(Printed) Brian Richard 9/28/17 13:36
Relinquished by: (Signature) ⑤	Date/Time	Received by: (Signature) ⑥	Remarks: DEQ STATE LEAD		
(Printed)		(Printed)			

APEX-Richmond 1710855
Old Oaks Neighborhood
Recd: 09/28/2017 Due: 10/05/2017 ____ pages

Distribution: WHITE => original (accompanies samples; returned with results) : YELLOW => laboratory copy : PINK => sampler's copy

v130325002

1941 Reymet Road ● Richmond, Virginia 23237 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 17I0856

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian, VA 23113	Date Received:	September 28, 2017 13:36
		Date Issued:	October 24, 2017 12:34
		Project Number:	757004-001
Submitted To:	Mark Ryland	Purchase Order:	
Client Site I.D.:	Old Oaks Neighborhood		

Enclosed are the results of analyses for samples received by the laboratory on 09/28/2017 13:36. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

Ted Soyars

Ted Soyars
Laboratory Manager

End Notes:

The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

This report shall not be reproduced except in full without the expressed and written approval of an authorized representative of Air Water & Soil Laboratories, Inc.

Accredited in accordance with nelac
Commonwealth of Virginia, DCLS
Accreditation # 460021

NWBOC EDWOSB Certified

Certified SWaM Small, Women and Minority-Owned
Supplier Diversity Strengthens the Commonwealth
by the Virginia Department of Minority Business Enterprise

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

ANALYTICAL REPORT FOR SAMPLES

Laboratory Order ID 17I0856

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
92817001-1 Trip Blank	17I0856-01	Ground Water	10/24/2016 09:00	09/28/2017 13:36
92817001-2 Trip Blank	17I0856-02	Ground Water	09/27/2017 15:50	09/28/2017 13:36
92817001-3 1504 Old Oaks FB	17I0856-03	Ground Water	09/28/2017 09:46	09/28/2017 13:36
92817001-4 1504 Old Oaks	17I0856-04	Ground Water	09/28/2017 10:00	09/28/2017 13:36
92817001-5 1470 Old Oaks FB	17I0856-05	Ground Water	09/28/2017 01:40	09/28/2017 13:36
92817001-8 1470 Old Oaks	17I0856-06	Ground Water	09/28/2017 10:50	09/28/2017 13:36
92817001-7 1253 Cardwell Road FB	17I0856-07	Ground Water	09/28/2017 11:10	09/28/2017 13:36
92817001-8 1253 Cardwell Road	17I0856-08	Ground Water	09/28/2017 11:20	09/28/2017 13:36
92817001-9 1267 Cardwell Road FB	17I0856-09	Ground Water	09/28/2017 11:36	09/28/2017 13:36
92817001-10 1267 Cardwell Road	17I0856-10	Ground Water	09/28/2017 11:46	09/28/2017 13:36

This Certificate of Analysis is being reissued on October 24, 2017 to include TBA and TAA data per the client's request.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-1 Trip Blank **Laboratory Sample ID:** 17I0856-01

Grab Date/Time: 10/24/2016 09:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	01	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:21	10/03/17 08:57	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-2 Trip Blank **Laboratory Sample ID:** 17I0856-02

Grab Date/Time: 09/27/2017 15:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	02	SW8260B	<0.40 ug/L		0.40	1	09/29/17 11:32	09/29/17 11:32	KCS
1,1,1-Trichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,1,2,2-Tetrachloroethane	02	SW8260B	<0.40 ug/L		0.40	1	09/29/17 11:32	09/29/17 11:32	KCS
1,1,2-Trichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,1-Dichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,1-Dichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,1-Dichloropropene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,2,3-Trichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,2,3-Trichloropropane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,2,4-Trichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,2,4-Trimethylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,2-Dibromo-3-chloropropane (DBCP)	02	SW8260B	<4.00 ug/L		4.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,2-Dibromoethane (EDB)	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,2-Dichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,2-Dichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,2-Dichloropropane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,3,5-Trimethylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,3-Dichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,3-Dichloropropane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
1,4-Dichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
2,2-Dichloropropane	02	SW8260B	<2.00 ug/L		2.00	1	09/29/17 11:32	09/29/17 11:32	KCS
2-Butanone (MEK)	02	SW8260B	<10.0 ug/L		10.0	1	09/29/17 11:32	09/29/17 11:32	KCS
2-Chlorotoluene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
2-Hexanone (MBK)	02	SW8260B	<5.00 ug/L		5.00	1	09/29/17 11:32	09/29/17 11:32	KCS
4-Chlorotoluene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
4-Isopropyltoluene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-2 Trip Blank **Laboratory Sample ID:** 17I0856-02

Grab Date/Time: 09/27/2017 15:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	02	SW8260B	<5.00 ug/L		5.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Acetone	02	SW8260B	<10.0 ug/L		10.0	1	09/29/17 11:32	09/29/17 11:32	KCS
Benzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Bromobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Bromochloromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Bromodichloromethane	02	SW8260B	<0.50 ug/L		0.50	1	09/29/17 11:32	09/29/17 11:32	KCS
Bromoform	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Bromomethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Carbon disulfide	02	SW8260B	<10.0 ug/L		10.0	1	09/29/17 11:32	09/29/17 11:32	KCS
Carbon tetrachloride	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Chlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Chloroethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Chloroform	02	SW8260B	<0.50 ug/L		0.50	1	09/29/17 11:32	09/29/17 11:32	KCS
Chloromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
cis-1,2-Dichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
cis-1,3-Dichloropropene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Dibromochloromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Dibromomethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Dichlorodifluoromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Di-isopropyl ether (DIPE)	02	SW8260B	<5.00 ug/L		5.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Ethylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Hexachlorobutadiene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Iodomethane	02	SW8260B	<10.0 ug/L		10.0	1	09/29/17 11:32	09/29/17 11:32	KCS
Isopropylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
m+p-Xylenes	02	SW8260B	<2.00 ug/L		2.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Methylene chloride	02	SW8260B	<4.00 ug/L		4.00	1	09/29/17 11:32	09/29/17 11:32	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-2 Trip Blank **Laboratory Sample ID:** 17I0856-02

Grab Date/Time: 09/27/2017 15:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Naphthalene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
n-Butylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
n-Propylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
o-Xylene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
sec-Butylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Styrene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
TAA	02	SW8260B	<25.0 ug/L		25.0	1	09/29/17 11:32	09/29/17 11:32	KCS
TBA	02	SW8260B	<100 ug/L		100	1	09/29/17 11:32	09/29/17 11:32	KCS
tert-Butylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Tetrachloroethylene (PCE)	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Toluene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
trans-1,2-Dichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
trans-1,3-Dichloropropene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Trichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Trichlorofluoromethane	02	SW8260B	<1.00 ug/L		1.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Vinyl acetate	02	SW8260B	<10.0 ug/L		10.0	1	09/29/17 11:32	09/29/17 11:32	KCS
Vinyl chloride	02	SW8260B	<0.50 ug/L		0.50	1	09/29/17 11:32	09/29/17 11:32	KCS
Xylenes, Total	02	SW8260B	<3.00 ug/L		3.00	1	09/29/17 11:32	09/29/17 11:32	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*02*	*SW8260B*	*106 %*		*70-120*		*09/29/17 11:32*	*09/29/17 11:32*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*02*	*SW8260B*	*91.9 %*		*75-120*		*09/29/17 11:32*	*09/29/17 11:32*	*KCS*
Surr: Dibromofluoromethane (Surr)	*02*	*SW8260B*	*105 %*		*80-119*		*09/29/17 11:32*	*09/29/17 11:32*	*KCS*
Surr: Toluene-d8 (Surr)	*02*	*SW8260B*	*99.0 %*		*85-120*		*09/29/17 11:32*	*09/29/17 11:32*	*KCS*

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-3 1504 Old Oaks FB **Laboratory Sample ID:** 17I0856-03

Grab Date/Time: 09/28/2017 09:46

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	03	SW8260B	<0.40 ug/L		0.40	1	09/29/17 13:31	09/29/17 13:31	KCS
1,1,1-Trichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,1,2,2-Tetrachloroethane	03	SW8260B	<0.40 ug/L		0.40	1	09/29/17 13:31	09/29/17 13:31	KCS
1,1,2-Trichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,1-Dichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,1-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,1-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,2,3-Trichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,2,3-Trichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,2,4-Trichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,2,4-Trimethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,2-Dibromo-3-chloropropane (DBCP)	03	SW8260B	<4.00 ug/L		4.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,2-Dibromoethane (EDB)	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,2-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,2-Dichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,2-Dichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,3,5-Trimethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,3-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,3-Dichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
1,4-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
2,2-Dichloropropane	03	SW8260B	<2.00 ug/L		2.00	1	09/29/17 13:31	09/29/17 13:31	KCS
2-Butanone (MEK)	03	SW8260B	<10.0 ug/L		10.0	1	09/29/17 13:31	09/29/17 13:31	KCS
2-Chlorotoluene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
2-Hexanone (MBK)	03	SW8260B	<5.00 ug/L		5.00	1	09/29/17 13:31	09/29/17 13:31	KCS
4-Chlorotoluene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
4-Isopropyltoluene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-3 1504 Old Oaks FB **Laboratory Sample ID:** 17I0856-03

Grab Date/Time: 09/28/2017 09:46

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	03	SW8260B	<5.00 ug/L		5.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Acetone	03	SW8260B	<10.0 ug/L		10.0	1	09/29/17 13:31	09/29/17 13:31	KCS
Benzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Bromobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Bromochloromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Bromodichloromethane	03	SW8260B	<0.50 ug/L		0.50	1	09/29/17 13:31	09/29/17 13:31	KCS
Bromoform	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Bromomethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Carbon disulfide	03	SW8260B	<10.0 ug/L		10.0	1	09/29/17 13:31	09/29/17 13:31	KCS
Carbon tetrachloride	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Chlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Chloroethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Chloroform	03	SW8260B	<0.50 ug/L		0.50	1	09/29/17 13:31	09/29/17 13:31	KCS
Chloromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
cis-1,2-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
cis-1,3-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Dibromochloromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Dibromomethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Dichlorodifluoromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Di-isopropyl ether (DIPE)	03	SW8260B	<5.00 ug/L		5.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Ethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Hexachlorobutadiene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Iodomethane	03	SW8260B	<10.0 ug/L		10.0	1	09/29/17 13:31	09/29/17 13:31	KCS
Isopropylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
m+p-Xylenes	03	SW8260B	<2.00 ug/L		2.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Methylene chloride	03	SW8260B	<4.00 ug/L		4.00	1	09/29/17 13:31	09/29/17 13:31	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-3 1504 Old Oaks FB **Laboratory Sample ID:** 17I0856-03

Grab Date/Time: 09/28/2017 09:46

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Naphthalene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
n-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
n-Propylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
o-Xylene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
sec-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Styrene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
TAA	03	SW8260B	<25.0 ug/L		25.0	1	09/29/17 13:31	09/29/17 13:31	KCS
TBA	03	SW8260B	<100 ug/L		100	1	09/29/17 13:31	09/29/17 13:31	KCS
tert-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Tetrachloroethylene (PCE)	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Toluene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
trans-1,2-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
trans-1,3-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Trichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Trichlorofluoromethane	03	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Vinyl acetate	03	SW8260B	<10.0 ug/L		10.0	1	09/29/17 13:31	09/29/17 13:31	KCS
Vinyl chloride	03	SW8260B	<0.50 ug/L		0.50	1	09/29/17 13:31	09/29/17 13:31	KCS
Xylenes, Total	03	SW8260B	<3.00 ug/L		3.00	1	09/29/17 13:31	09/29/17 13:31	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*03*	*SW8260B*	*103 %*		*70-120*		*09/29/17 13:31*	*09/29/17 13:31*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*03*	*SW8260B*	*91.8 %*		*75-120*		*09/29/17 13:31*	*09/29/17 13:31*	*KCS*
Surr: Dibromofluoromethane (Surr)	*03*	*SW8260B*	*105 %*		*80-119*		*09/29/17 13:31*	*09/29/17 13:31*	*KCS*
Surr: Toluene-d8 (Surr)	*03*	*SW8260B*	*101 %*		*85-120*		*09/29/17 13:31*	*09/29/17 13:31*	*KCS*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-3 1504 Old Oaks FB **Laboratory Sample ID:** 17I0856-03

Grab Date/Time: 09/28/2017 09:46

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	03	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:21	10/03/17 09:16	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-4 1504 Old Oaks **Laboratory Sample ID:** 17I0856-04

Grab Date/Time: 09/28/2017 10:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	04	SW8260B	<0.40 ug/L		0.40	1	09/29/17 16:40	09/29/17 16:40	KCS
1,1,1-Trichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,1,2,2-Tetrachloroethane	04	SW8260B	<0.40 ug/L		0.40	1	09/29/17 16:40	09/29/17 16:40	KCS
1,1,2-Trichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,1-Dichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,1-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,1-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,2,3-Trichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,2,3-Trichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,2,4-Trichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,2,4-Trimethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,2-Dibromo-3-chloropropane (DBCP)	04	SW8260B	<4.00 ug/L		4.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,2-Dibromoethane (EDB)	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,2-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,2-Dichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,2-Dichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,3,5-Trimethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,3-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,3-Dichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
1,4-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
2,2-Dichloropropane	04	SW8260B	<2.00 ug/L		2.00	1	09/29/17 16:40	09/29/17 16:40	KCS
2-Butanone (MEK)	04	SW8260B	<10.0 ug/L		10.0	1	09/29/17 16:40	09/29/17 16:40	KCS
2-Chlorotoluene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
2-Hexanone (MBK)	04	SW8260B	<5.00 ug/L		5.00	1	09/29/17 16:40	09/29/17 16:40	KCS
4-Chlorotoluene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
4-Isopropyltoluene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-4 1504 Old Oaks **Laboratory Sample ID:** 17I0856-04

Grab Date/Time: 09/28/2017 10:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	04	SW8260B	<5.00 ug/L		5.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Acetone	04	SW8260B	<10.0 ug/L		10.0	1	09/29/17 16:40	09/29/17 16:40	KCS
Benzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Bromobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Bromochloromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Bromodichloromethane	04	SW8260B	<0.50 ug/L		0.50	1	09/29/17 16:40	09/29/17 16:40	KCS
Bromoform	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Bromomethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Carbon disulfide	04	SW8260B	<10.0 ug/L		10.0	1	09/29/17 16:40	09/29/17 16:40	KCS
Carbon tetrachloride	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Chlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Chloroethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Chloroform	04	SW8260B	<0.50 ug/L		0.50	1	09/29/17 16:40	09/29/17 16:40	KCS
Chloromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
cis-1,2-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
cis-1,3-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Dibromochloromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Dibromomethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Dichlorodifluoromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Di-isopropyl ether (DIPE)	04	SW8260B	<5.00 ug/L		5.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Ethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Hexachlorobutadiene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Iodomethane	04	SW8260B	<10.0 ug/L		10.0	1	09/29/17 16:40	09/29/17 16:40	KCS
Isopropylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
m+p-Xylenes	04	SW8260B	<2.00 ug/L		2.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Methylene chloride	04	SW8260B	<4.00 ug/L		4.00	1	09/29/17 16:40	09/29/17 16:40	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-4 1504 Old Oaks **Laboratory Sample ID:** 17I0856-04

Grab Date/Time: 09/28/2017 10:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Naphthalene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
n-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
n-Propylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
o-Xylene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
sec-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Styrene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
TAA	04	SW8260B	<25.0 ug/L		25.0	1	09/29/17 16:40	09/29/17 16:40	KCS
TBA	04	SW8260B	<100 ug/L		100	1	09/29/17 16:40	09/29/17 16:40	KCS
tert-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Tetrachloroethylene (PCE)	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Toluene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
trans-1,2-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
trans-1,3-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Trichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Trichlorofluoromethane	04	SW8260B	<1.00 ug/L		1.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Vinyl acetate	04	SW8260B	<10.0 ug/L		10.0	1	09/29/17 16:40	09/29/17 16:40	KCS
Vinyl chloride	04	SW8260B	<0.50 ug/L		0.50	1	09/29/17 16:40	09/29/17 16:40	KCS
Xylenes, Total	04	SW8260B	<3.00 ug/L		3.00	1	09/29/17 16:40	09/29/17 16:40	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*04*	*SW8260B*	*101 %*		*70-120*		*09/29/17 16:40*	*09/29/17 16:40*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*04*	*SW8260B*	*92.1 %*		*75-120*		*09/29/17 16:40*	*09/29/17 16:40*	*KCS*
Surr: Dibromofluoromethane (Surr)	*04*	*SW8260B*	*107 %*		*80-119*		*09/29/17 16:40*	*09/29/17 16:40*	*KCS*
Surr: Toluene-d8 (Surr)	*04*	*SW8260B*	*102 %*		*85-120*		*09/29/17 16:40*	*09/29/17 16:40*	*KCS*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-4 1504 Old Oaks **Laboratory Sample ID:** 17I0856-04

Grab Date/Time: 09/28/2017 10:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	04	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:21	10/03/17 09:36	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-5 1470 Old Oaks FB **Laboratory Sample ID:** 17I0856-05

Grab Date/Time: 09/28/2017 01:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	05	SW8260B	<0.40 ug/L		0.40	1	09/29/17 13:54	09/29/17 13:54	KCS
1,1,1-Trichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,1,2,2-Tetrachloroethane	05	SW8260B	<0.40 ug/L		0.40	1	09/29/17 13:54	09/29/17 13:54	KCS
1,1,2-Trichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,1-Dichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,1-Dichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,1-Dichloropropene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,2,3-Trichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,2,3-Trichloropropane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,2,4-Trichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,2,4-Trimethylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,2-Dibromo-3-chloropropane (DBCP)	05	SW8260B	<4.00 ug/L		4.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,2-Dibromoethane (EDB)	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,2-Dichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,2-Dichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,2-Dichloropropane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,3,5-Trimethylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,3-Dichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,3-Dichloropropane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
1,4-Dichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
2,2-Dichloropropane	05	SW8260B	<2.00 ug/L		2.00	1	09/29/17 13:54	09/29/17 13:54	KCS
2-Butanone (MEK)	05	SW8260B	<10.0 ug/L		10.0	1	09/29/17 13:54	09/29/17 13:54	KCS
2-Chlorotoluene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
2-Hexanone (MBK)	05	SW8260B	<5.00 ug/L		5.00	1	09/29/17 13:54	09/29/17 13:54	KCS
4-Chlorotoluene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
4-Isopropyltoluene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-5 1470 Old Oaks FB **Laboratory Sample ID:** 17I0856-05

Grab Date/Time: 09/28/2017 01:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	05	SW8260B	<5.00 ug/L		5.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Acetone	05	SW8260B	<10.0 ug/L		10.0	1	09/29/17 13:54	09/29/17 13:54	KCS
Benzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Bromobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Bromochloromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Bromodichloromethane	05	SW8260B	<0.50 ug/L		0.50	1	09/29/17 13:54	09/29/17 13:54	KCS
Bromoform	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Bromomethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Carbon disulfide	05	SW8260B	<10.0 ug/L		10.0	1	09/29/17 13:54	09/29/17 13:54	KCS
Carbon tetrachloride	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Chlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Chloroethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Chloroform	05	SW8260B	<0.50 ug/L		0.50	1	09/29/17 13:54	09/29/17 13:54	KCS
Chloromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
cis-1,2-Dichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
cis-1,3-Dichloropropene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Dibromochloromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Dibromomethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Dichlorodifluoromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Di-isopropyl ether (DIPE)	05	SW8260B	<5.00 ug/L		5.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Ethylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Hexachlorobutadiene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Iodomethane	05	SW8260B	<10.0 ug/L		10.0	1	09/29/17 13:54	09/29/17 13:54	KCS
Isopropylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
m+p-Xylenes	05	SW8260B	<2.00 ug/L		2.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Methylene chloride	05	SW8260B	<4.00 ug/L		4.00	1	09/29/17 13:54	09/29/17 13:54	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-5 1470 Old Oaks FB **Laboratory Sample ID:** 17I0856-05

Grab Date/Time: 09/28/2017 01:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Naphthalene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
n-Butylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
n-Propylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
o-Xylene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
sec-Butylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Styrene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
TAA	05	SW8260B	<25.0 ug/L		25.0	1	09/29/17 13:54	09/29/17 13:54	KCS
TBA	05	SW8260B	<100 ug/L		100	1	09/29/17 13:54	09/29/17 13:54	KCS
tert-Butylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Tetrachloroethylene (PCE)	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Toluene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
trans-1,2-Dichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
trans-1,3-Dichloropropene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Trichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Trichlorofluoromethane	05	SW8260B	<1.00 ug/L		1.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Vinyl acetate	05	SW8260B	<10.0 ug/L		10.0	1	09/29/17 13:54	09/29/17 13:54	KCS
Vinyl chloride	05	SW8260B	<0.50 ug/L		0.50	1	09/29/17 13:54	09/29/17 13:54	KCS
Xylenes, Total	05	SW8260B	<3.00 ug/L		3.00	1	09/29/17 13:54	09/29/17 13:54	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*05*	*SW8260B*	*105 %*		*70-120*		*09/29/17 13:54*	*09/29/17 13:54*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*05*	*SW8260B*	*90.8 %*		*75-120*		*09/29/17 13:54*	*09/29/17 13:54*	*KCS*
Surr: Dibromofluoromethane (Surr)	*05*	*SW8260B*	*108 %*		*80-119*		*09/29/17 13:54*	*09/29/17 13:54*	*KCS*
Surr: Toluene-d8 (Surr)	*05*	*SW8260B*	*99.3 %*		*85-120*		*09/29/17 13:54*	*09/29/17 13:54*	*KCS*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-5 1470 Old Oaks FB **Laboratory Sample ID:** 17I0856-05

Grab Date/Time: 09/28/2017 01:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	05	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:21	10/03/17 09:55	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-8 1470 Old Oaks **Laboratory Sample ID:** 17I0856-06

Grab Date/Time: 09/28/2017 10:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS				**CI**					
1,1,1,2-Tetrachloroethane	06	SW8260B	<0.40 ug/L		0.40	1	09/29/17 17:04	09/29/17 17:04	KCS
1,1,1-Trichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,1,2,2-Tetrachloroethane	06	SW8260B	<0.40 ug/L		0.40	1	09/29/17 17:04	09/29/17 17:04	KCS
1,1,2-Trichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,1-Dichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,1-Dichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,1-Dichloropropene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,2,3-Trichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,2,3-Trichloropropane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,2,4-Trichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,2,4-Trimethylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,2-Dibromo-3-chloropropane (DBCP)	06	SW8260B	<4.00 ug/L		4.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,2-Dibromoethane (EDB)	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,2-Dichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,2-Dichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,2-Dichloropropane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,3,5-Trimethylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,3-Dichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,3-Dichloropropane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
1,4-Dichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
2,2-Dichloropropane	06	SW8260B	<2.00 ug/L		2.00	1	09/29/17 17:04	09/29/17 17:04	KCS
2-Butanone (MEK)	06	SW8260B	<10.0 ug/L		10.0	1	09/29/17 17:04	09/29/17 17:04	KCS
2-Chlorotoluene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
2-Hexanone (MBK)	06	SW8260B	<5.00 ug/L		5.00	1	09/29/17 17:04	09/29/17 17:04	KCS
4-Chlorotoluene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
4-Isopropyltoluene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-8 1470 Old Oaks **Laboratory Sample ID:** 17I0856-06

Grab Date/Time: 09/28/2017 10:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS				**CI**					
4-Methyl-2-pentanone (MIBK)	06	SW8260B	<5.00 ug/L		5.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Acetone	06	SW8260B	<10.0 ug/L		10.0	1	09/29/17 17:04	09/29/17 17:04	KCS
Benzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Bromobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Bromochloromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Bromodichloromethane	06	SW8260B	<0.50 ug/L		0.50	1	09/29/17 17:04	09/29/17 17:04	KCS
Bromoform	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Bromomethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Carbon disulfide	06	SW8260B	<10.0 ug/L		10.0	1	09/29/17 17:04	09/29/17 17:04	KCS
Carbon tetrachloride	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Chlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Chloroethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Chloroform	06	SW8260B	<0.50 ug/L		0.50	1	09/29/17 17:04	09/29/17 17:04	KCS
Chloromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
cis-1,2-Dichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
cis-1,3-Dichloropropene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Dibromochloromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Dibromomethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Dichlorodifluoromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Di-isopropyl ether (DIPE)	06	SW8260B	<5.00 ug/L		5.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Ethylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Hexachlorobutadiene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Iodomethane	06	SW8260B	<10.0 ug/L		10.0	1	09/29/17 17:04	09/29/17 17:04	KCS
Isopropylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
m+p-Xylenes	06	SW8260B	<2.00 ug/L		2.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Methylene chloride	06	SW8260B	<4.00 ug/L		4.00	1	09/29/17 17:04	09/29/17 17:04	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-8 1470 Old Oaks **Laboratory Sample ID:** 17I0856-06

Grab Date/Time: 09/28/2017 10:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS				**CI**					
Methyl-t-butyl ether (MTBE)	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Naphthalene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
n-Butylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
n-Propylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
o-Xylene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
sec-Butylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Styrene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
TAA	06	SW8260B	<25.0 ug/L		25.0	1	09/29/17 17:04	09/29/17 17:04	KCS
TBA	06	SW8260B	<100 ug/L		100	1	09/29/17 17:04	09/29/17 17:04	KCS
tert-Butylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Tetrachloroethylene (PCE)	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Toluene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
trans-1,2-Dichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
trans-1,3-Dichloropropene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Trichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Trichlorofluoromethane	06	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Vinyl acetate	06	SW8260B	<10.0 ug/L		10.0	1	09/29/17 17:04	09/29/17 17:04	KCS
Vinyl chloride	06	SW8260B	<0.50 ug/L		0.50	1	09/29/17 17:04	09/29/17 17:04	KCS
Xylenes, Total	06	SW8260B	<3.00 ug/L		3.00	1	09/29/17 17:04	09/29/17 17:04	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*06*	*SW8260B*	*86.6 %*		*70-120*		*09/29/17 17:04*	*09/29/17 17:04*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*06*	*SW8260B*	*90.5 %*		*75-120*		*09/29/17 17:04*	*09/29/17 17:04*	*KCS*
Surr: Dibromofluoromethane (Surr)	*06*	*SW8260B*	*81.8 %*		*80-119*		*09/29/17 17:04*	*09/29/17 17:04*	*KCS*
Surr: Toluene-d8 (Surr)	*06*	*SW8260B*	*102 %*		*85-120*		*09/29/17 17:04*	*09/29/17 17:04*	*KCS*

Micro-extractables by GC/ECD

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-8 1470 Old Oaks **Laboratory Sample ID:** 17I0856-06

Grab Date/Time: 09/28/2017 10:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	06	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:21	10/03/17 10:14	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-7 1253 Cardwell Road FB **Laboratory Sample ID:** 17I0856-07

Grab Date/Time: 09/28/2017 11:10

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	07	SW8260B	<0.40 ug/L		0.40	1	09/29/17 14:18	09/29/17 14:18	KCS
1,1,1-Trichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,1,2,2-Tetrachloroethane	07	SW8260B	<0.40 ug/L		0.40	1	09/29/17 14:18	09/29/17 14:18	KCS
1,1,2-Trichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,1-Dichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,1-Dichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,1-Dichloropropene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,2,3-Trichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,2,3-Trichloropropane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,2,4-Trichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,2,4-Trimethylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,2-Dibromo-3-chloropropane (DBCP)	07	SW8260B	<4.00 ug/L		4.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,2-Dibromoethane (EDB)	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,2-Dichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,2-Dichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,2-Dichloropropane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,3,5-Trimethylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,3-Dichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,3-Dichloropropane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
1,4-Dichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
2,2-Dichloropropane	07	SW8260B	<2.00 ug/L		2.00	1	09/29/17 14:18	09/29/17 14:18	KCS
2-Butanone (MEK)	07	SW8260B	<10.0 ug/L		10.0	1	09/29/17 14:18	09/29/17 14:18	KCS
2-Chlorotoluene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
2-Hexanone (MBK)	07	SW8260B	<5.00 ug/L		5.00	1	09/29/17 14:18	09/29/17 14:18	KCS
4-Chlorotoluene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
4-Isopropyltoluene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-7 1253 Cardwell Road FB **Laboratory Sample ID:** 17I0856-07

Grab Date/Time: 09/28/2017 11:10

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	07	SW8260B	<5.00 ug/L		5.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Acetone	07	SW8260B	<10.0 ug/L		10.0	1	09/29/17 14:18	09/29/17 14:18	KCS
Benzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Bromobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Bromochloromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Bromodichloromethane	07	SW8260B	<0.50 ug/L		0.50	1	09/29/17 14:18	09/29/17 14:18	KCS
Bromoform	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Bromomethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Carbon disulfide	07	SW8260B	<10.0 ug/L		10.0	1	09/29/17 14:18	09/29/17 14:18	KCS
Carbon tetrachloride	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Chlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Chloroethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Chloroform	07	SW8260B	<0.50 ug/L		0.50	1	09/29/17 14:18	09/29/17 14:18	KCS
Chloromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
cis-1,2-Dichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
cis-1,3-Dichloropropene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Dibromochloromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Dibromomethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Dichlorodifluoromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Di-isopropyl ether (DIPE)	07	SW8260B	<5.00 ug/L		5.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Ethylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Hexachlorobutadiene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Iodomethane	07	SW8260B	<10.0 ug/L		10.0	1	09/29/17 14:18	09/29/17 14:18	KCS
Isopropylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
m+p-Xylenes	07	SW8260B	<2.00 ug/L		2.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Methylene chloride	07	SW8260B	<4.00 ug/L		4.00	1	09/29/17 14:18	09/29/17 14:18	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-7 1253 Cardwell Road FB **Laboratory Sample ID:** 17I0856-07

Grab Date/Time: 09/28/2017 11:10

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Naphthalene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
n-Butylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
n-Propylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
o-Xylene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
sec-Butylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Styrene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
TAA	07	SW8260B	<25.0 ug/L		25.0	1	09/29/17 14:18	09/29/17 14:18	KCS
TBA	07	SW8260B	<100 ug/L		100	1	09/29/17 14:18	09/29/17 14:18	KCS
tert-Butylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Tetrachloroethylene (PCE)	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Toluene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
trans-1,2-Dichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
trans-1,3-Dichloropropene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Trichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Trichlorofluoromethane	07	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Vinyl acetate	07	SW8260B	<10.0 ug/L		10.0	1	09/29/17 14:18	09/29/17 14:18	KCS
Vinyl chloride	07	SW8260B	<0.50 ug/L		0.50	1	09/29/17 14:18	09/29/17 14:18	KCS
Xylenes, Total	07	SW8260B	<3.00 ug/L		3.00	1	09/29/17 14:18	09/29/17 14:18	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*07*	*SW8260B*	*106 %*		*70-120*		*09/29/17 14:18*	*09/29/17 14:18*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*07*	*SW8260B*	*90.3 %*		*75-120*		*09/29/17 14:18*	*09/29/17 14:18*	*KCS*
Surr: Dibromofluoromethane (Surr)	*07*	*SW8260B*	*109 %*		*80-119*		*09/29/17 14:18*	*09/29/17 14:18*	*KCS*
Surr: Toluene-d8 (Surr)	*07*	*SW8260B*	*100 %*		*85-120*		*09/29/17 14:18*	*09/29/17 14:18*	*KCS*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-7 1253 Cardwell Road FB **Laboratory Sample ID:** 17I0856-07

Grab Date/Time: 09/28/2017 11:10

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	07	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:21	10/03/17 10:34	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-8 1253 Cardwell Road **Laboratory Sample ID:** 17I0856-08

Grab Date/Time: 09/28/2017 11:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	08	SW8260B	<0.40 ug/L		0.40	1	09/29/17 17:28	09/29/17 17:28	KCS
1,1,1-Trichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,1,2,2-Tetrachloroethane	08	SW8260B	<0.40 ug/L		0.40	1	09/29/17 17:28	09/29/17 17:28	KCS
1,1,2-Trichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,1-Dichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,1-Dichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,1-Dichloropropene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,2,3-Trichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,2,3-Trichloropropane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,2,4-Trichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,2,4-Trimethylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,2-Dibromo-3-chloropropane (DBCP)	08	SW8260B	<4.00 ug/L		4.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,2-Dibromoethane (EDB)	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,2-Dichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,2-Dichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,2-Dichloropropane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,3,5-Trimethylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,3-Dichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,3-Dichloropropane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
1,4-Dichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
2,2-Dichloropropane	08	SW8260B	<2.00 ug/L		2.00	1	09/29/17 17:28	09/29/17 17:28	KCS
2-Butanone (MEK)	08	SW8260B	<10.0 ug/L		10.0	1	09/29/17 17:28	09/29/17 17:28	KCS
2-Chlorotoluene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
2-Hexanone (MBK)	08	SW8260B	<5.00 ug/L		5.00	1	09/29/17 17:28	09/29/17 17:28	KCS
4-Chlorotoluene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
4-Isopropyltoluene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-8 1253 Cardwell Road **Laboratory Sample ID:** 17I0856-08

Grab Date/Time: 09/28/2017 11:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	08	SW8260B	<5.00 ug/L		5.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Acetone	08	SW8260B	<10.0 ug/L		10.0	1	09/29/17 17:28	09/29/17 17:28	KCS
Benzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Bromobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Bromochloromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Bromodichloromethane	08	SW8260B	<0.50 ug/L		0.50	1	09/29/17 17:28	09/29/17 17:28	KCS
Bromoform	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Bromomethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Carbon disulfide	08	SW8260B	<10.0 ug/L		10.0	1	09/29/17 17:28	09/29/17 17:28	KCS
Carbon tetrachloride	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Chlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Chloroethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Chloroform	08	SW8260B	<0.50 ug/L		0.50	1	09/29/17 17:28	09/29/17 17:28	KCS
Chloromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
cis-1,2-Dichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
cis-1,3-Dichloropropene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Dibromochloromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Dibromomethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Dichlorodifluoromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Di-isopropyl ether (DIPE)	08	SW8260B	<5.00 ug/L		5.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Ethylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Hexachlorobutadiene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Iodomethane	08	SW8260B	<10.0 ug/L		10.0	1	09/29/17 17:28	09/29/17 17:28	KCS
Isopropylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
m+p-Xylenes	08	SW8260B	<2.00 ug/L		2.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Methylene chloride	08	SW8260B	<4.00 ug/L		4.00	1	09/29/17 17:28	09/29/17 17:28	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-8 1253 Cardwell Road **Laboratory Sample ID:** 17I0856-08

Grab Date/Time: 09/28/2017 11:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Naphthalene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
n-Butylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
n-Propylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
o-Xylene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
sec-Butylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Styrene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
TAA	08	SW8260B	<25.0 ug/L		25.0	1	09/29/17 17:28	09/29/17 17:28	KCS
TBA	08	SW8260B	<100 ug/L		100	1	09/29/17 17:28	09/29/17 17:28	KCS
tert-Butylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Tetrachloroethylene (PCE)	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Toluene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
trans-1,2-Dichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
trans-1,3-Dichloropropene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Trichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Trichlorofluoromethane	08	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Vinyl acetate	08	SW8260B	<10.0 ug/L		10.0	1	09/29/17 17:28	09/29/17 17:28	KCS
Vinyl chloride	08	SW8260B	<0.50 ug/L		0.50	1	09/29/17 17:28	09/29/17 17:28	KCS
Xylenes, Total	08	SW8260B	<3.00 ug/L		3.00	1	09/29/17 17:28	09/29/17 17:28	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*08*	*SW8260B*	*97.7 %*		*70-120*		*09/29/17 17:28*	*09/29/17 17:28*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*08*	*SW8260B*	*89.7 %*		*75-120*		*09/29/17 17:28*	*09/29/17 17:28*	*KCS*
Surr: Dibromofluoromethane (Surr)	*08*	*SW8260B*	*108 %*		*80-119*		*09/29/17 17:28*	*09/29/17 17:28*	*KCS*
Surr: Toluene-d8 (Surr)	*08*	*SW8260B*	*99.9 %*		*85-120*		*09/29/17 17:28*	*09/29/17 17:28*	*KCS*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-8 1253 Cardwell Road **Laboratory Sample ID:** 17I0856-08

Grab Date/Time: 09/28/2017 11:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	08	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:21	10/03/17 10:53	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-9 1267 Cardwell Road FB **Laboratory Sample ID:** 17I0856-09

Grab Date/Time: 09/28/2017 11:36

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	09	SW8260B	<0.40 ug/L		0.40	1	09/29/17 14:42	09/29/17 14:42	KCS
1,1,1-Trichloroethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,1,2,2-Tetrachloroethane	09	SW8260B	<0.40 ug/L		0.40	1	09/29/17 14:42	09/29/17 14:42	KCS
1,1,2-Trichloroethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,1-Dichloroethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,1-Dichloroethylene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,1-Dichloropropene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,2,3-Trichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,2,3-Trichloropropane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,2,4-Trichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,2,4-Trimethylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,2-Dibromo-3-chloropropane (DBCP)	09	SW8260B	<4.00 ug/L		4.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,2-Dibromoethane (EDB)	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,2-Dichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,2-Dichloroethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,2-Dichloropropane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,3,5-Trimethylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,3-Dichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,3-Dichloropropane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
1,4-Dichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
2,2-Dichloropropane	09	SW8260B	<2.00 ug/L		2.00	1	09/29/17 14:42	09/29/17 14:42	KCS
2-Butanone (MEK)	09	SW8260B	<10.0 ug/L		10.0	1	09/29/17 14:42	09/29/17 14:42	KCS
2-Chlorotoluene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
2-Hexanone (MBK)	09	SW8260B	<5.00 ug/L		5.00	1	09/29/17 14:42	09/29/17 14:42	KCS
4-Chlorotoluene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
4-Isopropyltoluene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-9 1267 Cardwell Road FB **Laboratory Sample ID:** 17I0856-09

Grab Date/Time: 09/28/2017 11:36

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	09	SW8260B	<5.00 ug/L		5.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Acetone	09	SW8260B	<10.0 ug/L		10.0	1	09/29/17 14:42	09/29/17 14:42	KCS
Benzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Bromobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Bromochloromethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Bromodichloromethane	09	SW8260B	<0.50 ug/L		0.50	1	09/29/17 14:42	09/29/17 14:42	KCS
Bromoform	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Bromomethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Carbon disulfide	09	SW8260B	<10.0 ug/L		10.0	1	09/29/17 14:42	09/29/17 14:42	KCS
Carbon tetrachloride	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Chlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Chloroethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Chloroform	09	SW8260B	<0.50 ug/L		0.50	1	09/29/17 14:42	09/29/17 14:42	KCS
Chloromethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
cis-1,2-Dichloroethylene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
cis-1,3-Dichloropropene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Dibromochloromethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Dibromomethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Dichlorodifluoromethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Di-isopropyl ether (DIPE)	09	SW8260B	<5.00 ug/L		5.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Ethylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Hexachlorobutadiene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Iodomethane	09	SW8260B	<10.0 ug/L		10.0	1	09/29/17 14:42	09/29/17 14:42	KCS
Isopropylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
m+p-Xylenes	09	SW8260B	<2.00 ug/L		2.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Methylene chloride	09	SW8260B	<4.00 ug/L		4.00	1	09/29/17 14:42	09/29/17 14:42	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-9 1267 Cardwell Road FB **Laboratory Sample ID:** 17I0856-09

Grab Date/Time: 09/28/2017 11:36

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Naphthalene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
n-Butylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
n-Propylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
o-Xylene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
sec-Butylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Styrene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
TAA	09	SW8260B	<25.0 ug/L		25.0	1	09/29/17 14:42	09/29/17 14:42	KCS
TBA	09	SW8260B	<100 ug/L		100	1	09/29/17 14:42	09/29/17 14:42	KCS
tert-Butylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Tetrachloroethylene (PCE)	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Toluene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
trans-1,2-Dichloroethylene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
trans-1,3-Dichloropropene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Trichloroethylene	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Trichlorofluoromethane	09	SW8260B	<1.00 ug/L		1.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Vinyl acetate	09	SW8260B	<10.0 ug/L		10.0	1	09/29/17 14:42	09/29/17 14:42	KCS
Vinyl chloride	09	SW8260B	<0.50 ug/L		0.50	1	09/29/17 14:42	09/29/17 14:42	KCS
Xylenes, Total	09	SW8260B	<3.00 ug/L		3.00	1	09/29/17 14:42	09/29/17 14:42	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*09*	*SW8260B*	*105 %*		*70-120*		*09/29/17 14:42*	*09/29/17 14:42*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*09*	*SW8260B*	*91.0 %*		*75-120*		*09/29/17 14:42*	*09/29/17 14:42*	*KCS*
Surr: Dibromofluoromethane (Surr)	*09*	*SW8260B*	*107 %*		*80-119*		*09/29/17 14:42*	*09/29/17 14:42*	*KCS*
Surr: Toluene-d8 (Surr)	*09*	*SW8260B*	*102 %*		*85-120*		*09/29/17 14:42*	*09/29/17 14:42*	*KCS*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-9 1267 Cardwell Road FB **Laboratory Sample ID:** 17I0856-09

Grab Date/Time: 09/28/2017 11:36

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	09	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:21	10/03/17 11:13	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-10 1267 Cardwell Road **Laboratory Sample ID:** 17I0856-10

Grab Date/Time: 09/28/2017 11:46

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	10	SW8260B	<0.40 ug/L		0.40	1	09/29/17 17:51	09/29/17 17:51	KCS
1,1,1-Trichloroethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,1,2,2-Tetrachloroethane	10	SW8260B	<0.40 ug/L		0.40	1	09/29/17 17:51	09/29/17 17:51	KCS
1,1,2-Trichloroethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,1-Dichloroethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,1-Dichloroethylene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,1-Dichloropropene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,2,3-Trichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,2,3-Trichloropropane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,2,4-Trichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,2,4-Trimethylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,2-Dibromo-3-chloropropane (DBCP)	10	SW8260B	<4.00 ug/L		4.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,2-Dibromoethane (EDB)	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,2-Dichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,2-Dichloroethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,2-Dichloropropane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,3,5-Trimethylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,3-Dichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,3-Dichloropropane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
1,4-Dichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
2,2-Dichloropropane	10	SW8260B	<2.00 ug/L		2.00	1	09/29/17 17:51	09/29/17 17:51	KCS
2-Butanone (MEK)	10	SW8260B	<10.0 ug/L		10.0	1	09/29/17 17:51	09/29/17 17:51	KCS
2-Chlorotoluene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
2-Hexanone (MBK)	10	SW8260B	<5.00 ug/L		5.00	1	09/29/17 17:51	09/29/17 17:51	KCS
4-Chlorotoluene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
4-Isopropyltoluene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-10 1267 Cardwell Road **Laboratory Sample ID:** 17I0856-10

Grab Date/Time: 09/28/2017 11:46

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
4-Methyl-2-pentanone (MIBK)	10	SW8260B	<5.00 ug/L		5.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Acetone	10	SW8260B	<10.0 ug/L		10.0	1	09/29/17 17:51	09/29/17 17:51	KCS
Benzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Bromobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Bromochloromethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Bromodichloromethane	10	SW8260B	<0.50 ug/L		0.50	1	09/29/17 17:51	09/29/17 17:51	KCS
Bromoform	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Bromomethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Carbon disulfide	10	SW8260B	<10.0 ug/L		10.0	1	09/29/17 17:51	09/29/17 17:51	KCS
Carbon tetrachloride	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Chlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Chloroethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Chloroform	10	SW8260B	**0.90 ug/L**		0.50	1	09/29/17 17:51	09/29/17 17:51	KCS
Chloromethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
cis-1,2-Dichloroethylene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
cis-1,3-Dichloropropene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Dibromochloromethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Dibromomethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Dichlorodifluoromethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Di-isopropyl ether (DIPE)	10	SW8260B	<5.00 ug/L		5.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Ethylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Hexachlorobutadiene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Iodomethane	10	SW8260B	<10.0 ug/L		10.0	1	09/29/17 17:51	09/29/17 17:51	KCS
Isopropylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
m+p-Xylenes	10	SW8260B	<2.00 ug/L		2.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Methylene chloride	10	SW8260B	<4.00 ug/L		4.00	1	09/29/17 17:51	09/29/17 17:51	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-10 1267 Cardwell Road **Laboratory Sample ID:** 17I0856-10

Grab Date/Time: 09/28/2017 11:46

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Methyl-t-butyl ether (MTBE)	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Naphthalene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
n-Butylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
n-Propylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
o-Xylene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
sec-Butylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Styrene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
TAA	10	SW8260B	<25.0 ug/L		25.0	1	09/29/17 17:51	09/29/17 17:51	KCS
TBA	10	SW8260B	<100 ug/L		100	1	09/29/17 17:51	09/29/17 17:51	KCS
tert-Butylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Tetrachloroethylene (PCE)	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Toluene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
trans-1,2-Dichloroethylene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
trans-1,3-Dichloropropene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Trichloroethylene	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Trichlorofluoromethane	10	SW8260B	<1.00 ug/L		1.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Vinyl acetate	10	SW8260B	<10.0 ug/L		10.0	1	09/29/17 17:51	09/29/17 17:51	KCS
Vinyl chloride	10	SW8260B	<0.50 ug/L		0.50	1	09/29/17 17:51	09/29/17 17:51	KCS
Xylenes, Total	10	SW8260B	<3.00 ug/L		3.00	1	09/29/17 17:51	09/29/17 17:51	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*10*	*SW8260B*	*105 %*		*70-120*		*09/29/17 17:51*	*09/29/17 17:51*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*10*	*SW8260B*	*89.8 %*		*75-120*		*09/29/17 17:51*	*09/29/17 17:51*	*KCS*
Surr: Dibromofluoromethane (Surr)	*10*	*SW8260B*	*109 %*		*80-119*		*09/29/17 17:51*	*09/29/17 17:51*	*KCS*
Surr: Toluene-d8 (Surr)	*10*	*SW8260B*	*101 %*		*85-120*		*09/29/17 17:51*	*09/29/17 17:51*	*KCS*
Micro-extractables by GC/ECD									

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17I0856

Analytical Results

Sample I.D. 92817001-10 1267 Cardwell Road **Laboratory Sample ID:** 17I0856-10

Grab Date/Time: 09/28/2017 11:46

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	10	SW8011	<0.010 ug/L		0.010	1	10/02/17 11:21	10/03/17 11:32	LBH

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Organic Compounds by GCMS		**Preparation Method:**	**SW5030B**		
17I0856-02	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121
17I0856-03	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121
17I0856-04	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121
17I0856-05	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121
17I0856-06	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121
17I0856-07	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121
17I0856-08	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121
17I0856-09	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121
17I0856-10	5.00 mL / 5.00 mL	SW8260B	BAJ0006	SAJ0009	AI70121

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Micro-extractables by GC/ECD		**Preparation Method:**	**SW8011**		
17I0856-01	59.9 mL / 2.00 mL	SW8011	BAJ0019	SAJ0017	AG70133
17I0856-03	61.4 mL / 2.00 mL	SW8011	BAJ0019	SAJ0017	AG70133
17I0856-04	60.9 mL / 2.00 mL	SW8011	BAJ0019	SAJ0017	AG70133
17I0856-05	62.1 mL / 2.00 mL	SW8011	BAJ0019	SAJ0017	AG70133
17I0856-06	61.0 mL / 2.00 mL	SW8011	BAJ0019	SAJ0017	AG70133
17I0856-07	61.4 mL / 2.00 mL	SW8011	BAJ0019	SAJ0017	AG70133
17I0856-08	60.5 mL / 2.00 mL	SW8011	BAJ0019	SAJ0017	AG70133
17I0856-09	61.2 mL / 2.00 mL	SW8011	BAJ0019	SAJ0017	AG70133
17I0856-10	61.2 mL / 2.00 mL	SW8011	BAJ0019	SAJ0017	AG70133

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
Blank (BAJ0006-BLK1)				Prepared & Analyzed: 09/29/2017						
1,1,1,2-Tetrachloroethane	<0.40 ug/L	0.40	ug/L							
1,1,1-Trichloroethane	<1.00 ug/L	1.00	ug/L							
1,1,2,2-Tetrachloroethane	<0.40 ug/L	0.40	ug/L							
1,1,2-Trichloroethane	<1.00 ug/L	1.00	ug/L							
1,1-Dichloroethane	<1.00 ug/L	1.00	ug/L							
1,1-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
1,1-Dichloropropene	<1.00 ug/L	1.00	ug/L							
1,2,3-Trichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2,3-Trichloropropane	<1.00 ug/L	1.00	ug/L							
1,2,4-Trichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2,4-Trimethylbenzene	<1.00 ug/L	1.00	ug/L							
1,2-Dibromo-3-chloropropane (DBCP)	<4.00 ug/L	4.00	ug/L							
1,2-Dibromoethane (EDB)	<1.00 ug/L	1.00	ug/L							
1,2-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2-Dichloroethane	<1.00 ug/L	1.00	ug/L							
1,2-Dichloropropane	<1.00 ug/L	1.00	ug/L							
1,3,5-Trimethylbenzene	<1.00 ug/L	1.00	ug/L							
1,3-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,3-Dichloropropane	<1.00 ug/L	1.00	ug/L							
1,4-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
2,2-Dichloropropane	<2.00 ug/L	2.00	ug/L							
2-Butanone (MEK)	<10.0 ug/L	10.0	ug/L							
2-Chlorotoluene	<1.00 ug/L	1.00	ug/L							
2-Hexanone (MBK)	<5.00 ug/L	5.00	ug/L							
4-Chlorotoluene	<1.00 ug/L	1.00	ug/L							
4-Isopropyltoluene	<1.00 ug/L	1.00	ug/L							
4-Methyl-2-pentanone (MIBK)	<5.00 ug/L	5.00	ug/L							
Acetone	<10.0 ug/L	10.0	ug/L							
Benzene	<1.00 ug/L	1.00	ug/L							
Bromobenzene	<1.00 ug/L	1.00	ug/L							
Bromochloromethane	<1.00 ug/L	1.00	ug/L							

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
Blank (BAJ0006-BLK1)				Prepared & Analyzed: 09/29/2017						
Bromodichloromethane	<0.50 ug/L	0.50	ug/L							
Bromoform	<1.00 ug/L	1.00	ug/L							
Bromomethane	<1.00 ug/L	1.00	ug/L							
Carbon disulfide	<10.0 ug/L	10.0	ug/L							
Carbon tetrachloride	<1.00 ug/L	1.00	ug/L							
Chlorobenzene	<1.00 ug/L	1.00	ug/L							
Chloroethane	<1.00 ug/L	1.00	ug/L							
Chloroform	<0.50 ug/L	0.50	ug/L							
Chloromethane	<1.00 ug/L	1.00	ug/L							
cis-1,2-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
cis-1,3-Dichloropropene	<1.00 ug/L	1.00	ug/L							
Dibromochloromethane	<1.00 ug/L	1.00	ug/L							
Dibromomethane	<1.00 ug/L	1.00	ug/L							
Dichlorodifluoromethane	<1.00 ug/L	1.00	ug/L							
Di-isopropyl ether (DIPE)	<5.00 ug/L	5.00	ug/L							
Ethylbenzene	<1.00 ug/L	1.00	ug/L							
Hexachlorobutadiene	<1.00 ug/L	1.00	ug/L							
Iodomethane	<10.0 ug/L	10.0	ug/L							
Isopropylbenzene	<1.00 ug/L	1.00	ug/L							
m+p-Xylenes	<2.00 ug/L	2.00	ug/L							
Methylene chloride	<4.00 ug/L	4.00	ug/L							
Methyl-t-butyl ether (MTBE)	<1.00 ug/L	1.00	ug/L							
Naphthalene	<1.00 ug/L	1.00	ug/L							
n-Butylbenzene	<1.00 ug/L	1.00	ug/L							
n-Propylbenzene	<1.00 ug/L	1.00	ug/L							
o-Xylene	<1.00 ug/L	1.00	ug/L							
sec-Butylbenzene	<1.00 ug/L	1.00	ug/L							
Styrene	<1.00 ug/L	1.00	ug/L							
TAA	<25.0 ug/L	25.0	ug/L							
TBA	<100 ug/L	100	ug/L							
tert-Butylbenzene	<1.00 ug/L	1.00	ug/L							

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
Blank (BAJ0006-BLK1)				Prepared & Analyzed: 09/29/2017						
Tetrachloroethylene (PCE)	<1.00 ug/L	1.00	ug/L							
Toluene	<1.00 ug/L	1.00	ug/L							
trans-1,2-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
trans-1,3-Dichloropropene	<1.00 ug/L	1.00	ug/L							
Trichloroethylene	<1.00 ug/L	1.00	ug/L							
Trichlorofluoromethane	<1.00 ug/L	1.00	ug/L							
Vinyl acetate	<10.0 ug/L	10.0	ug/L							
Vinyl chloride	<0.50 ug/L	0.50	ug/L							
Xylenes, Total	<3.00 ug/L	3.00	ug/L							
Surr: 1,2-Dichloroethane-d4 (Surr)	52.2		ug/L	50.0		104	70-120			
Surr: 4-Bromofluorobenzene (Surr)	45.8		ug/L	50.0		91.6	75-120			
Surr: Dibromofluoromethane (Surr)	52.9		ug/L	50.0		106	80-119			
Surr: Toluene-d8 (Surr)	49.7		ug/L	50.0		99.4	85-120			
LCS (BAJ0006-BS1)				Prepared & Analyzed: 09/29/2017						
1,1,1,2-Tetrachloroethane	51.0 ug/L	0.4	ug/L	50.0	ug/L	102	80-130			
1,1,1-Trichloroethane	50.2 ug/L	1	ug/L	50.0	ug/L	100	65-130			
1,1,2,2-Tetrachloroethane	50.8 ug/L	0.4	ug/L	50.0	ug/L	102	65-130			
1,1,2-Trichloroethane	51.2 ug/L	1	ug/L	50.0	ug/L	102	75-125			
1,1-Dichloroethane	57.3 ug/L	1	ug/L	50.0	ug/L	115	70-135			
1,1-Dichloroethylene	54.2 ug/L	1	ug/L	50.0	ug/L	108	70-130			
1,1-Dichloropropene	49.2 ug/L	1	ug/L	50.0	ug/L	98.5	75-135			
1,2,3-Trichlorobenzene	49.9 ug/L	1	ug/L	50.0	ug/L	99.7	55-140			
1,2,3-Trichloropropane	47.7 ug/L	1	ug/L	50.0	ug/L	95.3	75-125			
1,2,4-Trichlorobenzene	50.0 ug/L	1	ug/L	50.0	ug/L	100	65-135			
1,2,4-Trimethylbenzene	53.9 ug/L	1	ug/L	50.0	ug/L	108	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	40.6 ug/L	4	ug/L	50.0	ug/L	81.3	50-130			
1,2-Dibromoethane (EDB)	52.1 ug/L	1	ug/L	50.0	ug/L	104	80-120			
1,2-Dichlorobenzene	50.9 ug/L	1	ug/L	50.0	ug/L	102	70-120			
1,2-Dichloroethane	47.8 ug/L	1	ug/L	50.0	ug/L	95.5	70-130			
1,2-Dichloropropane	48.1 ug/L	1	ug/L	50.0	ug/L	96.2	75-125			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
LCS (BAJ0006-BS1)				Prepared & Analyzed: 09/29/2017						
1,3,5-Trimethylbenzene	57.6 ug/L	1	ug/L	50.0	ug/L	115	75-125			
1,3-Dichlorobenzene	60.2 ug/L	1	ug/L	50.0	ug/L	120	75-125			
1,3-Dichloropropane	48.7 ug/L	1	ug/L	50.0	ug/L	97.3	75-125			
1,4-Dichlorobenzene	50.1 ug/L	1	ug/L	50.0	ug/L	100	75-125			
2,2-Dichloropropane	50.1 ug/L	2	ug/L	50.0	ug/L	100	70-135			
2-Butanone (MEK)	46.8 ug/L	10	ug/L	50.0	ug/L	93.6	30-150			
2-Chlorotoluene	60.4 ug/L	1	ug/L	50.0	ug/L	121	75-125			
2-Hexanone (MBK)	45.4 ug/L	5	ug/L	50.0	ug/L	90.7	55-130			
4-Chlorotoluene	57.2 ug/L	1	ug/L	50.0	ug/L	114	75-130			
4-Isopropyltoluene	46.9 ug/L	1	ug/L	50.0	ug/L	93.8	75-130			
4-Methyl-2-pentanone (MIBK)	40.9 ug/L	5	ug/L	50.0	ug/L	81.9	60-135			
Acetone	54.1 ug/L	10	ug/L	50.0	ug/L	108	40-140			
Benzene	50.5 ug/L	1	ug/L	50.0	ug/L	101	80-120			
Bromobenzene	52.9 ug/L	1	ug/L	50.0	ug/L	106	75-125			
Bromochloromethane	54.0 ug/L	1	ug/L	50.0	ug/L	108	65-130			
Bromodichloromethane	49.1 ug/L	0.5	ug/L	50.0	ug/L	98.1	75-120			
Bromoform	50.8 ug/L	1	ug/L	50.0	ug/L	102	70-130			
Bromomethane	51.2 ug/L	1	ug/L	50.0	ug/L	102	30-145			
Carbon disulfide	44.9 ug/L	10	ug/L	50.0	ug/L	89.8	35-160			
Carbon tetrachloride	50.5 ug/L	1	ug/L	50.0	ug/L	101	65-140			
Chlorobenzene	52.1 ug/L	1	ug/L	50.0	ug/L	104	80-120			
Chloroethane	50.4 ug/L	1	ug/L	50.0	ug/L	101	60-135			
Chloroform	49.2 ug/L	0.5	ug/L	50.0	ug/L	98.3	65-135			
Chloromethane	50.4 ug/L	1	ug/L	50.0	ug/L	101	40-125			
cis-1,2-Dichloroethylene	49.8 ug/L	1	ug/L	50.0	ug/L	99.6	70-125			
cis-1,3-Dichloropropene	48.0 ug/L	1	ug/L	50.0	ug/L	96.0	70-130			
Dibromochloromethane	50.0 ug/L	1	ug/L	50.0	ug/L	100	60-135			
Dibromomethane	50.6 ug/L	1	ug/L	50.0	ug/L	101	75-125			
Dichlorodifluoromethane	47.2 ug/L	1	ug/L	50.0	ug/L	94.3	30-155			
Ethylbenzene	47.4 ug/L	1	ug/L	50.0	ug/L	94.7	75-125			
Hexachlorobutadiene	53.6 ug/L	1	ug/L	50.0	ug/L	107	50-140			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
LCS (BAJ0006-BS1)				Prepared & Analyzed: 09/29/2017						
Isopropylbenzene	53.8 ug/L	1	ug/L	50.0	ug/L	108	75-125			
m+p-Xylenes	97.6 ug/L	2	ug/L	100	ug/L	97.6	75-130			
Methylene chloride	55.1 ug/L	4	ug/L	50.0	ug/L	110	55-140			
Methyl-t-butyl ether (MTBE)	47.6 ug/L	1	ug/L	50.0	ug/L	95.2	65-125			
Naphthalene	43.7 ug/L	1	ug/L	50.0	ug/L	87.4	55-140			
n-Butylbenzene	47.6 ug/L	1	ug/L	50.0	ug/L	95.3	70-135			
n-Propylbenzene	57.8 ug/L	1	ug/L	50.0	ug/L	116	70-130			
o-Xylene	48.5 ug/L	1	ug/L	50.0	ug/L	97.0	80-120			
sec-Butylbenzene	58.5 ug/L	1	ug/L	50.0	ug/L	117	70-125			
Styrene	51.7 ug/L	1	ug/L	50.0	ug/L	103	65-135			
tert-Butylbenzene	58.2 ug/L	1	ug/L	50.0	ug/L	116	70-130			
Tetrachloroethylene (PCE)	73.8 ug/L	1	ug/L	50.0	ug/L	148	45-150			
Toluene	47.2 ug/L	1	ug/L	50.0	ug/L	94.3	75-120			
trans-1,2-Dichloroethylene	52.7 ug/L	1	ug/L	50.0	ug/L	105	60-140			
trans-1,3-Dichloropropene	47.6 ug/L	1	ug/L	50.0	ug/L	95.2	55-140			
Trichloroethylene	50.9 ug/L	1	ug/L	50.0	ug/L	102	70-125			
Trichlorofluoromethane	45.9 ug/L	1	ug/L	50.0	ug/L	91.8	60-145			
Vinyl chloride	46.1 ug/L	0.5	ug/L	50.0	ug/L	92.2	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	50.2		ug/L	50.0	ug/L	100	70-120			
Surr: 4-Bromofluorobenzene (Surr)	50.4		ug/L	50.0	ug/L	101	75-120			
Surr: Dibromofluoromethane (Surr)	52.0		ug/L	50.0	ug/L	104	80-119			
Surr: Toluene-d8 (Surr)	49.1		ug/L	50.0	ug/L	98.3	85-120			
Matrix Spike (BAJ0006-MS1)		**Source: 17I0855-04**		Prepared & Analyzed: 09/29/2017						
1,1,1,2-Tetrachloroethane	57.0 ug/L	0.4	ug/L	50.0	<0.4 ug/L	114	80-130			
1,1,1-Trichloroethane	57.3 ug/L	1	ug/L	50.0	<1 ug/L	115	65-130			
1,1,2,2-Tetrachloroethane	56.0 ug/L	0.4	ug/L	50.0	<0.4 ug/L	112	65-130			
1,1,2-Trichloroethane	58.9 ug/L	1	ug/L	50.0	<1 ug/L	118	75-125			
1,1-Dichloroethane	65.5 ug/L	1	ug/L	50.0	<1 ug/L	131	70-135			
1,1-Dichloroethylene	59.8 ug/L	1	ug/L	50.0	<1 ug/L	120	70-130			
1,1-Dichloropropene	54.6 ug/L	1	ug/L	50.0	<1 ug/L	109	75-135			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
Matrix Spike (BAJ0006-MS1)		**Source: 17I0855-04**		Prepared & Analyzed: 09/29/2017						
1,2,3-Trichlorobenzene	51.3 ug/L	1	ug/L	50.0	<1 ug/L	103	55-140			
1,2,3-Trichloropropane	52.8 ug/L	1	ug/L	50.0	<1 ug/L	106	75-125			
1,2,4-Trichlorobenzene	48.6 ug/L	1	ug/L	50.0	<1 ug/L	97.2	65-135			
1,2,4-Trimethylbenzene	50.6 ug/L	1	ug/L	50.0	<1 ug/L	101	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	51.2 ug/L	4	ug/L	50.0	<4 ug/L	102	50-130			
1,2-Dibromoethane (EDB)	57.8 ug/L	1	ug/L	50.0	<1 ug/L	116	80-120			
1,2-Dichlorobenzene	56.3 ug/L	1	ug/L	50.0	<1 ug/L	113	70-120			
1,2-Dichloroethane	55.4 ug/L	1	ug/L	50.0	<1 ug/L	111	70-130			
1,2-Dichloropropane	55.2 ug/L	1	ug/L	50.0	<1 ug/L	110	75-125			
1,3,5-Trimethylbenzene	54.7 ug/L	1	ug/L	50.0	<1 ug/L	109	75-125			
1,3-Dichlorobenzene	57.9 ug/L	1	ug/L	50.0	<1 ug/L	116	75-125			
1,3-Dichloropropane	57.1 ug/L	1	ug/L	50.0	<1 ug/L	114	75-125			
1,4-Dichlorobenzene	54.8 ug/L	1	ug/L	50.0	<1 ug/L	110	75-125			
2,2-Dichloropropane	53.6 ug/L	2	ug/L	50.0	<2 ug/L	107	70-135			
2-Butanone (MEK)	46.7 ug/L	10	ug/L	50.0	<10 ug/L	93.5	30-150			
2-Chlorotoluene	57.3 ug/L	1	ug/L	50.0	<1 ug/L	115	75-125			
2-Hexanone (MBK)	42.0 ug/L	5	ug/L	50.0	<5 ug/L	84.0	55-130			
4-Chlorotoluene	52.8 ug/L	1	ug/L	50.0	<1 ug/L	106	75-130			
4-Isopropyltoluene	55.0 ug/L	1	ug/L	50.0	<1 ug/L	110	75-130			
4-Methyl-2-pentanone (MIBK)	39.0 ug/L	5	ug/L	50.0	<5 ug/L	78.0	60-135			
Acetone	59.4 ug/L	10	ug/L	50.0	<10 ug/L	102	40-140			
Benzene	58.2 ug/L	1	ug/L	50.0	<1 ug/L	116	80-120			
Bromobenzene	57.6 ug/L	1	ug/L	50.0	<1 ug/L	115	75-125			
Bromochloromethane	60.8 ug/L	1	ug/L	50.0	<1 ug/L	122	65-130			
Bromodichloromethane	57.4 ug/L	0.5	ug/L	50.0	<0.5 ug/L	115	75-120			
Bromoform	55.5 ug/L	1	ug/L	50.0	<1 ug/L	111	70-130			
Bromomethane	56.2 ug/L	1	ug/L	50.0	<1 ug/L	112	30-145			
Carbon disulfide	45.4 ug/L	10	ug/L	50.0	<10 ug/L	90.8	35-160			
Carbon tetrachloride	58.7 ug/L	1	ug/L	50.0	<1 ug/L	117	65-140			
Chlorobenzene	56.3 ug/L	1	ug/L	50.0	<1 ug/L	113	80-120			
Chloroethane	56.7 ug/L	1	ug/L	50.0	<1 ug/L	113	60-135			

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
Matrix Spike (BAJ0006-MS1)		**Source: 17I0855-04**		Prepared & Analyzed: 09/29/2017						
Chloroform	56.3 ug/L	0.5	ug/L	50.0	0.53 ug/L	112	65-135			
Chloromethane	55.4 ug/L	1	ug/L	50.0	<1 ug/L	111	40-125			
cis-1,2-Dichloroethylene	56.9 ug/L	1	ug/L	50.0	<1 ug/L	114	70-125			
cis-1,3-Dichloropropene	53.7 ug/L	1	ug/L	50.0	<1 ug/L	107	70-130			
Dibromochloromethane	58.6 ug/L	1	ug/L	50.0	<1 ug/L	117	60-135			
Dibromomethane	57.7 ug/L	1	ug/L	50.0	<1 ug/L	115	75-125			
Dichlorodifluoromethane	52.9 ug/L	1	ug/L	50.0	<1 ug/L	106	30-155			
Ethylbenzene	51.5 ug/L	1	ug/L	50.0	<1 ug/L	103	75-125			
Hexachlorobutadiene	55.3 ug/L	1	ug/L	50.0	<1 ug/L	111	50-140			
Isopropylbenzene	59.2 ug/L	1	ug/L	50.0	<1 ug/L	118	75-125			
m+p-Xylenes	107 ug/L	2	ug/L	100	<2 ug/L	106	75-130			
Methylene chloride	63.0 ug/L	4	ug/L	50.0	<4 ug/L	123	55-140			
Methyl-t-butyl ether (MTBE)	52.2 ug/L	1	ug/L	50.0	<1 ug/L	104	65-125			
Naphthalene	48.4 ug/L	1	ug/L	50.0	<1 ug/L	96.7	55-140			
n-Butylbenzene	54.6 ug/L	1	ug/L	50.0	<1 ug/L	109	70-135			
n-Propylbenzene	53.9 ug/L	1	ug/L	50.0	<1 ug/L	108	70-130			
o-Xylene	54.0 ug/L	1	ug/L	50.0	<1 ug/L	108	80-120			
sec-Butylbenzene	57.0 ug/L	1	ug/L	50.0	<1 ug/L	114	70-125			
Styrene	55.7 ug/L	1	ug/L	50.0	<1 ug/L	111	65-135			
tert-Butylbenzene	55.9 ug/L	1	ug/L	50.0	<1 ug/L	112	70-130			
Tetrachloroethylene (PCE)	79.2 ug/L	1	ug/L	50.0	<1 ug/L	158	45-150			M
Toluene	54.4 ug/L	1	ug/L	50.0	<1 ug/L	108	75-120			
trans-1,2-Dichloroethylene	58.9 ug/L	1	ug/L	50.0	<1 ug/L	118	60-140			
trans-1,3-Dichloropropene	53.7 ug/L	1	ug/L	50.0	<1 ug/L	107	55-140			
Trichloroethylene	57.3 ug/L	1	ug/L	50.0	<1 ug/L	115	70-125			
Trichlorofluoromethane	52.4 ug/L	1	ug/L	50.0	<1 ug/L	105	60-145			
Vinyl chloride	53.0 ug/L	0.5	ug/L	50.0	<0.5 ug/L	106	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	51.6		ug/L	50.0	ug/L	103	70-120			
Surr: 4-Bromofluorobenzene (Surr)	49.8		ug/L	50.0	ug/L	99.5	75-120			
Surr: Dibromofluoromethane (Surr)	52.2		ug/L	50.0	ug/L	104	80-119			
Surr: Toluene-d8 (Surr)	50.9		ug/L	50.0	ug/L	102	85-120			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
Matrix Spike Dup (BAJ0006-MSD1)		**Source: 17I0855-04**		Prepared & Analyzed: 09/29/2017						
1,1,1,2-Tetrachloroethane	58.8 ug/L	0.4	ug/L	50.0	<0.4 ug/L	118	80-130	2.97	30	
1,1,1-Trichloroethane	59.0 ug/L	1	ug/L	50.0	<1 ug/L	118	65-130	2.77	30	
1,1,2,2-Tetrachloroethane	57.8 ug/L	0.4	ug/L	50.0	<0.4 ug/L	116	65-130	3.04	30	
1,1,2-Trichloroethane	59.0 ug/L	1	ug/L	50.0	<1 ug/L	118	75-125	0.170	30	
1,1-Dichloroethane	67.1 ug/L	1	ug/L	50.0	<1 ug/L	134	70-135	2.47	30	
1,1-Dichloroethylene	62.9 ug/L	1	ug/L	50.0	<1 ug/L	126	70-130	5.00	30	
1,1-Dichloropropene	56.8 ug/L	1	ug/L	50.0	<1 ug/L	114	75-135	3.95	30	
1,2,3-Trichlorobenzene	53.5 ug/L	1	ug/L	50.0	<1 ug/L	107	55-140	4.18	30	
1,2,3-Trichloropropane	55.1 ug/L	1	ug/L	50.0	<1 ug/L	110	75-125	4.28	30	
1,2,4-Trichlorobenzene	51.6 ug/L	1	ug/L	50.0	<1 ug/L	103	65-135	5.93	30	
1,2,4-Trimethylbenzene	52.6 ug/L	1	ug/L	50.0	<1 ug/L	105	75-130	3.76	30	
1,2-Dibromo-3-chloropropane (DBCP)	54.1 ug/L	4	ug/L	50.0	<4 ug/L	108	50-130	5.62	30	
1,2-Dibromoethane (EDB)	58.5 ug/L	1	ug/L	50.0	<1 ug/L	117	80-120	1.15	30	
1,2-Dichlorobenzene	57.9 ug/L	1	ug/L	50.0	<1 ug/L	116	70-120	2.85	30	
1,2-Dichloroethane	56.5 ug/L	1	ug/L	50.0	<1 ug/L	113	70-130	1.84	30	
1,2-Dichloropropane	56.6 ug/L	1	ug/L	50.0	<1 ug/L	113	75-125	2.58	30	
1,3,5-Trimethylbenzene	57.1 ug/L	1	ug/L	50.0	<1 ug/L	114	75-125	4.38	30	
1,3-Dichlorobenzene	60.1 ug/L	1	ug/L	50.0	<1 ug/L	120	75-125	3.73	30	
1,3-Dichloropropane	57.4 ug/L	1	ug/L	50.0	<1 ug/L	115	75-125	0.471	30	
1,4-Dichlorobenzene	57.4 ug/L	1	ug/L	50.0	<1 ug/L	115	75-125	4.69	30	
2,2-Dichloropropane	55.0 ug/L	2	ug/L	50.0	<2 ug/L	110	70-135	2.52	30	
2-Butanone (MEK)	55.0 ug/L	10	ug/L	50.0	<10 ug/L	110	30-150	16.2	30	
2-Chlorotoluene	58.9 ug/L	1	ug/L	50.0	<1 ug/L	118	75-125	2.70	30	
2-Hexanone (MBK)	49.4 ug/L	5	ug/L	50.0	<5 ug/L	98.7	55-130	16.2	30	
4-Chlorotoluene	55.4 ug/L	1	ug/L	50.0	<1 ug/L	111	75-130	4.83	30	
4-Isopropyltoluene	56.6 ug/L	1	ug/L	50.0	<1 ug/L	113	75-130	2.98	30	
4-Methyl-2-pentanone (MIBK)	45.5 ug/L	5	ug/L	50.0	<5 ug/L	91.1	60-135	15.5	30	
Acetone	72.9 ug/L	10	ug/L	50.0	<10 ug/L	129	40-140	20.4	30	
Benzene	58.5 ug/L	1	ug/L	50.0	<1 ug/L	117	80-120	0.428	30	
Bromobenzene	58.9 ug/L	1	ug/L	50.0	<1 ug/L	118	75-125	2.27	30	
Bromochloromethane	62.8 ug/L	1	ug/L	50.0	<1 ug/L	126	65-130	3.24	30	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
Matrix Spike Dup (BAJ0006-MSD1)		**Source: 17I0855-04**		Prepared & Analyzed: 09/29/2017						
Bromodichloromethane	58.1 ug/L	0.5	ug/L	50.0	<0.5 ug/L	116	75-120	1.25	30	
Bromoform	56.8 ug/L	1	ug/L	50.0	<1 ug/L	114	70-130	2.24	30	
Bromomethane	61.6 ug/L	1	ug/L	50.0	<1 ug/L	123	30-145	9.15	30	
Carbon disulfide	52.4 ug/L	10	ug/L	50.0	<10 ug/L	105	35-160	14.4	30	
Carbon tetrachloride	59.8 ug/L	1	ug/L	50.0	<1 ug/L	120	65-140	1.77	30	
Chlorobenzene	58.2 ug/L	1	ug/L	50.0	<1 ug/L	116	80-120	3.42	30	
Chloroethane	60.5 ug/L	1	ug/L	50.0	<1 ug/L	121	60-135	6.52	30	
Chloroform	57.9 ug/L	0.5	ug/L	50.0	0.53 ug/L	115	65-135	2.80	30	
Chloromethane	61.5 ug/L	1	ug/L	50.0	<1 ug/L	123	40-125	10.6	30	
cis-1,2-Dichloroethylene	58.8 ug/L	1	ug/L	50.0	<1 ug/L	118	70-125	3.41	30	
cis-1,3-Dichloropropene	54.0 ug/L	1	ug/L	50.0	<1 ug/L	108	70-130	0.576	30	
Dibromochloromethane	58.8 ug/L	1	ug/L	50.0	<1 ug/L	118	60-135	0.324	30	
Dibromomethane	58.2 ug/L	1	ug/L	50.0	<1 ug/L	116	75-125	0.794	30	
Dichlorodifluoromethane	57.4 ug/L	1	ug/L	50.0	<1 ug/L	115	30-155	8.16	30	
Ethylbenzene	52.5 ug/L	1	ug/L	50.0	<1 ug/L	105	75-125	1.90	30	
Hexachlorobutadiene	56.0 ug/L	1	ug/L	50.0	<1 ug/L	112	50-140	1.26	30	
Isopropylbenzene	60.4 ug/L	1	ug/L	50.0	<1 ug/L	121	75-125	2.01	30	
m+p-Xylenes	109 ug/L	2	ug/L	100	<2 ug/L	109	75-130	2.28	30	
Methylene chloride	64.0 ug/L	4	ug/L	50.0	<4 ug/L	125	55-140	1.65	30	
Methyl-t-butyl ether (MTBE)	54.8 ug/L	1	ug/L	50.0	<1 ug/L	110	65-125	5.01	30	
Naphthalene	51.2 ug/L	1	ug/L	50.0	<1 ug/L	102	55-140	5.59	30	
n-Butylbenzene	57.2 ug/L	1	ug/L	50.0	<1 ug/L	114	70-135	4.66	30	
n-Propylbenzene	56.8 ug/L	1	ug/L	50.0	<1 ug/L	114	70-130	5.17	30	
o-Xylene	55.0 ug/L	1	ug/L	50.0	<1 ug/L	110	80-120	1.96	30	
sec-Butylbenzene	59.4 ug/L	1	ug/L	50.0	<1 ug/L	119	70-125	4.14	30	
Styrene	57.9 ug/L	1	ug/L	50.0	<1 ug/L	116	65-135	3.85	30	
tert-Butylbenzene	57.6 ug/L	1	ug/L	50.0	<1 ug/L	115	70-130	2.98	30	
Tetrachloroethylene (PCE)	82.7 ug/L	1	ug/L	50.0	<1 ug/L	165	45-150	4.22	30	M
Toluene	55.2 ug/L	1	ug/L	50.0	<1 ug/L	110	75-120	1.46	30	
trans-1,2-Dichloroethylene	61.4 ug/L	1	ug/L	50.0	<1 ug/L	123	60-140	4.12	30	
trans-1,3-Dichloropropene	53.8 ug/L	1	ug/L	50.0	<1 ug/L	108	55-140	0.260	30	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0006 - SW5030B										
Matrix Spike Dup (BAJ0006-MSD1)		**Source: 17I0855-04**		Prepared & Analyzed: 09/29/2017						
Trichloroethylene	58.2 ug/L	1	ug/L	50.0	<1 ug/L	116	70-125	1.49	30	
Trichlorofluoromethane	55.1 ug/L	1	ug/L	50.0	<1 ug/L	110	60-145	4.97	30	
Vinyl chloride	55.4 ug/L	0.5	ug/L	50.0	<0.5 ug/L	111	50-145	4.35	30	
Surr: 1,2-Dichloroethane-d4 (Surr)	50.9		ug/L	50.0	ug/L	102	70-120			
Surr: 4-Bromofluorobenzene (Surr)	49.5		ug/L	50.0	ug/L	98.9	75-120			
Surr: Dibromofluoromethane (Surr)	52.6		ug/L	50.0	ug/L	105	80-119			
Surr: Toluene-d8 (Surr)	50.0		ug/L	50.0	ug/L	99.9	85-120			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Micro-extractables by GC/ECD - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0019 - SW8011										
Blank (BAJ0019-BLK1)				Prepared: 10/02/2017 Analyzed: 10/03/2017						
1,2-Dibromoethane (EDB)	<0.010 ug/L	0.010	ug/L							
LCS (BAJ0019-BS1)				Prepared: 10/02/2017 Analyzed: 10/03/2017						
1,2-Dibromoethane (EDB)	0.260 ug/L	0.010	ug/L	0.250 ug/L		104	65-135			
LCS Dup (BAJ0019-BSD1)				Prepared: 10/02/2017 Analyzed: 10/03/2017						
1,2-Dibromoethane (EDB)	0.269 ug/L	0.010	ug/L	0.250 ug/L		107	65-135	3.24	20	
Matrix Spike (BAJ0019-MS1)		**Source: 17I0764-02**		Prepared: 10/02/2017 Analyzed: 10/03/2017						
1,2-Dibromoethane (EDB)	0.154 ug/L	0.010	ug/L	0.245	<0.010 ug/L	62.9	65-135			M

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
SW8011 in Non-Potable Water	
1,2-Dibromoethane (EDB)	VELAP,NC
SW8260B in Non-Potable Water	
1,1,1,2-Tetrachloroethane	NC,VELAP,WVDEP
1,1,1-Trichloroethane	NC,VELAP,WVDEP
1,1,2,2-Tetrachloroethane	NC,VELAP,WVDEP
1,1,2-Trichloroethane	NC,VELAP,WVDEP
1,1-Dichloroethane	NC,VELAP,WVDEP
1,1-Dichloroethylene	NC,VELAP,WVDEP
1,1-Dichloropropene	NC,VELAP,WVDEP
1,2,3-Trichlorobenzene	NC,VELAP,WVDEP
1,2,3-Trichloropropane	NC,VELAP,WVDEP
1,2,4-Trichlorobenzene	NC,VELAP,WVDEP
1,2,4-Trimethylbenzene	NC,VELAP,WVDEP
1,2-Dibromo-3-chloropropane (DBCP)	NC,VELAP,WVDEP
1,2-Dibromoethane (EDB)	NC,VELAP,WVDEP
1,2-Dichlorobenzene	NC,VELAP,WVDEP
1,2-Dichloroethane	NC,VELAP,WVDEP
1,2-Dichloropropane	NC,VELAP,WVDEP
1,3,5-Trimethylbenzene	NC,WVDEP
1,3-Dichlorobenzene	NC,VELAP,WVDEP
1,3-Dichloropropane	NC,VELAP,WVDEP
1,4-Dichlorobenzene	NC,VELAP,WVDEP
2,2-Dichloropropane	NC,VELAP,WVDEP
2-Butanone (MEK)	NC,VELAP,WVDEP
2-Chlorotoluene	NC,VELAP,WVDEP
2-Hexanone (MBK)	NC,VELAP,WVDEP
4-Chlorotoluene	NC,VELAP,WVDEP
4-Isopropyltoluene	NC,VELAP,WVDEP
4-Methyl-2-pentanone (MIBK)	NC,VELAP,WVDEP
Acetone	NC,VELAP,WVDEP
Benzene	NC,VELAP,WVDEP
Bromobenzene	NC,VELAP,WVDEP
Bromochloromethane	NC,VELAP,WVDEP
Bromodichloromethane	NC,VELAP,WVDEP
Bromoform	NC,VELAP,WVDEP
Bromomethane	NC,VELAP,WVDEP

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
Carbon disulfide	NC,VELAP,WVDEP
Carbon tetrachloride	NC,VELAP,WVDEP
Chlorobenzene	NC,VELAP,WVDEP
Chloroethane	NC,VELAP,WVDEP
Chloroform	NC,VELAP,WVDEP
Chloromethane	NC,VELAP,WVDEP
cis-1,2-Dichloroethylene	NC,VELAP,WVDEP
cis-1,3-Dichloropropene	NC,VELAP,WVDEP
Dibromochloromethane	NC,VELAP,WVDEP
Dibromomethane	NC,VELAP,WVDEP
Dichlorodifluoromethane	NC,VELAP,WVDEP
Di-isopropyl ether (DIPE)	NC,VELAP,WVDEP
Ethylbenzene	NC,VELAP,WVDEP
Hexachlorobutadiene	NC,VELAP,WVDEP
Iodomethane	NC,VELAP,WVDEP
Isopropylbenzene	NC,VELAP,WVDEP
m+p-Xylenes	NC,VELAP,WVDEP
Methylene chloride	NC,VELAP,WVDEP
Methyl-t-butyl ether (MTBE)	NC,VELAP,WVDEP
Naphthalene	NC,VELAP,WVDEP
n-Butylbenzene	NC,VELAP,WVDEP
n-Propylbenzene	NC,VELAP,WVDEP
o-Xylene	NC,VELAP,WVDEP
sec-Butylbenzene	NC,VELAP,WVDEP
Styrene	NC,VELAP,WVDEP
TAA	NC,VELAP,WVDEP
TBA	NC,VELAP,WVDEP
tert-Butylbenzene	NC,VELAP,WVDEP
Tetrachloroethylene (PCE)	NC,VELAP,WVDEP
Toluene	NC,VELAP,WVDEP
trans-1,2-Dichloroethylene	NC,VELAP,WVDEP
trans-1,3-Dichloropropene	NC,VELAP,WVDEP
Trichloroethylene	NC,VELAP,WVDEP
Trichlorofluoromethane	NC,VELAP,WVDEP
Vinyl acetate	NC,VELAP,WVDEP
Vinyl chloride	NC,VELAP,WVDEP
Xylenes, Total	NC,VELAP,WVDEP

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Code	Description	Lab Number	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2017
NC	North Carolina DENR	495	12/31/2017
PADEP	NELAC-Pennsylvania	001	10/31/2017
VELAP	NELAC-Virginia Certificate #9439	460021	06/14/2018
WVDEP	West Virginia DEP	350	11/30/2017

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/24/2017 12:34
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Summary of Data Qualifiers

Cl	Residual Chlorine or other oxidizing agent was detected in the container used to analyze this sample.
M	Matrix spike recovery is outside established acceptance limits
RPD	Relative Percent Difference
Qual	Qualifers
-RE	Denotes sample was re-analyzed
D.F.	Dilution Factor. Please also see the Preparation Factor in the Analysis Summary section.
TIC	Tentatively Identified Compounds are compounds that are identified by comparing the analyte mass spectral pattern with the NIST spectral library . A TIC spectral match is reported when the pattern is at least 75% consistent with the published pattern. Compound concentrations are estimated and are calculated using an internal standard response factor of 1.
PCBs, Total	Total PCBs are defined as the sum of detected Aroclors 1016, 1221, 1232, 1248, 1254, 1260, 1262, and 1268.

APEX

Apex Companies, LLC
203 Wylderose Court
Midlothian, VA 23113
(804) 897-2718

CHAIN OF CUSTODY RECORD

JOB NO.: 757004-001
JOB NAME: Old Oaks Neighborhood
PROJECT MANAGER: Mark Ryland
SAMPLER(S): (Signature(s)) Trey Ousterhout
(Printed) Trey Ousterhout
TURN – AROUND TIME: STD

PARAMETERS: EDB 8011; VOCS 8260

SAMPLE ID	DATE	TIME	COMP.	GRAB	MATRIX	PRES.	STATION / LOCATION	NO. OF CONTAINERS	EDB 8011	VOCS 8260	REMARKS
92817 001-1	102416	900		X	W	4°C HCl	Trip Blank	2	X		
92817 001-2	92717	1550		X	W	4°C HCl	Trip Blank	2		X	
92817 001-3	92817	946		X	W	4°C HCl	1504 Old Oaks FB	5	X	X	
92817 001-4	92817	1000		X	W	4°C HCl	1504 Old Oaks	5	X	X	
92817 001-5	92817	1040		X	W	4°C HCl	1470 Old Oaks FB	5	X	X	
92817 001-6	92817	1050		X	W	4°C HCl	1470 Old Oaks	5	X	X	
92817 001-7	92817	1110		X	W	4°C HCl	1253 Cardwell Road FB	5	X	X	
92817 001-8	92817	1120		X	W	4°C HCl	1253 Cardwell Road	5	X	X	
92817 001-9	92817	1136		X	W	4°C HCl	1267 Cardwell Road FB	5	X	X	
92817 001-10	92817	1146		X	W	4°C HCl	1267 Cardwell Road	5	X	X	
											No Seal
											2.6°C On Ice
							TOTALS	44	9	9	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
① Trey Ousterhout (Printed) Trey Ousterhout	9/28/17 1336	(Printed) Brian Richard 9/28/17 13:36	③ (Printed)		④ (Printed)
Relinquished by: (Signature) ⑤ (Printed)	Date/Time	Received by: (Signature) ⑥ (Printed)	Remarks: DEQ State Lead		

APEX-Richmond 17I0856
Old Oaks Neighborhood
Recd: 09/28/2017 Due: 10/05/2017
v130325002

Distribution: WHITE => original (accompanies samples; returned with results) : YELLOW => laboratory copy : PINK => sampler's copy

1 of 1 pages

1941 Reymet Road ● Richmond, Virginia 23237 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 17J0495

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian, VA 23113	Date Received:	October 16, 2017 10:12
		Date Issued:	October 20, 2017 14:58
		Project Number:	757004-001
Submitted To:	Mark Ryland	Purchase Order:	
Client Site I.D.:	Old Oaks Neighborhood		

Enclosed are the results of analyses for samples received by the laboratory on 10/16/2017 10:12. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

Ted Soyars

Laboratory Manager

End Notes:

The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

This report shall not be reproduced except in full without the expressed and written approval of an authorized representative of Air Water & Soil Laboratories, Inc.

Accredited in accordance with nelac
Commonwealth of Virginia, DCLS
Accreditation # 460021

NWBOC EDWOSB Certified

Certified SWaM Small, Women and Minority-Owned
Supplier Diversity Strengthens the Commonwealth
by the Virginia Department of Minority Business Enterprise

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

ANALYTICAL REPORT FOR SAMPLES

Laboratory Order ID 17J0495

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
92717001-1 Trip Blank	17J0495-01	Ground Water	09/27/2017 15:50	10/16/2017 10:12
101317001-2 Rinsate Blank	17J0495-02	Ground Water	10/13/2017 13:05	10/16/2017 10:12
101317001-3 MW-2	17J0495-03	Ground Water	10/13/2017 14:55	10/16/2017 10:12
101317001-4 MW-6	17J0495-04	Ground Water	10/13/2017 15:10	10/16/2017 10:12
101317001-5 MW-5	17J0495-05	Ground Water	10/13/2017 14:30	10/16/2017 10:12
101317001-6 MW-1	17J0495-06	Ground Water	10/13/2017 14:05	10/16/2017 10:12
101317001-7 MW-8	17J0495-07	Ground Water	10/13/2017 13:35	10/16/2017 10:12
101317001-8 MW-7	17J0495-08	Ground Water	10/13/2017 13:20	10/16/2017 10:12
101317001-9 MW-16	17J0495-09	Ground Water	10/13/2017 16:10	10/16/2017 10:12
101317001-10 MW-15	17J0495-10	Ground Water	10/13/2017 15:45	10/16/2017 10:12
101317001-11 MW-9	17J0495-11	Ground Water	10/13/2017 14:00	10/16/2017 10:12
101317001-12 MW-3	17J0495-12	Ground Water	10/13/2017 16:00	10/16/2017 10:12
101317001-13 MW-4	17J0495-13	Ground Water	10/13/2017 14:25	10/16/2017 10:12
101317001-14 MW-11	17J0495-14	Ground Water	10/13/2017 15:00	10/16/2017 10:12
101317001-15 MW-10	17J0495-15	Ground Water	10/13/2017 15:30	10/16/2017 10:12
101317001-16 MW-13	17J0495-16	Ground Water	10/13/2017 14:40	10/16/2017 10:12
101317001-17 MW-12	17J0495-17	Ground Water	10/13/2017 15:45	10/16/2017 10:12
101317001-18 MW-14	17J0495-18	Ground Water	10/13/2017 15:20	10/16/2017 10:12

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 92717001-1 Trip Blank **Laboratory Sample ID:** 17J0495-01

Grab Date/Time: 09/27/2017 15:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	01	SW8015C	<0.10 mg/L		0.10	1	10/17/17 09:10	10/17/17 09:10	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*01*	*SW8015C*	*95.8 %*		*80-120*		*10/17/17 09:10*	*10/17/17 09:10*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	01	SW8260B	<0.40 ug/L		0.40	1	10/17/17 09:23	10/17/17 09:23	JDW
1,1,1-Trichloroethane	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,1,2,2-Tetrachloroethane	01	SW8260B	<0.40 ug/L		0.40	1	10/17/17 09:23	10/17/17 09:23	JDW
1,1,2-Trichloroethane	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,1-Dichloroethane	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,1-Dichloroethylene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,1-Dichloropropene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,2,3-Trichlorobenzene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,2,3-Trichloropropane	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,2,4-Trichlorobenzene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,2,4-Trimethylbenzene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,2-Dibromo-3-chloropropane (DBCP)	01	SW8260B	<4.00 ug/L		4.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,2-Dibromoethane (EDB)	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,2-Dichlorobenzene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,2-Dichloroethane	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,2-Dichloropropane	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,3,5-Trimethylbenzene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,3-Dichlorobenzene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,3-Dichloropropane	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
1,4-Dichlorobenzene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
2,2-Dichloropropane	01	SW8260B	<2.00 ug/L		2.00	1	10/17/17 09:23	10/17/17 09:23	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 92717001-1 Trip Blank **Laboratory Sample ID:** 17J0495-01

Grab Date/Time: 09/27/2017 15:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	01	SW8260B	<10.0 ug/L		10.0	1	10/17/17 09:23	10/17/17 09:23	JDW
2-Chlorotoluene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
2-Hexanone (MBK)	01	SW8260B	<5.00 ug/L		5.00	1	10/17/17 09:23	10/17/17 09:23	JDW
4-Chlorotoluene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
4-Isopropyltoluene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
4-Methyl-2-pentanone (MIBK)	01	SW8260B	<5.00 ug/L		5.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Acetone	01	SW8260B	<10.0 ug/L		10.0	1	10/17/17 09:23	10/17/17 09:23	JDW
Benzene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Bromobenzene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Bromochloromethane	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Bromodichloromethane	01	SW8260B	<0.50 ug/L		0.50	1	10/17/17 09:23	10/17/17 09:23	JDW
Bromoform	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Bromomethane	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Carbon disulfide	01	SW8260B	<10.0 ug/L		10.0	1	10/17/17 09:23	10/17/17 09:23	JDW
Carbon tetrachloride	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Chlorobenzene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Chloroethane	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Chloroform	01	SW8260B	<0.50 ug/L		0.50	1	10/17/17 09:23	10/17/17 09:23	JDW
Chloromethane	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
cis-1,2-Dichloroethylene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
cis-1,3-Dichloropropene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Dibromochloromethane	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Dibromomethane	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Dichlorodifluoromethane	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Di-isopropyl ether (DIPE)	01	SW8260B	<5.00 ug/L		5.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Ethylbenzene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 92717001-1 Trip Blank **Laboratory Sample ID:** 17J0495-01

Grab Date/Time: 09/27/2017 15:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Iodomethane	01	SW8260B	<10.0 ug/L		10.0	1	10/17/17 09:23	10/17/17 09:23	JDW
Isopropylbenzene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
m+p-Xylenes	01	SW8260B	<2.00 ug/L		2.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Methylene chloride	01	SW8260B	<4.00 ug/L		4.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Methyl-t-butyl ether (MTBE)	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Naphthalene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
n-Butylbenzene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
n-Propylbenzene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
o-Xylene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
sec-Butylbenzene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Styrene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
tert-Butylbenzene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Tetrachloroethylene (PCE)	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Toluene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
trans-1,2-Dichloroethylene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
trans-1,3-Dichloropropene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Trichloroethylene	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Trichlorofluoromethane	01	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Vinyl acetate	01	SW8260B	<10.0 ug/L		10.0	1	10/17/17 09:23	10/17/17 09:23	JDW
Vinyl chloride	01	SW8260B	<0.50 ug/L		0.50	1	10/17/17 09:23	10/17/17 09:23	JDW
Xylenes, Total	01	SW8260B	<3.00 ug/L		3.00	1	10/17/17 09:23	10/17/17 09:23	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*01*	*SW8260B*	*101 %*		*70-120*		*10/17/17 09:23*	*10/17/17 09:23*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*01*	*SW8260B*	*96.7 %*		*75-120*		*10/17/17 09:23*	*10/17/17 09:23*	*JDW*

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 92717001-1 Trip Blank **Laboratory Sample ID:** 17J0495-01

Grab Date/Time: 09/27/2017 15:50

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*01*	*SW8260B*	*97.0 %*		*80-119*		*10/17/17 09:23*	*10/17/17 09:23*	*JDW*
Surr: Toluene-d8 (Surr)	*01*	*SW8260B*	*103 %*		*85-120*		*10/17/17 09:23*	*10/17/17 09:23*	*JDW*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	01	SW8011	<0.010 ug/L		0.010	1	10/17/17 15:12	10/19/17 21:16	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-2 Rinsate Blank **Laboratory Sample ID:** 17J0495-02

Grab Date/Time: 10/13/2017 13:05

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	02	SW8015C	<0.10 mg/L		0.10	1	10/17/17 09:33	10/17/17 09:33	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*02*	*SW8015C*	*97.0 %*		*80-120*		*10/17/17 09:33*	*10/17/17 09:33*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	02	SW8260B	<0.40 ug/L		0.40	1	10/17/17 09:46	10/17/17 09:46	JDW
1,1,1-Trichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,1,2,2-Tetrachloroethane	02	SW8260B	<0.40 ug/L		0.40	1	10/17/17 09:46	10/17/17 09:46	JDW
1,1,2-Trichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,1-Dichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,1-Dichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,1-Dichloropropene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,2,3-Trichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,2,3-Trichloropropane	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,2,4-Trichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,2,4-Trimethylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,2-Dibromo-3-chloropropane (DBCP)	02	SW8260B	<4.00 ug/L		4.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,2-Dibromoethane (EDB)	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,2-Dichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,2-Dichloroethane	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,2-Dichloropropane	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,3,5-Trimethylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,3-Dichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,3-Dichloropropane	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
1,4-Dichlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
2,2-Dichloropropane	02	SW8260B	<2.00 ug/L		2.00	1	10/17/17 09:46	10/17/17 09:46	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-2 Rinsate Blank **Laboratory Sample ID:** 17J0495-02

Grab Date/Time: 10/13/2017 13:05

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	02	SW8260B	<10.0 ug/L		10.0	1	10/17/17 09:46	10/17/17 09:46	JDW
2-Chlorotoluene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
2-Hexanone (MBK)	02	SW8260B	<5.00 ug/L		5.00	1	10/17/17 09:46	10/17/17 09:46	JDW
4-Chlorotoluene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
4-Isopropyltoluene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
4-Methyl-2-pentanone (MIBK)	02	SW8260B	<5.00 ug/L		5.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Acetone	02	SW8260B	<10.0 ug/L		10.0	1	10/17/17 09:46	10/17/17 09:46	JDW
Benzene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Bromobenzene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Bromochloromethane	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Bromodichloromethane	02	SW8260B	<0.50 ug/L		0.50	1	10/17/17 09:46	10/17/17 09:46	JDW
Bromoform	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Bromomethane	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Carbon disulfide	02	SW8260B	<10.0 ug/L		10.0	1	10/17/17 09:46	10/17/17 09:46	JDW
Carbon tetrachloride	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Chlorobenzene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Chloroethane	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Chloroform	02	SW8260B	<0.50 ug/L		0.50	1	10/17/17 09:46	10/17/17 09:46	JDW
Chloromethane	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
cis-1,2-Dichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
cis-1,3-Dichloropropene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Dibromochloromethane	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Dibromomethane	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Dichlorodifluoromethane	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Di-isopropyl ether (DIPE)	02	SW8260B	<5.00 ug/L		5.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Ethylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-2 Rinsate Blank **Laboratory Sample ID:** 17J0495-02

Grab Date/Time: 10/13/2017 13:05

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Iodomethane	02	SW8260B	<10.0 ug/L		10.0	1	10/17/17 09:46	10/17/17 09:46	JDW
Isopropylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
m+p-Xylenes	02	SW8260B	<2.00 ug/L		2.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Methylene chloride	02	SW8260B	<4.00 ug/L		4.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Methyl-t-butyl ether (MTBE)	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Naphthalene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
n-Butylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
n-Propylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
o-Xylene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
sec-Butylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Styrene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
tert-Butylbenzene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Tetrachloroethylene (PCE)	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Toluene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
trans-1,2-Dichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
trans-1,3-Dichloropropene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Trichloroethylene	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Trichlorofluoromethane	02	SW8260B	<1.00 ug/L		1.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Vinyl acetate	02	SW8260B	<10.0 ug/L		10.0	1	10/17/17 09:46	10/17/17 09:46	JDW
Vinyl chloride	02	SW8260B	<0.50 ug/L		0.50	1	10/17/17 09:46	10/17/17 09:46	JDW
Xylenes, Total	02	SW8260B	<3.00 ug/L		3.00	1	10/17/17 09:46	10/17/17 09:46	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*02*	*SW8260B*	*101 %*		*70-120*		*10/17/17 09:46*	*10/17/17 09:46*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*02*	*SW8260B*	*95.4 %*		*75-120*		*10/17/17 09:46*	*10/17/17 09:46*	*JDW*

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-2 Rinsate Blank **Laboratory Sample ID:** 17J0495-02

Grab Date/Time: 10/13/2017 13:05

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*02*	*SW8260B*	*93.7 %*		*80-119*		*10/17/17 09:46*	*10/17/17 09:46*	*JDW*
Surr: Toluene-d8 (Surr)	*02*	*SW8260B*	*104 %*		*85-120*		*10/17/17 09:46*	*10/17/17 09:46*	*JDW*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	02	SW8011	<0.010 ug/L		0.010	1	10/17/17 15:12	10/19/17 21:36	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-3 MW-2 **Laboratory Sample ID:** 17J0495-03

Grab Date/Time: 10/13/2017 14:55

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	03	SW8015C	<0.10 mg/L		0.10	1	10/17/17 12:36	10/17/17 12:36	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*03*	*SW8015C*	*93.0 %*		*80-120*		*10/17/17 12:36*	*10/17/17 12:36*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	03	SW8260B	<0.40 ug/L		0.40	1	10/17/17 10:10	10/17/17 10:10	JDW
1,1,1-Trichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,1,2,2-Tetrachloroethane	03	SW8260B	<0.40 ug/L		0.40	1	10/17/17 10:10	10/17/17 10:10	JDW
1,1,2-Trichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,1-Dichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,1-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,1-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,2,3-Trichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,2,3-Trichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,2,4-Trichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,2,4-Trimethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,2-Dibromo-3-chloropropane (DBCP)	03	SW8260B	<4.00 ug/L		4.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,2-Dibromoethane (EDB)	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,2-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,2-Dichloroethane	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,2-Dichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,3,5-Trimethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,3-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,3-Dichloropropane	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
1,4-Dichlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
2,2-Dichloropropane	03	SW8260B	<2.00 ug/L		2.00	1	10/17/17 10:10	10/17/17 10:10	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-3 MW-2 **Laboratory Sample ID:** 17J0495-03

Grab Date/Time: 10/13/2017 14:55

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	03	SW8260B	<10.0 ug/L		10.0	1	10/17/17 10:10	10/17/17 10:10	JDW
2-Chlorotoluene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
2-Hexanone (MBK)	03	SW8260B	<5.00 ug/L		5.00	1	10/17/17 10:10	10/17/17 10:10	JDW
4-Chlorotoluene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
4-Isopropyltoluene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
4-Methyl-2-pentanone (MIBK)	03	SW8260B	<5.00 ug/L		5.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Acetone	03	SW8260B	<10.0 ug/L		10.0	1	10/17/17 10:10	10/17/17 10:10	JDW
Benzene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Bromobenzene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Bromochloromethane	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Bromodichloromethane	03	SW8260B	<0.50 ug/L		0.50	1	10/17/17 10:10	10/17/17 10:10	JDW
Bromoform	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Bromomethane	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Carbon disulfide	03	SW8260B	<10.0 ug/L		10.0	1	10/17/17 10:10	10/17/17 10:10	JDW
Carbon tetrachloride	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Chlorobenzene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Chloroethane	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Chloroform	03	SW8260B	<0.50 ug/L		0.50	1	10/17/17 10:10	10/17/17 10:10	JDW
Chloromethane	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
cis-1,2-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
cis-1,3-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Dibromochloromethane	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Dibromomethane	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Dichlorodifluoromethane	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Di-isopropyl ether (DIPE)	03	SW8260B	<5.00 ug/L		5.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Ethylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-3 MW-2 **Laboratory Sample ID:** 17J0495-03

Grab Date/Time: 10/13/2017 14:55

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Iodomethane	03	SW8260B	<10.0 ug/L		10.0	1	10/17/17 10:10	10/17/17 10:10	JDW
Isopropylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
m+p-Xylenes	03	SW8260B	<2.00 ug/L		2.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Methylene chloride	03	SW8260B	<4.00 ug/L		4.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Methyl-t-butyl ether (MTBE)	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Naphthalene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
n-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
n-Propylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
o-Xylene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
sec-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Styrene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
tert-Butylbenzene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Tetrachloroethylene (PCE)	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Toluene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
trans-1,2-Dichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
trans-1,3-Dichloropropene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Trichloroethylene	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Trichlorofluoromethane	03	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Vinyl acetate	03	SW8260B	<10.0 ug/L		10.0	1	10/17/17 10:10	10/17/17 10:10	JDW
Vinyl chloride	03	SW8260B	<0.50 ug/L		0.50	1	10/17/17 10:10	10/17/17 10:10	JDW
Xylenes, Total	03	SW8260B	<3.00 ug/L		3.00	1	10/17/17 10:10	10/17/17 10:10	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*03*	*SW8260B*	*98.4 %*		*70-120*		*10/17/17 10:10*	*10/17/17 10:10*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*03*	*SW8260B*	*97.4 %*		*75-120*		*10/17/17 10:10*	*10/17/17 10:10*	*JDW*

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-3 MW-2 **Laboratory Sample ID:** 17J0495-03

Grab Date/Time: 10/13/2017 14:55

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*03*	*SW8260B*	*96.3 %*		*80-119*		*10/17/17 10:10*	*10/17/17 10:10*	*JDW*
Surr: Toluene-d8 (Surr)	*03*	*SW8260B*	*101 %*		*85-120*		*10/17/17 10:10*	*10/17/17 10:10*	*JDW*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	03	SW8011	<0.010 ug/L		0.010	1	10/17/17 15:12	10/19/17 21:55	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-4 MW-6 **Laboratory Sample ID:** 17J0495-04

Grab Date/Time: 10/13/2017 15:10

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	04	SW8015C	<0.10 mg/L		0.10	1	10/17/17 15:52	10/17/17 15:52	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*04*	*SW8015C*	*97.6 %*		*80-120*		*10/17/17 15:52*	*10/17/17 15:52*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	04	SW8260B	<0.40 ug/L		0.40	1	10/17/17 10:33	10/17/17 10:33	JDW
1,1,1-Trichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,1,2,2-Tetrachloroethane	04	SW8260B	<0.40 ug/L		0.40	1	10/17/17 10:33	10/17/17 10:33	JDW
1,1,2-Trichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,1-Dichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,1-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,1-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,2,3-Trichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,2,3-Trichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,2,4-Trichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,2,4-Trimethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,2-Dibromo-3-chloropropane (DBCP)	04	SW8260B	<4.00 ug/L		4.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,2-Dibromoethane (EDB)	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,2-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,2-Dichloroethane	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,2-Dichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,3,5-Trimethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,3-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,3-Dichloropropane	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
1,4-Dichlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
2,2-Dichloropropane	04	SW8260B	<2.00 ug/L		2.00	1	10/17/17 10:33	10/17/17 10:33	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-4 MW-6 **Laboratory Sample ID:** 17J0495-04

Grab Date/Time: 10/13/2017 15:10

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	04	SW8260B	<10.0 ug/L		10.0	1	10/17/17 10:33	10/17/17 10:33	JDW
2-Chlorotoluene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
2-Hexanone (MBK)	04	SW8260B	<5.00 ug/L		5.00	1	10/17/17 10:33	10/17/17 10:33	JDW
4-Chlorotoluene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
4-Isopropyltoluene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
4-Methyl-2-pentanone (MIBK)	04	SW8260B	<5.00 ug/L		5.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Acetone	04	SW8260B	<10.0 ug/L		10.0	1	10/17/17 10:33	10/17/17 10:33	JDW
Benzene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Bromobenzene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Bromochloromethane	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Bromodichloromethane	04	SW8260B	<0.50 ug/L		0.50	1	10/17/17 10:33	10/17/17 10:33	JDW
Bromoform	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Bromomethane	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Carbon disulfide	04	SW8260B	<10.0 ug/L		10.0	1	10/17/17 10:33	10/17/17 10:33	JDW
Carbon tetrachloride	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Chlorobenzene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Chloroethane	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Chloroform	04	SW8260B	<0.50 ug/L		0.50	1	10/17/17 10:33	10/17/17 10:33	JDW
Chloromethane	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
cis-1,2-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
cis-1,3-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Dibromochloromethane	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Dibromomethane	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Dichlorodifluoromethane	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Di-isopropyl ether (DIPE)	04	SW8260B	<5.00 ug/L		5.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Ethylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-4 MW-6 **Laboratory Sample ID:** 17J0495-04

Grab Date/Time: 10/13/2017 15:10

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Iodomethane	04	SW8260B	<10.0 ug/L		10.0	1	10/17/17 10:33	10/17/17 10:33	JDW
Isopropylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
m+p-Xylenes	04	SW8260B	<2.00 ug/L		2.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Methylene chloride	04	SW8260B	<4.00 ug/L		4.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Methyl-t-butyl ether (MTBE)	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Naphthalene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
n-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
n-Propylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
o-Xylene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
sec-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Styrene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
tert-Butylbenzene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Tetrachloroethylene (PCE)	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Toluene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
trans-1,2-Dichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
trans-1,3-Dichloropropene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Trichloroethylene	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Trichlorofluoromethane	04	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Vinyl acetate	04	SW8260B	<10.0 ug/L		10.0	1	10/17/17 10:33	10/17/17 10:33	JDW
Vinyl chloride	04	SW8260B	<0.50 ug/L		0.50	1	10/17/17 10:33	10/17/17 10:33	JDW
Xylenes, Total	04	SW8260B	<3.00 ug/L		3.00	1	10/17/17 10:33	10/17/17 10:33	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*04*	*SW8260B*	*101 %*		*70-120*		*10/17/17 10:33*	*10/17/17 10:33*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*04*	*SW8260B*	*95.7 %*		*75-120*		*10/17/17 10:33*	*10/17/17 10:33*	*JDW*

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-4 MW-6 **Laboratory Sample ID:** 17J0495-04

Grab Date/Time: 10/13/2017 15:10

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*04*	*SW8260B*	*100 %*		*80-119*		*10/17/17 10:33*	*10/17/17 10:33*	*JDW*
Surr: Toluene-d8 (Surr)	*04*	*SW8260B*	*103 %*		*85-120*		*10/17/17 10:33*	*10/17/17 10:33*	*JDW*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	04	SW8011	<0.010 ug/L		0.010	1	10/17/17 15:14	10/20/17 00:50	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-5 MW-5 **Laboratory Sample ID:** 17J0495-05

Grab Date/Time: 10/13/2017 14:30

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	05	SW8015C	<0.10 mg/L		0.10	1	10/17/17 09:55	10/17/17 09:55	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*05*	*SW8015C*	*96.8 %*		*80-120*		*10/17/17 09:55*	*10/17/17 09:55*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	05	SW8260B	<0.40 ug/L		0.40	1	10/17/17 10:57	10/17/17 10:57	JDW
1,1,1-Trichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,1,2,2-Tetrachloroethane	05	SW8260B	<0.40 ug/L		0.40	1	10/17/17 10:57	10/17/17 10:57	JDW
1,1,2-Trichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,1-Dichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,1-Dichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,1-Dichloropropene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,2,3-Trichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,2,3-Trichloropropane	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,2,4-Trichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,2,4-Trimethylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,2-Dibromo-3-chloropropane (DBCP)	05	SW8260B	<4.00 ug/L		4.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,2-Dibromoethane (EDB)	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,2-Dichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,2-Dichloroethane	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,2-Dichloropropane	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,3,5-Trimethylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,3-Dichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,3-Dichloropropane	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
1,4-Dichlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
2,2-Dichloropropane	05	SW8260B	<2.00 ug/L		2.00	1	10/17/17 10:57	10/17/17 10:57	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-5 MW-5 **Laboratory Sample ID:** 17J0495-05

Grab Date/Time: 10/13/2017 14:30

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	05	SW8260B	<10.0 ug/L		10.0	1	10/17/17 10:57	10/17/17 10:57	JDW
2-Chlorotoluene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
2-Hexanone (MBK)	05	SW8260B	<5.00 ug/L		5.00	1	10/17/17 10:57	10/17/17 10:57	JDW
4-Chlorotoluene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
4-Isopropyltoluene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
4-Methyl-2-pentanone (MIBK)	05	SW8260B	<5.00 ug/L		5.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Acetone	05	SW8260B	<10.0 ug/L		10.0	1	10/17/17 10:57	10/17/17 10:57	JDW
Benzene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Bromobenzene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Bromochloromethane	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Bromodichloromethane	05	SW8260B	<0.50 ug/L		0.50	1	10/17/17 10:57	10/17/17 10:57	JDW
Bromoform	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Bromomethane	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Carbon disulfide	05	SW8260B	<10.0 ug/L		10.0	1	10/17/17 10:57	10/17/17 10:57	JDW
Carbon tetrachloride	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Chlorobenzene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Chloroethane	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Chloroform	05	SW8260B	<0.50 ug/L		0.50	1	10/17/17 10:57	10/17/17 10:57	JDW
Chloromethane	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
cis-1,2-Dichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
cis-1,3-Dichloropropene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Dibromochloromethane	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Dibromomethane	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Dichlorodifluoromethane	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Di-isopropyl ether (DIPE)	05	SW8260B	<5.00 ug/L		5.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Ethylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-5 MW-5 **Laboratory Sample ID:** 17J0495-05

Grab Date/Time: 10/13/2017 14:30

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Iodomethane	05	SW8260B	<10.0 ug/L		10.0	1	10/17/17 10:57	10/17/17 10:57	JDW
Isopropylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
m+p-Xylenes	05	SW8260B	<2.00 ug/L		2.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Methylene chloride	05	SW8260B	<4.00 ug/L		4.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Methyl-t-butyl ether (MTBE)	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Naphthalene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
n-Butylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
n-Propylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
o-Xylene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
sec-Butylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Styrene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
tert-Butylbenzene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Tetrachloroethylene (PCE)	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Toluene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
trans-1,2-Dichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
trans-1,3-Dichloropropene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Trichloroethylene	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Trichlorofluoromethane	05	SW8260B	<1.00 ug/L		1.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Vinyl acetate	05	SW8260B	<10.0 ug/L		10.0	1	10/17/17 10:57	10/17/17 10:57	JDW
Vinyl chloride	05	SW8260B	<0.50 ug/L		0.50	1	10/17/17 10:57	10/17/17 10:57	JDW
Xylenes, Total	05	SW8260B	<3.00 ug/L		3.00	1	10/17/17 10:57	10/17/17 10:57	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*05*	*SW8260B*	*101 %*		*70-120*		*10/17/17 10:57*	*10/17/17 10:57*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*05*	*SW8260B*	*96.1 %*		*75-120*		*10/17/17 10:57*	*10/17/17 10:57*	*JDW*

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-5 MW-5 **Laboratory Sample ID:** 17J0495-05

Grab Date/Time: 10/13/2017 14:30

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*05*	*SW8260B*	*95.0 %*		*80-119*		*10/17/17 10:57*	*10/17/17 10:57*	*JDW*
Surr: Toluene-d8 (Surr)	*05*	*SW8260B*	*101 %*		*85-120*		*10/17/17 10:57*	*10/17/17 10:57*	*JDW*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	05	SW8011	<0.010 ug/L		0.010	1	10/17/17 15:14	10/20/17 01:09	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-6 MW-1 **Laboratory Sample ID:** 17J0495-06

Grab Date/Time: 10/13/2017 14:05

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	06	SW8015C	<0.10 mg/L		0.10	1	10/17/17 10:18	10/17/17 10:18	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*06*	*SW8015C*	*96.5 %*		*80-120*		*10/17/17 10:18*	*10/17/17 10:18*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	06	SW8260B	<0.40 ug/L		0.40	1	10/17/17 11:20	10/17/17 11:20	JDW
1,1,1-Trichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,1,2,2-Tetrachloroethane	06	SW8260B	<0.40 ug/L		0.40	1	10/17/17 11:20	10/17/17 11:20	JDW
1,1,2-Trichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,1-Dichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,1-Dichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,1-Dichloropropene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,2,3-Trichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,2,3-Trichloropropane	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,2,4-Trichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,2,4-Trimethylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,2-Dibromo-3-chloropropane (DBCP)	06	SW8260B	<4.00 ug/L		4.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,2-Dibromoethane (EDB)	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,2-Dichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,2-Dichloroethane	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,2-Dichloropropane	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,3,5-Trimethylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,3-Dichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,3-Dichloropropane	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
1,4-Dichlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
2,2-Dichloropropane	06	SW8260B	<2.00 ug/L		2.00	1	10/17/17 11:20	10/17/17 11:20	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-6 MW-1 **Laboratory Sample ID:** 17J0495-06

Grab Date/Time: 10/13/2017 14:05

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	06	SW8260B	<10.0 ug/L		10.0	1	10/17/17 11:20	10/17/17 11:20	JDW
2-Chlorotoluene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
2-Hexanone (MBK)	06	SW8260B	<5.00 ug/L		5.00	1	10/17/17 11:20	10/17/17 11:20	JDW
4-Chlorotoluene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
4-Isopropyltoluene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
4-Methyl-2-pentanone (MIBK)	06	SW8260B	<5.00 ug/L		5.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Acetone	06	SW8260B	<10.0 ug/L		10.0	1	10/17/17 11:20	10/17/17 11:20	JDW
Benzene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Bromobenzene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Bromochloromethane	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Bromodichloromethane	06	SW8260B	<0.50 ug/L		0.50	1	10/17/17 11:20	10/17/17 11:20	JDW
Bromoform	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Bromomethane	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Carbon disulfide	06	SW8260B	<10.0 ug/L		10.0	1	10/17/17 11:20	10/17/17 11:20	JDW
Carbon tetrachloride	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Chlorobenzene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Chloroethane	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Chloroform	06	SW8260B	<0.50 ug/L		0.50	1	10/17/17 11:20	10/17/17 11:20	JDW
Chloromethane	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
cis-1,2-Dichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
cis-1,3-Dichloropropene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Dibromochloromethane	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Dibromomethane	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Dichlorodifluoromethane	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Di-isopropyl ether (DIPE)	06	SW8260B	<5.00 ug/L		5.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Ethylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-6 MW-1 **Laboratory Sample ID:** 17J0495-06

Grab Date/Time: 10/13/2017 14:05

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Iodomethane	06	SW8260B	<10.0 ug/L		10.0	1	10/17/17 11:20	10/17/17 11:20	JDW
Isopropylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
m+p-Xylenes	06	SW8260B	<2.00 ug/L		2.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Methylene chloride	06	SW8260B	<4.00 ug/L		4.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Methyl-t-butyl ether (MTBE)	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Naphthalene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
n-Butylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
n-Propylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
o-Xylene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
sec-Butylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Styrene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
tert-Butylbenzene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Tetrachloroethylene (PCE)	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Toluene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
trans-1,2-Dichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
trans-1,3-Dichloropropene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Trichloroethylene	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Trichlorofluoromethane	06	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Vinyl acetate	06	SW8260B	<10.0 ug/L		10.0	1	10/17/17 11:20	10/17/17 11:20	JDW
Vinyl chloride	06	SW8260B	<0.50 ug/L		0.50	1	10/17/17 11:20	10/17/17 11:20	JDW
Xylenes, Total	06	SW8260B	<3.00 ug/L		3.00	1	10/17/17 11:20	10/17/17 11:20	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*06*	*SW8260B*	*105 %*		*70-120*		*10/17/17 11:20*	*10/17/17 11:20*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*06*	*SW8260B*	*96.8 %*		*75-120*		*10/17/17 11:20*	*10/17/17 11:20*	*JDW*

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-6 MW-1 **Laboratory Sample ID:** 17J0495-06

Grab Date/Time: 10/13/2017 14:05

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*06*	*SW8260B*	*98.1 %*		*80-119*		*10/17/17 11:20*	*10/17/17 11:20*	*JDW*
Surr: Toluene-d8 (Surr)	*06*	*SW8260B*	*102 %*		*85-120*		*10/17/17 11:20*	*10/17/17 11:20*	*JDW*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	06	SW8011	<0.010 ug/L		0.010	1	10/17/17 15:14	10/20/17 01:29	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-7 MW-8 **Laboratory Sample ID:** 17J0495-07

Grab Date/Time: 10/13/2017 13:35

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	07	SW8015C	<0.10 mg/L		0.10	1	10/17/17 10:41	10/17/17 10:41	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*07*	*SW8015C*	*94.6 %*		*80-120*		*10/17/17 10:41*	*10/17/17 10:41*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	07	SW8260B	<0.40 ug/L		0.40	1	10/17/17 11:44	10/17/17 11:44	JDW
1,1,1-Trichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,1,2,2-Tetrachloroethane	07	SW8260B	<0.40 ug/L		0.40	1	10/17/17 11:44	10/17/17 11:44	JDW
1,1,2-Trichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,1-Dichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,1-Dichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,1-Dichloropropene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,2,3-Trichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,2,3-Trichloropropane	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,2,4-Trichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,2,4-Trimethylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,2-Dibromo-3-chloropropane (DBCP)	07	SW8260B	<4.00 ug/L		4.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,2-Dibromoethane (EDB)	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,2-Dichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,2-Dichloroethane	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,2-Dichloropropane	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,3,5-Trimethylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,3-Dichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,3-Dichloropropane	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
1,4-Dichlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
2,2-Dichloropropane	07	SW8260B	<2.00 ug/L		2.00	1	10/17/17 11:44	10/17/17 11:44	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-7 MW-8 **Laboratory Sample ID:** 17J0495-07

Grab Date/Time: 10/13/2017 13:35

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	07	SW8260B	<10.0 ug/L		10.0	1	10/17/17 11:44	10/17/17 11:44	JDW
2-Chlorotoluene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
2-Hexanone (MBK)	07	SW8260B	<5.00 ug/L		5.00	1	10/17/17 11:44	10/17/17 11:44	JDW
4-Chlorotoluene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
4-Isopropyltoluene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
4-Methyl-2-pentanone (MIBK)	07	SW8260B	<5.00 ug/L		5.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Acetone	07	SW8260B	<10.0 ug/L		10.0	1	10/17/17 11:44	10/17/17 11:44	JDW
Benzene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Bromobenzene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Bromochloromethane	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Bromodichloromethane	07	SW8260B	<0.50 ug/L		0.50	1	10/17/17 11:44	10/17/17 11:44	JDW
Bromoform	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Bromomethane	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Carbon disulfide	07	SW8260B	<10.0 ug/L		10.0	1	10/17/17 11:44	10/17/17 11:44	JDW
Carbon tetrachloride	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Chlorobenzene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Chloroethane	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Chloroform	07	SW8260B	<0.50 ug/L		0.50	1	10/17/17 11:44	10/17/17 11:44	JDW
Chloromethane	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
cis-1,2-Dichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
cis-1,3-Dichloropropene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Dibromochloromethane	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Dibromomethane	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Dichlorodifluoromethane	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Di-isopropyl ether (DIPE)	07	SW8260B	<5.00 ug/L		5.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Ethylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-7 MW-8 **Laboratory Sample ID:** 17J0495-07

Grab Date/Time: 10/13/2017 13:35

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Iodomethane	07	SW8260B	<10.0 ug/L		10.0	1	10/17/17 11:44	10/17/17 11:44	JDW
Isopropylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
m+p-Xylenes	07	SW8260B	<2.00 ug/L		2.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Methylene chloride	07	SW8260B	<4.00 ug/L		4.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Methyl-t-butyl ether (MTBE)	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Naphthalene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
n-Butylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
n-Propylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
o-Xylene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
sec-Butylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Styrene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
tert-Butylbenzene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Tetrachloroethylene (PCE)	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Toluene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
trans-1,2-Dichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
trans-1,3-Dichloropropene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Trichloroethylene	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Trichlorofluoromethane	07	SW8260B	<1.00 ug/L		1.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Vinyl acetate	07	SW8260B	<10.0 ug/L		10.0	1	10/17/17 11:44	10/17/17 11:44	JDW
Vinyl chloride	07	SW8260B	<0.50 ug/L		0.50	1	10/17/17 11:44	10/17/17 11:44	JDW
Xylenes, Total	07	SW8260B	<3.00 ug/L		3.00	1	10/17/17 11:44	10/17/17 11:44	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*07*	*SW8260B*	*104 %*		*70-120*		*10/17/17 11:44*	*10/17/17 11:44*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*07*	*SW8260B*	*95.2 %*		*75-120*		*10/17/17 11:44*	*10/17/17 11:44*	*JDW*

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-7 MW-8 **Laboratory Sample ID:** 17J0495-07

Grab Date/Time: 10/13/2017 13:35

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*07*	*SW8260B*	*102 %*		*80-119*		*10/17/17 11:44*	*10/17/17 11:44*	*JDW*
Surr: Toluene-d8 (Surr)	*07*	*SW8260B*	*104 %*		*85-120*		*10/17/17 11:44*	*10/17/17 11:44*	*JDW*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	07	SW8011	<0.010 ug/L		0.010	1	10/17/17 15:14	10/20/17 01:48	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-8 MW-7 **Laboratory Sample ID:** 17J0495-08

Grab Date/Time: 10/13/2017 13:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	08	SW8015C	<0.10 mg/L		0.10	1	10/17/17 11:04	10/17/17 11:04	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*08*	*SW8015C*	*92.7 %*		*80-120*		*10/17/17 11:04*	*10/17/17 11:04*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	08	SW8260B	<0.40 ug/L		0.40	1	10/17/17 12:30	10/17/17 12:30	JDW
1,1,1-Trichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,1,2,2-Tetrachloroethane	08	SW8260B	<0.40 ug/L		0.40	1	10/17/17 12:30	10/17/17 12:30	JDW
1,1,2-Trichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,1-Dichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,1-Dichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,1-Dichloropropene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,2,3-Trichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,2,3-Trichloropropane	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,2,4-Trichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,2,4-Trimethylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,2-Dibromo-3-chloropropane (DBCP)	08	SW8260B	<4.00 ug/L		4.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,2-Dibromoethane (EDB)	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,2-Dichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,2-Dichloroethane	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,2-Dichloropropane	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,3,5-Trimethylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,3-Dichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,3-Dichloropropane	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
1,4-Dichlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
2,2-Dichloropropane	08	SW8260B	<2.00 ug/L		2.00	1	10/17/17 12:30	10/17/17 12:30	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-8 MW-7 **Laboratory Sample ID:** 17J0495-08

Grab Date/Time: 10/13/2017 13:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	08	SW8260B	<10.0 ug/L		10.0	1	10/17/17 12:30	10/17/17 12:30	JDW
2-Chlorotoluene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
2-Hexanone (MBK)	08	SW8260B	<5.00 ug/L		5.00	1	10/17/17 12:30	10/17/17 12:30	JDW
4-Chlorotoluene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
4-Isopropyltoluene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
4-Methyl-2-pentanone (MIBK)	08	SW8260B	<5.00 ug/L		5.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Acetone	08	SW8260B	<10.0 ug/L		10.0	1	10/17/17 12:30	10/17/17 12:30	JDW
Benzene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Bromobenzene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Bromochloromethane	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Bromodichloromethane	08	SW8260B	<0.50 ug/L		0.50	1	10/17/17 12:30	10/17/17 12:30	JDW
Bromoform	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Bromomethane	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Carbon disulfide	08	SW8260B	<10.0 ug/L		10.0	1	10/17/17 12:30	10/17/17 12:30	JDW
Carbon tetrachloride	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Chlorobenzene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Chloroethane	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Chloroform	08	SW8260B	<0.50 ug/L		0.50	1	10/17/17 12:30	10/17/17 12:30	JDW
Chloromethane	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
cis-1,2-Dichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
cis-1,3-Dichloropropene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Dibromochloromethane	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Dibromomethane	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Dichlorodifluoromethane	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Di-isopropyl ether (DIPE)	08	SW8260B	<5.00 ug/L		5.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Ethylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-8 MW-7 **Laboratory Sample ID:** 17J0495-08

Grab Date/Time: 10/13/2017 13:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Iodomethane	08	SW8260B	<10.0 ug/L		10.0	1	10/17/17 12:30	10/17/17 12:30	JDW
Isopropylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
m+p-Xylenes	08	SW8260B	<2.00 ug/L		2.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Methylene chloride	08	SW8260B	<4.00 ug/L		4.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Methyl-t-butyl ether (MTBE)	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Naphthalene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
n-Butylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
n-Propylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
o-Xylene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
sec-Butylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Styrene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
tert-Butylbenzene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Tetrachloroethylene (PCE)	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Toluene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
trans-1,2-Dichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
trans-1,3-Dichloropropene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Trichloroethylene	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Trichlorofluoromethane	08	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Vinyl acetate	08	SW8260B	<10.0 ug/L		10.0	1	10/17/17 12:30	10/17/17 12:30	JDW
Vinyl chloride	08	SW8260B	<0.50 ug/L		0.50	1	10/17/17 12:30	10/17/17 12:30	JDW
Xylenes, Total	08	SW8260B	<3.00 ug/L		3.00	1	10/17/17 12:30	10/17/17 12:30	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*08*	*SW8260B*	*102 %*		*70-120*		*10/17/17 12:30*	*10/17/17 12:30*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*08*	*SW8260B*	*95.7 %*		*75-120*		*10/17/17 12:30*	*10/17/17 12:30*	*JDW*

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-8 MW-7 **Laboratory Sample ID:** 17J0495-08

Grab Date/Time: 10/13/2017 13:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*08*	*SW8260B*	*98.0 %*		*80-119*		*10/17/17 12:30*	*10/17/17 12:30*	*JDW*
Surr: Toluene-d8 (Surr)	*08*	*SW8260B*	*103 %*		*85-120*		*10/17/17 12:30*	*10/17/17 12:30*	*JDW*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	08	SW8011	<0.010 ug/L		0.010	1	10/17/17 15:14	10/20/17 02:07	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-9 MW-16 **Laboratory Sample ID:** 17J0495-09

Grab Date/Time: 10/13/2017 16:10

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	09	SW8015C	<0.10 mg/L		0.10	1	10/17/17 11:27	10/17/17 11:27	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*09*	*SW8015C*	*100 %*		*80-120*		*10/17/17 11:27*	*10/17/17 11:27*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	09	SW8260B	<0.40 ug/L		0.40	1	10/17/17 12:54	10/17/17 12:54	JDW
1,1,1-Trichloroethane	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,1,2,2-Tetrachloroethane	09	SW8260B	<0.40 ug/L		0.40	1	10/17/17 12:54	10/17/17 12:54	JDW
1,1,2-Trichloroethane	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,1-Dichloroethane	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,1-Dichloroethylene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,1-Dichloropropene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,2,3-Trichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,2,3-Trichloropropane	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,2,4-Trichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,2,4-Trimethylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,2-Dibromo-3-chloropropane (DBCP)	09	SW8260B	<4.00 ug/L		4.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,2-Dibromoethane (EDB)	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,2-Dichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,2-Dichloroethane	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,2-Dichloropropane	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,3,5-Trimethylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,3-Dichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,3-Dichloropropane	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
1,4-Dichlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
2,2-Dichloropropane	09	SW8260B	<2.00 ug/L		2.00	1	10/17/17 12:54	10/17/17 12:54	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-9 MW-16 **Laboratory Sample ID:** 17J0495-09

Grab Date/Time: 10/13/2017 16:10

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	09	SW8260B	<10.0 ug/L		10.0	1	10/17/17 12:54	10/17/17 12:54	JDW
2-Chlorotoluene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
2-Hexanone (MBK)	09	SW8260B	<5.00 ug/L		5.00	1	10/17/17 12:54	10/17/17 12:54	JDW
4-Chlorotoluene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
4-Isopropyltoluene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
4-Methyl-2-pentanone (MIBK)	09	SW8260B	<5.00 ug/L		5.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Acetone	09	SW8260B	<10.0 ug/L		10.0	1	10/17/17 12:54	10/17/17 12:54	JDW
Benzene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Bromobenzene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Bromochloromethane	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Bromodichloromethane	09	SW8260B	<0.50 ug/L		0.50	1	10/17/17 12:54	10/17/17 12:54	JDW
Bromoform	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Bromomethane	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Carbon disulfide	09	SW8260B	<10.0 ug/L		10.0	1	10/17/17 12:54	10/17/17 12:54	JDW
Carbon tetrachloride	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Chlorobenzene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Chloroethane	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Chloroform	09	SW8260B	<0.50 ug/L		0.50	1	10/17/17 12:54	10/17/17 12:54	JDW
Chloromethane	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
cis-1,2-Dichloroethylene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
cis-1,3-Dichloropropene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Dibromochloromethane	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Dibromomethane	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Dichlorodifluoromethane	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Di-isopropyl ether (DIPE)	09	SW8260B	<5.00 ug/L		5.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Ethylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-9 MW-16 **Laboratory Sample ID:** 17J0495-09

Grab Date/Time: 10/13/2017 16:10

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Iodomethane	09	SW8260B	<10.0 ug/L		10.0	1	10/17/17 12:54	10/17/17 12:54	JDW
Isopropylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
m+p-Xylenes	09	SW8260B	<2.00 ug/L		2.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Methylene chloride	09	SW8260B	<4.00 ug/L		4.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Methyl-t-butyl ether (MTBE)	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Naphthalene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
n-Butylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
n-Propylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
o-Xylene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
sec-Butylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Styrene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
tert-Butylbenzene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Tetrachloroethylene (PCE)	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Toluene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
trans-1,2-Dichloroethylene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
trans-1,3-Dichloropropene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Trichloroethylene	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Trichlorofluoromethane	09	SW8260B	<1.00 ug/L		1.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Vinyl acetate	09	SW8260B	<10.0 ug/L		10.0	1	10/17/17 12:54	10/17/17 12:54	JDW
Vinyl chloride	09	SW8260B	<0.50 ug/L		0.50	1	10/17/17 12:54	10/17/17 12:54	JDW
Xylenes, Total	09	SW8260B	<3.00 ug/L		3.00	1	10/17/17 12:54	10/17/17 12:54	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*09*	*SW8260B*	*98.3 %*		*70-120*		*10/17/17 12:54*	*10/17/17 12:54*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*09*	*SW8260B*	*95.3 %*		*75-120*		*10/17/17 12:54*	*10/17/17 12:54*	*JDW*

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-9 MW-16 **Laboratory Sample ID:** 17J0495-09

Grab Date/Time: 10/13/2017 16:10

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*09*	*SW8260B*	*94.6 %*		*80-119*		*10/17/17 12:54*	*10/17/17 12:54*	*JDW*
Surr: Toluene-d8 (Surr)	*09*	*SW8260B*	*99.6 %*		*85-120*		*10/17/17 12:54*	*10/17/17 12:54*	*JDW*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	09	SW8011	<0.010 ug/L		0.010	1	10/17/17 15:14	10/20/17 02:27	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-10 MW-15 **Laboratory Sample ID:** 17J0495-10

Grab Date/Time: 10/13/2017 15:45

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	10	SW8015C	<0.10 mg/L		0.10	1	10/17/17 16:15	10/17/17 16:15	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*10*	*SW8015C*	*108 %*		*80-120*		*10/17/17 16:15*	*10/17/17 16:15*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	10	SW8260B	<0.40 ug/L		0.40	1	10/17/17 13:17	10/17/17 13:17	JDW
1,1,1-Trichloroethane	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,1,2,2-Tetrachloroethane	10	SW8260B	<0.40 ug/L		0.40	1	10/17/17 13:17	10/17/17 13:17	JDW
1,1,2-Trichloroethane	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,1-Dichloroethane	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,1-Dichloroethylene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,1-Dichloropropene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,2,3-Trichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,2,3-Trichloropropane	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,2,4-Trichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,2,4-Trimethylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,2-Dibromo-3-chloropropane (DBCP)	10	SW8260B	<4.00 ug/L		4.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,2-Dibromoethane (EDB)	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,2-Dichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,2-Dichloroethane	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,2-Dichloropropane	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,3,5-Trimethylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,3-Dichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,3-Dichloropropane	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
1,4-Dichlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
2,2-Dichloropropane	10	SW8260B	<2.00 ug/L		2.00	1	10/17/17 13:17	10/17/17 13:17	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-10 MW-15 **Laboratory Sample ID:** 17J0495-10

Grab Date/Time: 10/13/2017 15:45

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	10	SW8260B	<10.0 ug/L		10.0	1	10/17/17 13:17	10/17/17 13:17	JDW
2-Chlorotoluene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
2-Hexanone (MBK)	10	SW8260B	<5.00 ug/L		5.00	1	10/17/17 13:17	10/17/17 13:17	JDW
4-Chlorotoluene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
4-Isopropyltoluene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
4-Methyl-2-pentanone (MIBK)	10	SW8260B	<5.00 ug/L		5.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Acetone	10	SW8260B	<10.0 ug/L		10.0	1	10/17/17 13:17	10/17/17 13:17	JDW
Benzene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Bromobenzene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Bromochloromethane	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Bromodichloromethane	10	SW8260B	<0.50 ug/L		0.50	1	10/17/17 13:17	10/17/17 13:17	JDW
Bromoform	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Bromomethane	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Carbon disulfide	10	SW8260B	<10.0 ug/L		10.0	1	10/17/17 13:17	10/17/17 13:17	JDW
Carbon tetrachloride	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Chlorobenzene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Chloroethane	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Chloroform	10	SW8260B	<0.50 ug/L		0.50	1	10/17/17 13:17	10/17/17 13:17	JDW
Chloromethane	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
cis-1,2-Dichloroethylene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
cis-1,3-Dichloropropene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Dibromochloromethane	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Dibromomethane	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Dichlorodifluoromethane	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Di-isopropyl ether (DIPE)	10	SW8260B	<5.00 ug/L		5.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Ethylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-10 MW-15 **Laboratory Sample ID:** 17J0495-10

Grab Date/Time: 10/13/2017 15:45

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Iodomethane	10	SW8260B	<10.0 ug/L		10.0	1	10/17/17 13:17	10/17/17 13:17	JDW
Isopropylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
m+p-Xylenes	10	SW8260B	<2.00 ug/L		2.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Methylene chloride	10	SW8260B	<4.00 ug/L		4.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Methyl-t-butyl ether (MTBE)	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Naphthalene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
n-Butylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
n-Propylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
o-Xylene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
sec-Butylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Styrene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
tert-Butylbenzene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Tetrachloroethylene (PCE)	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Toluene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
trans-1,2-Dichloroethylene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
trans-1,3-Dichloropropene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Trichloroethylene	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Trichlorofluoromethane	10	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Vinyl acetate	10	SW8260B	<10.0 ug/L		10.0	1	10/17/17 13:17	10/17/17 13:17	JDW
Vinyl chloride	10	SW8260B	<0.50 ug/L		0.50	1	10/17/17 13:17	10/17/17 13:17	JDW
Xylenes, Total	10	SW8260B	<3.00 ug/L		3.00	1	10/17/17 13:17	10/17/17 13:17	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*10*	*SW8260B*	*105 %*		*70-120*		*10/17/17 13:17*	*10/17/17 13:17*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*10*	*SW8260B*	*94.8 %*		*75-120*		*10/17/17 13:17*	*10/17/17 13:17*	*JDW*

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-10 MW-15 **Laboratory Sample ID:** 17J0495-10

Grab Date/Time: 10/13/2017 15:45

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*10*	*SW8260B*	*100 %*		*80-119*		*10/17/17 13:17*	*10/17/17 13:17*	*JDW*
Surr: Toluene-d8 (Surr)	*10*	*SW8260B*	*102 %*		*85-120*		*10/17/17 13:17*	*10/17/17 13:17*	*JDW*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	10	SW8011	<0.010 ug/L		0.010	1	10/17/17 15:14	10/20/17 02:46	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-11 MW-9 **Laboratory Sample ID:** 17J0495-11

Grab Date/Time: 10/13/2017 14:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	11	SW8015C	<0.10 mg/L		0.10	1	10/17/17 12:13	10/17/17 12:13	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*11*	*SW8015C*	*97.0 %*		*80-120*		*10/17/17 12:13*	*10/17/17 12:13*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	11	SW8260B	<0.40 ug/L		0.40	1	10/17/17 13:41	10/17/17 13:41	JDW
1,1,1-Trichloroethane	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,1,2,2-Tetrachloroethane	11	SW8260B	<0.40 ug/L		0.40	1	10/17/17 13:41	10/17/17 13:41	JDW
1,1,2-Trichloroethane	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,1-Dichloroethane	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,1-Dichloroethylene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,1-Dichloropropene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,2,3-Trichlorobenzene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,2,3-Trichloropropane	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,2,4-Trichlorobenzene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,2,4-Trimethylbenzene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,2-Dibromo-3-chloropropane (DBCP)	11	SW8260B	<4.00 ug/L		4.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,2-Dibromoethane (EDB)	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,2-Dichlorobenzene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,2-Dichloroethane	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,2-Dichloropropane	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,3,5-Trimethylbenzene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,3-Dichlorobenzene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,3-Dichloropropane	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
1,4-Dichlorobenzene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
2,2-Dichloropropane	11	SW8260B	<2.00 ug/L		2.00	1	10/17/17 13:41	10/17/17 13:41	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-11 MW-9 **Laboratory Sample ID:** 17J0495-11

Grab Date/Time: 10/13/2017 14:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	11	SW8260B	<10.0 ug/L		10.0	1	10/17/17 13:41	10/17/17 13:41	JDW
2-Chlorotoluene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
2-Hexanone (MBK)	11	SW8260B	<5.00 ug/L		5.00	1	10/17/17 13:41	10/17/17 13:41	JDW
4-Chlorotoluene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
4-Isopropyltoluene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
4-Methyl-2-pentanone (MIBK)	11	SW8260B	<5.00 ug/L		5.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Acetone	11	SW8260B	<10.0 ug/L		10.0	1	10/17/17 13:41	10/17/17 13:41	JDW
Benzene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Bromobenzene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Bromochloromethane	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Bromodichloromethane	11	SW8260B	<0.50 ug/L		0.50	1	10/17/17 13:41	10/17/17 13:41	JDW
Bromoform	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Bromomethane	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Carbon disulfide	11	SW8260B	<10.0 ug/L		10.0	1	10/17/17 13:41	10/17/17 13:41	JDW
Carbon tetrachloride	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Chlorobenzene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Chloroethane	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Chloroform	11	SW8260B	<0.50 ug/L		0.50	1	10/17/17 13:41	10/17/17 13:41	JDW
Chloromethane	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
cis-1,2-Dichloroethylene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
cis-1,3-Dichloropropene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Dibromochloromethane	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Dibromomethane	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Dichlorodifluoromethane	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Di-isopropyl ether (DIPE)	11	SW8260B	<5.00 ug/L		5.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Ethylbenzene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-11 MW-9 **Laboratory Sample ID:** 17J0495-11

Grab Date/Time: 10/13/2017 14:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Iodomethane	11	SW8260B	<10.0 ug/L		10.0	1	10/17/17 13:41	10/17/17 13:41	JDW
Isopropylbenzene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
m+p-Xylenes	11	SW8260B	<2.00 ug/L		2.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Methylene chloride	11	SW8260B	<4.00 ug/L		4.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Methyl-t-butyl ether (MTBE)	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Naphthalene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
n-Butylbenzene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
n-Propylbenzene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
o-Xylene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
sec-Butylbenzene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Styrene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
tert-Butylbenzene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Tetrachloroethylene (PCE)	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Toluene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
trans-1,2-Dichloroethylene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
trans-1,3-Dichloropropene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Trichloroethylene	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Trichlorofluoromethane	11	SW8260B	<1.00 ug/L		1.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Vinyl acetate	11	SW8260B	<10.0 ug/L		10.0	1	10/17/17 13:41	10/17/17 13:41	JDW
Vinyl chloride	11	SW8260B	<0.50 ug/L		0.50	1	10/17/17 13:41	10/17/17 13:41	JDW
Xylenes, Total	11	SW8260B	<3.00 ug/L		3.00	1	10/17/17 13:41	10/17/17 13:41	JDW
Surr: 1,2-Dichloroethane-d4 (Surr)	*11*	*SW8260B*	*101 %*		*70-120*		*10/17/17 13:41*	*10/17/17 13:41*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*11*	*SW8260B*	*95.9 %*		*75-120*		*10/17/17 13:41*	*10/17/17 13:41*	*JDW*

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-11 MW-9 **Laboratory Sample ID:** 17J0495-11

Grab Date/Time: 10/13/2017 14:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*11*	*SW8260B*	*97.9 %*		*80-119*		*10/17/17 13:41*	*10/17/17 13:41*	*JDW*
Surr: Toluene-d8 (Surr)	*11*	*SW8260B*	*102 %*		*85-120*		*10/17/17 13:41*	*10/17/17 13:41*	*JDW*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	11	SW8011	<0.010 ug/L		0.010	1	10/17/17 15:14	10/20/17 03:06	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-12 MW-3 **Laboratory Sample ID:** 17J0495-12

Grab Date/Time: 10/13/2017 16:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	12	SW8015C	**113 mg/L**		1.00	1	10/17/17 18:32	10/17/17 18:32	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*12*	*SW8015C*	*104 %*		*80-120*		*10/17/17 18:32*	*10/17/17 18:32*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	12	SW8260B	<2.00 ug/L		2.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,1,1-Trichloroethane	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,1,2,2-Tetrachloroethane	12	SW8260B	<2.00 ug/L		2.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,1,2-Trichloroethane	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,1-Dichloroethane	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,1-Dichloroethylene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,1-Dichloropropene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,2,3-Trichlorobenzene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,2,3-Trichloropropane	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,2,4-Trichlorobenzene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,2,4-Trimethylbenzene	12RE1	SW8260B	**2690 ug/L**		100	100	10/17/17 13:20	10/17/17 13:20	KCS
1,2-Dibromo-3-chloropropane (DBCP)	12	SW8260B	<20.0 ug/L		20.0	5	10/17/17 16:24	10/17/17 16:24	JDW
1,2-Dibromoethane (EDB)	12	SW8260B	**541 ug/L**		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,2-Dichlorobenzene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,2-Dichloroethane	12	SW8260B	**145 ug/L**		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,2-Dichloropropane	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,3,5-Trimethylbenzene	12	SW8260B	**670 ug/L**		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,3-Dichlorobenzene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,3-Dichloropropane	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
1,4-Dichlorobenzene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
2,2-Dichloropropane	12	SW8260B	<10.0 ug/L		10.0	5	10/17/17 16:24	10/17/17 16:24	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-12 MW-3 **Laboratory Sample ID:** 17J0495-12

Grab Date/Time: 10/13/2017 16:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	12	SW8260B	**635 ug/L**		50.0	5	10/17/17 16:24	10/17/17 16:24	JDW
2-Chlorotoluene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
2-Hexanone (MBK)	12	SW8260B	**106 ug/L**		25.0	5	10/17/17 16:24	10/17/17 16:24	JDW
4-Chlorotoluene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
4-Isopropyltoluene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
4-Methyl-2-pentanone (MIBK)	12	SW8260B	**60.8 ug/L**		25.0	5	10/17/17 16:24	10/17/17 16:24	JDW
Acetone	12	SW8260B	<50.0 ug/L		50.0	5	10/17/17 16:24	10/17/17 16:24	JDW
Benzene	12RE1	SW8260B	**21100 ug/L**		100	100	10/17/17 13:20	10/17/17 13:20	KCS
Bromobenzene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Bromochloromethane	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Bromodichloromethane	12	SW8260B	<2.50 ug/L		2.50	5	10/17/17 16:24	10/17/17 16:24	JDW
Bromoform	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Bromomethane	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Carbon disulfide	12	SW8260B	<50.0 ug/L		50.0	5	10/17/17 16:24	10/17/17 16:24	JDW
Carbon tetrachloride	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Chlorobenzene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Chloroethane	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Chloroform	12	SW8260B	<2.50 ug/L		2.50	5	10/17/17 16:24	10/17/17 16:24	JDW
Chloromethane	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
cis-1,2-Dichloroethylene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
cis-1,3-Dichloropropene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Dibromochloromethane	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Dibromomethane	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Dichlorodifluoromethane	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Di-isopropyl ether (DIPE)	12RE1	SW8260B	**2560 ug/L**		500	100	10/17/17 13:20	10/17/17 13:20	KCS
Ethylbenzene	12RE1	SW8260B	**3570 ug/L**		100	100	10/17/17 13:20	10/17/17 13:20	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-12 MW-3 **Laboratory Sample ID:** 17J0495-12

Grab Date/Time: 10/13/2017 16:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Iodomethane	12	SW8260B	<50.0 ug/L		50.0	5	10/17/17 16:24	10/17/17 16:24	JDW
Isopropylbenzene	12	SW8260B	**71.1 ug/L**		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
m+p-Xylenes	12RE1	SW8260B	**16100 ug/L**		200	100	10/17/17 13:20	10/17/17 13:20	KCS
Methylene chloride	12	SW8260B	<20.0 ug/L		20.0	5	10/17/17 16:24	10/17/17 16:24	JDW
Methyl-t-butyl ether (MTBE)	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Naphthalene	12	SW8260B	**529 ug/L**		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
n-Butylbenzene	12	SW8260B	**21.1 ug/L**		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
n-Propylbenzene	12	SW8260B	**265 ug/L**		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
o-Xylene	12RE1	SW8260B	**7390 ug/L**		100	100	10/17/17 13:20	10/17/17 13:20	KCS
sec-Butylbenzene	12	SW8260B	**11.5 ug/L**		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Styrene	12	SW8260B	**264 ug/L**		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
tert-Butylbenzene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Tetrachloroethylene (PCE)	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Toluene	12RE2	SW8260B	**39500 ug/L**		1000	1000	10/17/17 13:44	10/17/17 13:44	KCS
trans-1,2-Dichloroethylene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
trans-1,3-Dichloropropene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Trichloroethylene	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Trichlorofluoromethane	12	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:24	10/17/17 16:24	JDW
Vinyl acetate	12	SW8260B	<50.0 ug/L		50.0	5	10/17/17 16:24	10/17/17 16:24	JDW
Vinyl chloride	12	SW8260B	<2.50 ug/L		2.50	5	10/17/17 16:24	10/17/17 16:24	JDW
Xylenes, Total	12RE1	SW8260B	**23500 ug/L**		300	100	10/17/17 13:20	10/17/17 13:20	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*12*	*SW8260B*	*90.6 %*		*70-120*		*10/17/17 16:24*	*10/17/17 16:24*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*12*	*SW8260B*	*103 %*		*75-120*		*10/17/17 16:24*	*10/17/17 16:24*	*JDW*

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-12 MW-3 **Laboratory Sample ID:** 17J0495-12

Grab Date/Time: 10/13/2017 16:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*12*	*SW8260B*	*89.6 %*		*80-119*		*10/17/17 16:24*	*10/17/17 16:24*	*JDW*
Surr: Toluene-d8 (Surr)	*12*	*SW8260B*	*97.5 %*		*85-120*		*10/17/17 16:24*	*10/17/17 16:24*	*JDW*
Surr: 1,2-Dichloroethane-d4 (Surr)	*12RE1*	*SW8260B*	*96.9 %*		*70-120*		*10/17/17 13:20*	*10/17/17 13:20*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*12RE1*	*SW8260B*	*98.4 %*		*75-120*		*10/17/17 13:20*	*10/17/17 13:20*	*KCS*
Surr: Dibromofluoromethane (Surr)	*12RE1*	*SW8260B*	*95.6 %*		*80-119*		*10/17/17 13:20*	*10/17/17 13:20*	*KCS*
Surr: Toluene-d8 (Surr)	*12RE1*	*SW8260B*	*97.2 %*		*85-120*		*10/17/17 13:20*	*10/17/17 13:20*	*KCS*
Surr: 1,2-Dichloroethane-d4 (Surr)	*12RE2*	*SW8260B*	*94.1 %*		*70-120*		*10/17/17 13:44*	*10/17/17 13:44*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*12RE2*	*SW8260B*	*94.2 %*		*75-120*		*10/17/17 13:44*	*10/17/17 13:44*	*KCS*
Surr: Dibromofluoromethane (Surr)	*12RE2*	*SW8260B*	*97.7 %*		*80-119*		*10/17/17 13:44*	*10/17/17 13:44*	*KCS*
Surr: Toluene-d8 (Surr)	*12RE2*	*SW8260B*	*96.9 %*		*85-120*		*10/17/17 13:44*	*10/17/17 13:44*	*KCS*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	12RE1	SW8011	**448 ug/L**		10.2	1000	10/17/17 15:14	10/20/17 09:58	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-13 MW-4 **Laboratory Sample ID:** 17J0495-13

Grab Date/Time: 10/13/2017 14:25

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	13	SW8015C	**53.7 mg/L**		1.00	1	10/17/17 18:55	10/17/17 18:55	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*13*	*SW8015C*	*108 %*		*80-120*		*10/17/17 18:55*	*10/17/17 18:55*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	13	SW8260B	<2.00 ug/L		2.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,1,1-Trichloroethane	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,1,2,2-Tetrachloroethane	13	SW8260B	<2.00 ug/L		2.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,1,2-Trichloroethane	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,1-Dichloroethane	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,1-Dichloroethylene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,1-Dichloropropene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,2,3-Trichlorobenzene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,2,3-Trichloropropane	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,2,4-Trichlorobenzene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,2,4-Trimethylbenzene	13	SW8260B	**1930 ug/L**		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,2-Dibromo-3-chloropropane (DBCP)	13	SW8260B	<20.0 ug/L		20.0	5	10/17/17 14:27	10/17/17 14:27	JDW
1,2-Dibromoethane (EDB)	13	SW8260B	**222 ug/L**		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,2-Dichlorobenzene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,2-Dichloroethane	13	SW8260B	**146 ug/L**		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,2-Dichloropropane	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,3,5-Trimethylbenzene	13	SW8260B	**453 ug/L**		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,3-Dichlorobenzene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,3-Dichloropropane	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
1,4-Dichlorobenzene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
2,2-Dichloropropane	13	SW8260B	<10.0 ug/L		10.0	5	10/17/17 14:27	10/17/17 14:27	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-13 MW-4 **Laboratory Sample ID:** 17J0495-13

Grab Date/Time: 10/13/2017 14:25

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	13	SW8260B	<50.0 ug/L		50.0	5	10/17/17 14:27	10/17/17 14:27	JDW
2-Chlorotoluene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
2-Hexanone (MBK)	13	SW8260B	**168 ug/L**		25.0	5	10/17/17 14:27	10/17/17 14:27	JDW
4-Chlorotoluene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
4-Isopropyltoluene	13	SW8260B	**6.67 ug/L**		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
4-Methyl-2-pentanone (MIBK)	13	SW8260B	**61.3 ug/L**		25.0	5	10/17/17 14:27	10/17/17 14:27	JDW
Acetone	13	SW8260B	<50.0 ug/L		50.0	5	10/17/17 14:27	10/17/17 14:27	JDW
Benzene	13RE1	SW8260B	**5910 ug/L**		50.0	50	10/17/17 11:22	10/17/17 11:22	KCS
Bromobenzene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Bromochloromethane	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Bromodichloromethane	13	SW8260B	<2.50 ug/L		2.50	5	10/17/17 14:27	10/17/17 14:27	JDW
Bromoform	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Bromomethane	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Carbon disulfide	13	SW8260B	<50.0 ug/L		50.0	5	10/17/17 14:27	10/17/17 14:27	JDW
Carbon tetrachloride	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Chlorobenzene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Chloroethane	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Chloroform	13	SW8260B	<2.50 ug/L		2.50	5	10/17/17 14:27	10/17/17 14:27	JDW
Chloromethane	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
cis-1,2-Dichloroethylene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
cis-1,3-Dichloropropene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Dibromochloromethane	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Dibromomethane	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Dichlorodifluoromethane	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Di-isopropyl ether (DIPE)	13	SW8260B	**480 ug/L**		25.0	5	10/17/17 14:27	10/17/17 14:27	JDW
Ethylbenzene	13RE1	SW8260B	**2340 ug/L**		50.0	50	10/17/17 11:22	10/17/17 11:22	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-13 MW-4 **Laboratory Sample ID:** 17J0495-13

Grab Date/Time: 10/13/2017 14:25

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Iodomethane	13	SW8260B	<50.0 ug/L		50.0	5	10/17/17 14:27	10/17/17 14:27	JDW
Isopropylbenzene	13	SW8260B	**81.8 ug/L**		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
m+p-Xylenes	13RE1	SW8260B	**9060 ug/L**		100	50	10/17/17 11:22	10/17/17 11:22	KCS
Methylene chloride	13	SW8260B	<20.0 ug/L		20.0	5	10/17/17 14:27	10/17/17 14:27	JDW
Methyl-t-butyl ether (MTBE)	13	SW8260B	**6.86 ug/L**		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Naphthalene	13	SW8260B	**728 ug/L**		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
n-Butylbenzene	13	SW8260B	**21.4 ug/L**		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
n-Propylbenzene	13	SW8260B	**221 ug/L**		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
o-Xylene	13RE1	SW8260B	**4080 ug/L**		50.0	50	10/17/17 11:22	10/17/17 11:22	KCS
sec-Butylbenzene	13	SW8260B	**10.4 ug/L**		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Styrene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
tert-Butylbenzene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Tetrachloroethylene (PCE)	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Toluene	13RE1	SW8260B	**17200 ug/L**		50.0	50	10/17/17 11:22	10/17/17 11:22	KCS
trans-1,2-Dichloroethylene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
trans-1,3-Dichloropropene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Trichloroethylene	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Trichlorofluoromethane	13	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:27	10/17/17 14:27	JDW
Vinyl acetate	13	SW8260B	<50.0 ug/L		50.0	5	10/17/17 14:27	10/17/17 14:27	JDW
Vinyl chloride	13	SW8260B	<2.50 ug/L		2.50	5	10/17/17 14:27	10/17/17 14:27	JDW
Xylenes, Total	13RE1	SW8260B	**13100 ug/L**		150	50	10/17/17 11:22	10/17/17 11:22	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*13*	*SW8260B*	*99.3 %*		*70-120*		*10/17/17 14:27*	*10/17/17 14:27*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*13*	*SW8260B*	*102 %*		*75-120*		*10/17/17 14:27*	*10/17/17 14:27*	*JDW*

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-13 MW-4 **Laboratory Sample ID:** 17J0495-13

Grab Date/Time: 10/13/2017 14:25

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*13*	*SW8260B*	*99.9 %*		*80-119*		*10/17/17 14:27*	*10/17/17 14:27*	*JDW*
Surr: Toluene-d8 (Surr)	*13*	*SW8260B*	*99.8 %*		*85-120*		*10/17/17 14:27*	*10/17/17 14:27*	*JDW*
Surr: 1,2-Dichloroethane-d4 (Surr)	*13RE1*	*SW8260B*	*94.6 %*		*70-120*		*10/17/17 11:22*	*10/17/17 11:22*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*13RE1*	*SW8260B*	*96.4 %*		*75-120*		*10/17/17 11:22*	*10/17/17 11:22*	*KCS*
Surr: Dibromofluoromethane (Surr)	*13RE1*	*SW8260B*	*96.7 %*		*80-119*		*10/17/17 11:22*	*10/17/17 11:22*	*KCS*
Surr: Toluene-d8 (Surr)	*13RE1*	*SW8260B*	*97.1 %*		*85-120*		*10/17/17 11:22*	*10/17/17 11:22*	*KCS*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	13RE2	SW8011	**182 ug/L**		9.92	1000	10/17/17 15:14	10/20/17 12:38	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-14 MW-11 **Laboratory Sample ID:** 17J0495-14

Grab Date/Time: 10/13/2017 15:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	14	SW8015C	**49.5 mg/L**		1.00	1	10/17/17 17:24	10/17/17 17:24	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*14*	*SW8015C*	*102 %*		*80-120*		*10/17/17 17:24*	*10/17/17 17:24*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	14	SW8260B	<2.00 ug/L		2.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,1,1-Trichloroethane	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,1,2,2-Tetrachloroethane	14	SW8260B	<2.00 ug/L		2.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,1,2-Trichloroethane	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,1-Dichloroethane	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,1-Dichloroethylene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,1-Dichloropropene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,2,3-Trichlorobenzene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,2,3-Trichloropropane	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,2,4-Trichlorobenzene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,2,4-Trimethylbenzene	14	SW8260B	**1510 ug/L**		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,2-Dibromo-3-chloropropane (DBCP)	14	SW8260B	<20.0 ug/L		20.0	5	10/17/17 14:51	10/17/17 14:51	JDW
1,2-Dibromoethane (EDB)	14	SW8260B	**69.0 ug/L**		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,2-Dichlorobenzene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,2-Dichloroethane	14	SW8260B	**530 ug/L**		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,2-Dichloropropane	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,3,5-Trimethylbenzene	14	SW8260B	**542 ug/L**		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,3-Dichlorobenzene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,3-Dichloropropane	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
1,4-Dichlorobenzene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
2,2-Dichloropropane	14	SW8260B	<10.0 ug/L		10.0	5	10/17/17 14:51	10/17/17 14:51	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-14 MW-11 **Laboratory Sample ID:** 17J0495-14

Grab Date/Time: 10/13/2017 15:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	14	SW8260B	<50.0 ug/L		50.0	5	10/17/17 14:51	10/17/17 14:51	JDW
2-Chlorotoluene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
2-Hexanone (MBK)	14	SW8260B	**28.3 ug/L**		25.0	5	10/17/17 14:51	10/17/17 14:51	JDW
4-Chlorotoluene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
4-Isopropyltoluene	14	SW8260B	**7.16 ug/L**		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
4-Methyl-2-pentanone (MIBK)	14	SW8260B	<25.0 ug/L		25.0	5	10/17/17 14:51	10/17/17 14:51	JDW
Acetone	14	SW8260B	<50.0 ug/L		50.0	5	10/17/17 14:51	10/17/17 14:51	JDW
Benzene	14RE1	SW8260B	**6240 ug/L**		50.0	50	10/17/17 11:45	10/17/17 11:45	KCS
Bromobenzene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Bromochloromethane	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Bromodichloromethane	14	SW8260B	<2.50 ug/L		2.50	5	10/17/17 14:51	10/17/17 14:51	JDW
Bromoform	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Bromomethane	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Carbon disulfide	14	SW8260B	<50.0 ug/L		50.0	5	10/17/17 14:51	10/17/17 14:51	JDW
Carbon tetrachloride	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Chlorobenzene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Chloroethane	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Chloroform	14	SW8260B	<2.50 ug/L		2.50	5	10/17/17 14:51	10/17/17 14:51	JDW
Chloromethane	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
cis-1,2-Dichloroethylene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
cis-1,3-Dichloropropene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Dibromochloromethane	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Dibromomethane	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Dichlorodifluoromethane	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Di-isopropyl ether (DIPE)	14RE1	SW8260B	**4720 ug/L**		250	50	10/17/17 11:45	10/17/17 11:45	KCS
Ethylbenzene	14	SW8260B	**1510 ug/L**		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-14 MW-11 **Laboratory Sample ID:** 17J0495-14

Grab Date/Time: 10/13/2017 15:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Iodomethane	14	SW8260B	<50.0 ug/L		50.0	5	10/17/17 14:51	10/17/17 14:51	JDW
Isopropylbenzene	14	SW8260B	**37.7 ug/L**		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
m+p-Xylenes	14RE1	SW8260B	**7930 ug/L**		100	50	10/17/17 11:45	10/17/17 11:45	KCS
Methylene chloride	14	SW8260B	<20.0 ug/L		20.0	5	10/17/17 14:51	10/17/17 14:51	JDW
Methyl-t-butyl ether (MTBE)	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Naphthalene	14	SW8260B	**356 ug/L**		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
n-Butylbenzene	14	SW8260B	**9.34 ug/L**		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
n-Propylbenzene	14	SW8260B	**123 ug/L**		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
o-Xylene	14RE1	SW8260B	**4360 ug/L**		50.0	50	10/17/17 11:45	10/17/17 11:45	KCS
sec-Butylbenzene	14	SW8260B	**6.97 ug/L**		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Styrene	14	SW8260B	**28.0 ug/L**		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
tert-Butylbenzene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Tetrachloroethylene (PCE)	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Toluene	14RE1	SW8260B	**15900 ug/L**		50.0	50	10/17/17 11:45	10/17/17 11:45	KCS
trans-1,2-Dichloroethylene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
trans-1,3-Dichloropropene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Trichloroethylene	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Trichlorofluoromethane	14	SW8260B	<5.00 ug/L		5.00	5	10/17/17 14:51	10/17/17 14:51	JDW
Vinyl acetate	14	SW8260B	<50.0 ug/L		50.0	5	10/17/17 14:51	10/17/17 14:51	JDW
Vinyl chloride	14	SW8260B	<2.50 ug/L		2.50	5	10/17/17 14:51	10/17/17 14:51	JDW
Xylenes, Total	14RE1	SW8260B	**12300 ug/L**		150	50	10/17/17 11:45	10/17/17 11:45	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*14*	*SW8260B*	*98.7 %*		*70-120*		*10/17/17 14:51*	*10/17/17 14:51*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*14*	*SW8260B*	*100 %*		*75-120*		*10/17/17 14:51*	*10/17/17 14:51*	*JDW*

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-14 MW-11 **Laboratory Sample ID:** 17J0495-14

Grab Date/Time: 10/13/2017 15:00

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*14*	*SW8260B*	*92.8 %*		*80-119*		*10/17/17 14:51*	*10/17/17 14:51*	*JDW*
Surr: Toluene-d8 (Surr)	*14*	*SW8260B*	*101 %*		*85-120*		*10/17/17 14:51*	*10/17/17 14:51*	*JDW*
Surr: 1,2-Dichloroethane-d4 (Surr)	*14RE1*	*SW8260B*	*97.4 %*		*70-120*		*10/17/17 11:45*	*10/17/17 11:45*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*14RE1*	*SW8260B*	*98.2 %*		*75-120*		*10/17/17 11:45*	*10/17/17 11:45*	*KCS*
Surr: Dibromofluoromethane (Surr)	*14RE1*	*SW8260B*	*94.5 %*		*80-119*		*10/17/17 11:45*	*10/17/17 11:45*	*KCS*
Surr: Toluene-d8 (Surr)	*14RE1*	*SW8260B*	*97.2 %*		*85-120*		*10/17/17 11:45*	*10/17/17 11:45*	*KCS*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	14RE1	SW8011	**30.5 ug/L**		0.988	100	10/17/17 15:14	10/20/17 10:36	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-15 MW-10 **Laboratory Sample ID:** 17J0495-15

Grab Date/Time: 10/13/2017 15:30

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	15	SW8015C	**43.4 mg/L**		1.00	1	10/17/17 17:47	10/17/17 17:47	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*15*	*SW8015C*	*102 %*		*80-120*		*10/17/17 17:47*	*10/17/17 17:47*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	15	SW8260B	<2.00 ug/L		2.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,1,1-Trichloroethane	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,1,2,2-Tetrachloroethane	15	SW8260B	<2.00 ug/L		2.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,1,2-Trichloroethane	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,1-Dichloroethane	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,1-Dichloroethylene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,1-Dichloropropene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,2,3-Trichlorobenzene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,2,3-Trichloropropane	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,2,4-Trichlorobenzene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,2,4-Trimethylbenzene	15	SW8260B	**1570 ug/L**		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,2-Dibromo-3-chloropropane (DBCP)	15	SW8260B	<20.0 ug/L		20.0	5	10/17/17 15:14	10/17/17 15:14	JDW
1,2-Dibromoethane (EDB)	15	SW8260B	**23.5 ug/L**		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,2-Dichlorobenzene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,2-Dichloroethane	15	SW8260B	**15.4 ug/L**		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,2-Dichloropropane	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,3,5-Trimethylbenzene	15	SW8260B	**508 ug/L**		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,3-Dichlorobenzene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,3-Dichloropropane	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
1,4-Dichlorobenzene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
2,2-Dichloropropane	15	SW8260B	<10.0 ug/L		10.0	5	10/17/17 15:14	10/17/17 15:14	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-15 MW-10 **Laboratory Sample ID:** 17J0495-15

Grab Date/Time: 10/13/2017 15:30

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	15	SW8260B	**640 ug/L**		50.0	5	10/17/17 15:14	10/17/17 15:14	JDW
2-Chlorotoluene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
2-Hexanone (MBK)	15	SW8260B	**95.4 ug/L**		25.0	5	10/17/17 15:14	10/17/17 15:14	JDW
4-Chlorotoluene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
4-Isopropyltoluene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
4-Methyl-2-pentanone (MIBK)	15	SW8260B	**82.5 ug/L**		25.0	5	10/17/17 15:14	10/17/17 15:14	JDW
Acetone	15	SW8260B	<50.0 ug/L		50.0	5	10/17/17 15:14	10/17/17 15:14	JDW
Benzene	15RE1	SW8260B	**3180 ug/L**		50.0	50	10/17/17 12:09	10/17/17 12:09	KCS
Bromobenzene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Bromochloromethane	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Bromodichloromethane	15	SW8260B	<2.50 ug/L		2.50	5	10/17/17 15:14	10/17/17 15:14	JDW
Bromoform	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Bromomethane	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Carbon disulfide	15	SW8260B	<50.0 ug/L		50.0	5	10/17/17 15:14	10/17/17 15:14	JDW
Carbon tetrachloride	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Chlorobenzene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Chloroethane	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Chloroform	15	SW8260B	<2.50 ug/L		2.50	5	10/17/17 15:14	10/17/17 15:14	JDW
Chloromethane	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
cis-1,2-Dichloroethylene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
cis-1,3-Dichloropropene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Dibromochloromethane	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Dibromomethane	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Dichlorodifluoromethane	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Di-isopropyl ether (DIPE)	15	SW8260B	**141 ug/L**		25.0	5	10/17/17 15:14	10/17/17 15:14	JDW
Ethylbenzene	15RE1	SW8260B	**2310 ug/L**		50.0	50	10/17/17 12:09	10/17/17 12:09	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-15 MW-10 **Laboratory Sample ID:** 17J0495-15

Grab Date/Time: 10/13/2017 15:30

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Iodomethane	15	SW8260B	<50.0 ug/L		50.0	5	10/17/17 15:14	10/17/17 15:14	JDW
Isopropylbenzene	15	SW8260B	**52.5 ug/L**		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
m+p-Xylenes	15RE1	SW8260B	**10100 ug/L**		100	50	10/17/17 12:09	10/17/17 12:09	KCS
Methylene chloride	15	SW8260B	<20.0 ug/L		20.0	5	10/17/17 15:14	10/17/17 15:14	JDW
Methyl-t-butyl ether (MTBE)	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Naphthalene	15	SW8260B	**318 ug/L**		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
n-Butylbenzene	15	SW8260B	**13.4 ug/L**		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
n-Propylbenzene	15	SW8260B	**204 ug/L**		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
o-Xylene	15RE1	SW8260B	**4170 ug/L**		50.0	50	10/17/17 12:09	10/17/17 12:09	KCS
sec-Butylbenzene	15	SW8260B	**7.63 ug/L**		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Styrene	15	SW8260B	**60.5 ug/L**		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
tert-Butylbenzene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Tetrachloroethylene (PCE)	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Toluene	15RE1	SW8260B	**13800 ug/L**		50.0	50	10/17/17 12:09	10/17/17 12:09	KCS
trans-1,2-Dichloroethylene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
trans-1,3-Dichloropropene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Trichloroethylene	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Trichlorofluoromethane	15	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:14	10/17/17 15:14	JDW
Vinyl acetate	15	SW8260B	<50.0 ug/L		50.0	5	10/17/17 15:14	10/17/17 15:14	JDW
Vinyl chloride	15	SW8260B	<2.50 ug/L		2.50	5	10/17/17 15:14	10/17/17 15:14	JDW
Xylenes, Total	15RE1	SW8260B	**14300 ug/L**		150	50	10/17/17 12:09	10/17/17 12:09	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*15*	*SW8260B*	*96.3 %*		*70-120*		*10/17/17 15:14*	*10/17/17 15:14*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*15*	*SW8260B*	*100 %*		*75-120*		*10/17/17 15:14*	*10/17/17 15:14*	*JDW*

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-15 MW-10 **Laboratory Sample ID:** 17J0495-15

Grab Date/Time: 10/13/2017 15:30

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*15*	*SW8260B*	*94.6 %*		*80-119*		*10/17/17 15:14*	*10/17/17 15:14*	*JDW*
Surr: Toluene-d8 (Surr)	*15*	*SW8260B*	*101 %*		*85-120*		*10/17/17 15:14*	*10/17/17 15:14*	*JDW*
Surr: 1,2-Dichloroethane-d4 (Surr)	*15RE1*	*SW8260B*	*97.7 %*		*70-120*		*10/17/17 12:09*	*10/17/17 12:09*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*15RE1*	*SW8260B*	*97.7 %*		*75-120*		*10/17/17 12:09*	*10/17/17 12:09*	*KCS*
Surr: Dibromofluoromethane (Surr)	*15RE1*	*SW8260B*	*93.8 %*		*80-119*		*10/17/17 12:09*	*10/17/17 12:09*	*KCS*
Surr: Toluene-d8 (Surr)	*15RE1*	*SW8260B*	*97.4 %*		*85-120*		*10/17/17 12:09*	*10/17/17 12:09*	*KCS*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	15RE1	SW8011	**29.9 ug/L**		1.03	100	10/17/17 15:14	10/20/17 10:56	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-16 MW-13 **Laboratory Sample ID:** 17J0495-16

Grab Date/Time: 10/13/2017 14:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	16	SW8015C	**14.3 mg/L**		0.10	1	10/17/17 16:38	10/17/17 16:38	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*16*	*SW8015C*	*109 %*		*80-120*		*10/17/17 16:38*	*10/17/17 16:38*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	16	SW8260B	<0.40 ug/L		0.40	1	10/17/17 14:04	10/17/17 14:04	JDW
1,1,1-Trichloroethane	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
1,1,2,2-Tetrachloroethane	16	SW8260B	<0.40 ug/L		0.40	1	10/17/17 14:04	10/17/17 14:04	JDW
1,1,2-Trichloroethane	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
1,1-Dichloroethane	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
1,1-Dichloroethylene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
1,1-Dichloropropene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
1,2,3-Trichlorobenzene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
1,2,3-Trichloropropane	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
1,2,4-Trichlorobenzene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
1,2,4-Trimethylbenzene	16RE1	SW8260B	**1170 ug/L**		20.0	20	10/17/17 10:58	10/17/17 10:58	KCS
1,2-Dibromo-3-chloropropane (DBCP)	16	SW8260B	<4.00 ug/L		4.00	1	10/17/17 14:04	10/17/17 14:04	JDW
1,2-Dibromoethane (EDB)	16	SW8260B	**1.94 ug/L**		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
1,2-Dichlorobenzene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
1,2-Dichloroethane	16	SW8260B	**17.1 ug/L**		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
1,2-Dichloropropane	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
1,3,5-Trimethylbenzene	16	SW8260B	**353 ug/L**		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
1,3-Dichlorobenzene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
1,3-Dichloropropane	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
1,4-Dichlorobenzene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
2,2-Dichloropropane	16	SW8260B	<2.00 ug/L		2.00	1	10/17/17 14:04	10/17/17 14:04	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-16 MW-13 **Laboratory Sample ID:** 17J0495-16

Grab Date/Time: 10/13/2017 14:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	16	SW8260B	<10.0 ug/L		10.0	1	10/17/17 14:04	10/17/17 14:04	JDW
2-Chlorotoluene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
2-Hexanone (MBK)	16	SW8260B	**36.5 ug/L**		5.00	1	10/17/17 14:04	10/17/17 14:04	JDW
4-Chlorotoluene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
4-Isopropyltoluene	16	SW8260B	**2.05 ug/L**		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
4-Methyl-2-pentanone (MIBK)	16	SW8260B	**54.6 ug/L**		5.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Acetone	16	SW8260B	<10.0 ug/L		10.0	1	10/17/17 14:04	10/17/17 14:04	JDW
Benzene	16	SW8260B	**255 ug/L**		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Bromobenzene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Bromochloromethane	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Bromodichloromethane	16	SW8260B	<0.50 ug/L		0.50	1	10/17/17 14:04	10/17/17 14:04	JDW
Bromoform	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Bromomethane	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Carbon disulfide	16	SW8260B	<10.0 ug/L		10.0	1	10/17/17 14:04	10/17/17 14:04	JDW
Carbon tetrachloride	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Chlorobenzene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Chloroethane	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Chloroform	16	SW8260B	<0.50 ug/L		0.50	1	10/17/17 14:04	10/17/17 14:04	JDW
Chloromethane	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
cis-1,2-Dichloroethylene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
cis-1,3-Dichloropropene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Dibromochloromethane	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Dibromomethane	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Dichlorodifluoromethane	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Di-isopropyl ether (DIPE)	16	SW8260B	**283 ug/L**		5.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Ethylbenzene	16RE1	SW8260B	**554 ug/L**		20.0	20	10/17/17 10:58	10/17/17 10:58	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-16 MW-13 **Laboratory Sample ID:** 17J0495-16

Grab Date/Time: 10/13/2017 14:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Iodomethane	16	SW8260B	<10.0 ug/L		10.0	1	10/17/17 14:04	10/17/17 14:04	JDW
Isopropylbenzene	16	SW8260B	**28.9 ug/L**		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
m+p-Xylenes	16RE1	SW8260B	**2750 ug/L**		40.0	20	10/17/17 10:58	10/17/17 10:58	KCS
Methylene chloride	16	SW8260B	<4.00 ug/L		4.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Methyl-t-butyl ether (MTBE)	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Naphthalene	16	SW8260B	**72.9 ug/L**		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
n-Butylbenzene	16	SW8260B	**11.1 ug/L**		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
n-Propylbenzene	16	SW8260B	**124 ug/L**		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
o-Xylene	16RE1	SW8260B	**877 ug/L**		20.0	20	10/17/17 10:58	10/17/17 10:58	KCS
sec-Butylbenzene	16	SW8260B	**5.61 ug/L**		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Styrene	16	SW8260B	**6.35 ug/L**		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
tert-Butylbenzene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Tetrachloroethylene (PCE)	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Toluene	16RE1	SW8260B	**1550 ug/L**		20.0	20	10/17/17 10:58	10/17/17 10:58	KCS
trans-1,2-Dichloroethylene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
trans-1,3-Dichloropropene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Trichloroethylene	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Trichlorofluoromethane	16	SW8260B	<1.00 ug/L		1.00	1	10/17/17 14:04	10/17/17 14:04	JDW
Vinyl acetate	16	SW8260B	<10.0 ug/L		10.0	1	10/17/17 14:04	10/17/17 14:04	JDW
Vinyl chloride	16	SW8260B	<0.50 ug/L		0.50	1	10/17/17 14:04	10/17/17 14:04	JDW
Xylenes, Total	16RE1	SW8260B	**3630 ug/L**		60.0	20	10/17/17 10:58	10/17/17 10:58	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*16*	*SW8260B*	*99.9 %*		*70-120*		*10/17/17 14:04*	*10/17/17 14:04*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*16*	*SW8260B*	*104 %*		*75-120*		*10/17/17 14:04*	*10/17/17 14:04*	*JDW*

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-16 MW-13 **Laboratory Sample ID:** 17J0495-16

Grab Date/Time: 10/13/2017 14:40

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*16*	*SW8260B*	*98.9 %*		*80-119*		*10/17/17 14:04*	*10/17/17 14:04*	*JDW*
Surr: Toluene-d8 (Surr)	*16*	*SW8260B*	*101 %*		*85-120*		*10/17/17 14:04*	*10/17/17 14:04*	*JDW*
Surr: 1,2-Dichloroethane-d4 (Surr)	*16RE1*	*SW8260B*	*98.5 %*		*70-120*		*10/17/17 10:58*	*10/17/17 10:58*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*16RE1*	*SW8260B*	*97.2 %*		*75-120*		*10/17/17 10:58*	*10/17/17 10:58*	*KCS*
Surr: Dibromofluoromethane (Surr)	*16RE1*	*SW8260B*	*98.2 %*		*80-119*		*10/17/17 10:58*	*10/17/17 10:58*	*KCS*
Surr: Toluene-d8 (Surr)	*16RE1*	*SW8260B*	*99.6 %*		*85-120*		*10/17/17 10:58*	*10/17/17 10:58*	*KCS*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	16RE1	SW8011	**2.11 ug/L**		0.050	5	10/17/17 15:14	10/20/17 11:15	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-17 MW-12 **Laboratory Sample ID:** 17J0495-17

Grab Date/Time: 10/13/2017 15:45

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	17	SW8015C	**145 mg/L**		1.00	1	10/17/17 17:01	10/17/17 17:01	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*17*	*SW8015C*	*126 %*	*S*	*80-120*		*10/17/17 17:01*	*10/17/17 17:01*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	17	SW8260B	<2.00 ug/L		2.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,1,1-Trichloroethane	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,1,2,2-Tetrachloroethane	17	SW8260B	<2.00 ug/L		2.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,1,2-Trichloroethane	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,1-Dichloroethane	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,1-Dichloroethylene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,1-Dichloropropene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,2,3-Trichlorobenzene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,2,3-Trichloropropane	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,2,4-Trichlorobenzene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,2,4-Trimethylbenzene	17RE1	SW8260B	**4510 ug/L**		100	100	10/17/17 12:33	10/17/17 12:33	KCS
1,2-Dibromo-3-chloropropane (DBCP)	17	SW8260B	<20.0 ug/L		20.0	5	10/17/17 15:38	10/17/17 15:38	JDW
1,2-Dibromoethane (EDB)	17	SW8260B	**38.1 ug/L**		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,2-Dichlorobenzene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,2-Dichloroethane	17	SW8260B	**7.68 ug/L**		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,2-Dichloropropane	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,3,5-Trimethylbenzene	17	SW8260B	**1280 ug/L**		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,3-Dichlorobenzene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,3-Dichloropropane	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
1,4-Dichlorobenzene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
2,2-Dichloropropane	17	SW8260B	<10.0 ug/L		10.0	5	10/17/17 15:38	10/17/17 15:38	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-17 MW-12 **Laboratory Sample ID:** 17J0495-17

Grab Date/Time: 10/13/2017 15:45

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	17	SW8260B	**195 ug/L**		50.0	5	10/17/17 15:38	10/17/17 15:38	JDW
2-Chlorotoluene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
2-Hexanone (MBK)	17	SW8260B	**47.5 ug/L**		25.0	5	10/17/17 15:38	10/17/17 15:38	JDW
4-Chlorotoluene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
4-Isopropyltoluene	17	SW8260B	**11.4 ug/L**		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
4-Methyl-2-pentanone (MIBK)	17	SW8260B	<25.0 ug/L		25.0	5	10/17/17 15:38	10/17/17 15:38	JDW
Acetone	17	SW8260B	<50.0 ug/L		50.0	5	10/17/17 15:38	10/17/17 15:38	JDW
Benzene	17RE1	SW8260B	**6210 ug/L**		100	100	10/17/17 12:33	10/17/17 12:33	KCS
Bromobenzene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Bromochloromethane	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Bromodichloromethane	17	SW8260B	<2.50 ug/L		2.50	5	10/17/17 15:38	10/17/17 15:38	JDW
Bromoform	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Bromomethane	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Carbon disulfide	17	SW8260B	<50.0 ug/L		50.0	5	10/17/17 15:38	10/17/17 15:38	JDW
Carbon tetrachloride	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Chlorobenzene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Chloroethane	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Chloroform	17	SW8260B	<2.50 ug/L		2.50	5	10/17/17 15:38	10/17/17 15:38	JDW
Chloromethane	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
cis-1,2-Dichloroethylene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
cis-1,3-Dichloropropene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Dibromochloromethane	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Dibromomethane	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Dichlorodifluoromethane	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Di-isopropyl ether (DIPE)	17	SW8260B	**69.9 ug/L**		25.0	5	10/17/17 15:38	10/17/17 15:38	JDW
Ethylbenzene	17RE1	SW8260B	**4440 ug/L**		100	100	10/17/17 12:33	10/17/17 12:33	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-17 MW-12 **Laboratory Sample ID:** 17J0495-17

Grab Date/Time: 10/13/2017 15:45

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Iodomethane	17	SW8260B	<50.0 ug/L		50.0	5	10/17/17 15:38	10/17/17 15:38	JDW
Isopropylbenzene	17	SW8260B	**130 ug/L**		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
m+p-Xylenes	17RE1	SW8260B	**19300 ug/L**		200	100	10/17/17 12:33	10/17/17 12:33	KCS
Methylene chloride	17	SW8260B	<20.0 ug/L		20.0	5	10/17/17 15:38	10/17/17 15:38	JDW
Methyl-t-butyl ether (MTBE)	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Naphthalene	17	SW8260B	**798 ug/L**		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
n-Butylbenzene	17	SW8260B	**89.1 ug/L**		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
n-Propylbenzene	17	SW8260B	**532 ug/L**		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
o-Xylene	17RE1	SW8260B	**8380 ug/L**		100	100	10/17/17 12:33	10/17/17 12:33	KCS
sec-Butylbenzene	17	SW8260B	**33.6 ug/L**		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Styrene	17	SW8260B	**401 ug/L**		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
tert-Butylbenzene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Tetrachloroethylene (PCE)	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Toluene	17RE1	SW8260B	**35600 ug/L**		100	100	10/17/17 12:33	10/17/17 12:33	KCS
trans-1,2-Dichloroethylene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
trans-1,3-Dichloropropene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Trichloroethylene	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Trichlorofluoromethane	17	SW8260B	<5.00 ug/L		5.00	5	10/17/17 15:38	10/17/17 15:38	JDW
Vinyl acetate	17	SW8260B	<50.0 ug/L		50.0	5	10/17/17 15:38	10/17/17 15:38	JDW
Vinyl chloride	17	SW8260B	<2.50 ug/L		2.50	5	10/17/17 15:38	10/17/17 15:38	JDW
Xylenes, Total	17RE1	SW8260B	**27700 ug/L**		300	100	10/17/17 12:33	10/17/17 12:33	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*17*	*SW8260B*	*97.2 %*		*70-120*		*10/17/17 15:38*	*10/17/17 15:38*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*17*	*SW8260B*	*107 %*		*75-120*		*10/17/17 15:38*	*10/17/17 15:38*	*JDW*

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-17 MW-12 **Laboratory Sample ID:** 17J0495-17

Grab Date/Time: 10/13/2017 15:45

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*17*	*SW8260B*	*94.6 %*		*80-119*		*10/17/17 15:38*	*10/17/17 15:38*	*JDW*
Surr: Toluene-d8 (Surr)	*17*	*SW8260B*	*101 %*		*85-120*		*10/17/17 15:38*	*10/17/17 15:38*	*JDW*
Surr: 1,2-Dichloroethane-d4 (Surr)	*17RE1*	*SW8260B*	*95.4 %*		*70-120*		*10/17/17 12:33*	*10/17/17 12:33*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*17RE1*	*SW8260B*	*98.4 %*		*75-120*		*10/17/17 12:33*	*10/17/17 12:33*	*KCS*
Surr: Dibromofluoromethane (Surr)	*17RE1*	*SW8260B*	*97.0 %*		*80-119*		*10/17/17 12:33*	*10/17/17 12:33*	*KCS*
Surr: Toluene-d8 (Surr)	*17RE1*	*SW8260B*	*99.7 %*		*85-120*		*10/17/17 12:33*	*10/17/17 12:33*	*KCS*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	17RE1	SW8011	**31.6 ug/L**		1.03	100	10/17/17 15:14	10/20/17 11:35	LBH

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-18 MW-14 **Laboratory Sample ID:** 17J0495-18

Grab Date/Time: 10/13/2017 15:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	18	SW8015C	**121 mg/L**		1.00	1	10/17/17 18:10	10/17/17 18:10	LAO
Surr: 2,5-Dibromotoluene (Surr FID)	*18*	*SW8015C*	*106 %*		*80-120*		*10/17/17 18:10*	*10/17/17 18:10*	*LAO*
Volatile Organic Compounds by GCMS									
1,1,1,2-Tetrachloroethane	18	SW8260B	<2.00 ug/L		2.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,1,1-Trichloroethane	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,1,2,2-Tetrachloroethane	18	SW8260B	<2.00 ug/L		2.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,1,2-Trichloroethane	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,1-Dichloroethane	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,1-Dichloroethylene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,1-Dichloropropene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,2,3-Trichlorobenzene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,2,3-Trichloropropane	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,2,4-Trichlorobenzene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,2,4-Trimethylbenzene	18RE1	SW8260B	**2670 ug/L**		200	200	10/17/17 12:57	10/17/17 12:57	KCS
1,2-Dibromo-3-chloropropane (DBCP)	18	SW8260B	<20.0 ug/L		20.0	5	10/17/17 16:01	10/17/17 16:01	JDW
1,2-Dibromoethane (EDB)	18	SW8260B	**401 ug/L**		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,2-Dichlorobenzene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,2-Dichloroethane	18	SW8260B	**54.1 ug/L**		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,2-Dichloropropane	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,3,5-Trimethylbenzene	18	SW8260B	**632 ug/L**		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,3-Dichlorobenzene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,3-Dichloropropane	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
1,4-Dichlorobenzene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
2,2-Dichloropropane	18	SW8260B	<10.0 ug/L		10.0	5	10/17/17 16:01	10/17/17 16:01	JDW

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-18 MW-14 **Laboratory Sample ID:** 17J0495-18

Grab Date/Time: 10/13/2017 15:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
2-Butanone (MEK)	18	SW8260B	**530 ug/L**		50.0	5	10/17/17 16:01	10/17/17 16:01	JDW
2-Chlorotoluene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
2-Hexanone (MBK)	18	SW8260B	**123 ug/L**		25.0	5	10/17/17 16:01	10/17/17 16:01	JDW
4-Chlorotoluene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
4-Isopropyltoluene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
4-Methyl-2-pentanone (MIBK)	18	SW8260B	**77.7 ug/L**		25.0	5	10/17/17 16:01	10/17/17 16:01	JDW
Acetone	18	SW8260B	<50.0 ug/L		50.0	5	10/17/17 16:01	10/17/17 16:01	JDW
Benzene	18RE1	SW8260B	**21500 ug/L**		200	200	10/17/17 12:57	10/17/17 12:57	KCS
Bromobenzene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Bromochloromethane	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Bromodichloromethane	18	SW8260B	<2.50 ug/L		2.50	5	10/17/17 16:01	10/17/17 16:01	JDW
Bromoform	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Bromomethane	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Carbon disulfide	18	SW8260B	<50.0 ug/L		50.0	5	10/17/17 16:01	10/17/17 16:01	JDW
Carbon tetrachloride	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Chlorobenzene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Chloroethane	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Chloroform	18	SW8260B	<2.50 ug/L		2.50	5	10/17/17 16:01	10/17/17 16:01	JDW
Chloromethane	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
cis-1,2-Dichloroethylene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
cis-1,3-Dichloropropene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Dibromochloromethane	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Dibromomethane	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Dichlorodifluoromethane	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Di-isopropyl ether (DIPE)	18	SW8260B	**942 ug/L**		25.0	5	10/17/17 16:01	10/17/17 16:01	JDW
Ethylbenzene	18RE1	SW8260B	**3800 ug/L**		200	200	10/17/17 12:57	10/17/17 12:57	KCS

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-18 MW-14 **Laboratory Sample ID:** 17J0495-18

Grab Date/Time: 10/13/2017 15:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Hexachlorobutadiene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Iodomethane	18	SW8260B	<50.0 ug/L		50.0	5	10/17/17 16:01	10/17/17 16:01	JDW
Isopropylbenzene	18	SW8260B	**73.4 ug/L**		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
m+p-Xylenes	18RE1	SW8260B	**15800 ug/L**		400	200	10/17/17 12:57	10/17/17 12:57	KCS
Methylene chloride	18	SW8260B	<20.0 ug/L		20.0	5	10/17/17 16:01	10/17/17 16:01	JDW
Methyl-t-butyl ether (MTBE)	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Naphthalene	18	SW8260B	**519 ug/L**		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
n-Butylbenzene	18	SW8260B	**19.4 ug/L**		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
n-Propylbenzene	18	SW8260B	**272 ug/L**		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
o-Xylene	18RE1	SW8260B	**6860 ug/L**		200	200	10/17/17 12:57	10/17/17 12:57	KCS
sec-Butylbenzene	18	SW8260B	**10.7 ug/L**		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Styrene	18	SW8260B	**303 ug/L**		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
tert-Butylbenzene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Tetrachloroethylene (PCE)	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Toluene	18RE1	SW8260B	**47000 ug/L**		200	200	10/17/17 12:57	10/17/17 12:57	KCS
trans-1,2-Dichloroethylene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
trans-1,3-Dichloropropene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Trichloroethylene	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Trichlorofluoromethane	18	SW8260B	<5.00 ug/L		5.00	5	10/17/17 16:01	10/17/17 16:01	JDW
Vinyl acetate	18	SW8260B	<50.0 ug/L		50.0	5	10/17/17 16:01	10/17/17 16:01	JDW
Vinyl chloride	18	SW8260B	<2.50 ug/L		2.50	5	10/17/17 16:01	10/17/17 16:01	JDW
Xylenes, Total	18RE1	SW8260B	**22700 ug/L**		600	200	10/17/17 12:57	10/17/17 12:57	KCS
Surr: 1,2-Dichloroethane-d4 (Surr)	*18*	*SW8260B*	*96.2 %*		*70-120*		*10/17/17 16:01*	*10/17/17 16:01*	*JDW*
Surr: 4-Bromofluorobenzene (Surr)	*18*	*SW8260B*	*103 %*		*75-120*		*10/17/17 16:01*	*10/17/17 16:01*	*JDW*

AIR WATER & SOIL LABORATORIES, INC.

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Laboratory Order ID: 17J0495

Analytical Results

Sample I.D. 101317001-18 MW-14 **Laboratory Sample ID:** 17J0495-18

Grab Date/Time: 10/13/2017 15:20

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GCMS									
Surr: Dibromofluoromethane (Surr)	*18*	*SW8260B*	*92.6 %*		*80-119*		*10/17/17 16:01*	*10/17/17 16:01*	*JDW*
Surr: Toluene-d8 (Surr)	*18*	*SW8260B*	*98.2 %*		*85-120*		*10/17/17 16:01*	*10/17/17 16:01*	*JDW*
Surr: 1,2-Dichloroethane-d4 (Surr)	*18RE1*	*SW8260B*	*103 %*		*70-120*		*10/17/17 12:57*	*10/17/17 12:57*	*KCS*
Surr: 4-Bromofluorobenzene (Surr)	*18RE1*	*SW8260B*	*96.8 %*		*75-120*		*10/17/17 12:57*	*10/17/17 12:57*	*KCS*
Surr: Dibromofluoromethane (Surr)	*18RE1*	*SW8260B*	*96.6 %*		*80-119*		*10/17/17 12:57*	*10/17/17 12:57*	*KCS*
Surr: Toluene-d8 (Surr)	*18RE1*	*SW8260B*	*97.5 %*		*85-120*		*10/17/17 12:57*	*10/17/17 12:57*	*KCS*
Micro-extractables by GC/ECD									
1,2-Dibromoethane (EDB)	18RE1	SW8011	**383 ug/L**		10.2	1000	10/17/17 15:14	10/20/17 11:54	LBH

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Hydrocarbons by GC		**Preparation Method:**	**SW5030B**		
17J0495-01	5.00 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-02	5.00 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-03	5.00 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-04	5.00 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-05	5.00 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-06	5.00 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-07	5.00 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-08	5.00 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-09	5.00 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-10	5.00 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-11	5.00 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-12	0.500 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-13	0.500 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-14	0.500 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-15	0.500 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-16	5.00 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-17	0.500 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
17J0495-18	0.500 mL / 5.00 mL	SW8015C	BAJ0492	SAJ0433	AJ70034
Volatile Organic Compounds by GCMS		**Preparation Method:**	**SW5030B**		
17J0495-01	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
17J0495-02	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
17J0495-03	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
17J0495-04	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
17J0495-05	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
17J0495-06	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
17J0495-07	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
17J0495-08	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
17J0495-09	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
17J0495-10	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
17J0495-11	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
17J0495-12	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
17J0495-13	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
17J0495-14	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
17J0495-15	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
17J0495-16	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
17J0495-17	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
17J0495-18	5.00 mL / 5.00 mL	SW8260B	BAJ0511	SAJ0451	AI70017
Volatile Organic Compounds by GCMS		**Preparation Method:**	**SW5030B**		
17J0495-12RE1	5.00 mL / 5.00 mL	SW8260B	BAJ0516	SAJ0454	AJ70010
17J0495-12RE2	5.00 mL / 5.00 mL	SW8260B	BAJ0516	SAJ0454	AJ70010
17J0495-13RE1	5.00 mL / 5.00 mL	SW8260B	BAJ0516	SAJ0454	AJ70010
17J0495-14RE1	5.00 mL / 5.00 mL	SW8260B	BAJ0516	SAJ0454	AJ70010
17J0495-15RE1	5.00 mL / 5.00 mL	SW8260B	BAJ0516	SAJ0454	AJ70010
17J0495-16RE1	5.00 mL / 5.00 mL	SW8260B	BAJ0516	SAJ0454	AJ70010
17J0495-17RE1	5.00 mL / 5.00 mL	SW8260B	BAJ0516	SAJ0454	AJ70010
17J0495-18RE1	5.00 mL / 5.00 mL	SW8260B	BAJ0516	SAJ0454	AJ70010

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Micro-extractables by GC/ECD		**Preparation Method:**	**SW8011**		
17J0495-01	60.9 mL / 2.00 mL	SW8011	BAJ0494	SAJ0437	AG70133
17J0495-02	60.8 mL / 2.00 mL	SW8011	BAJ0494	SAJ0437	AG70133
17J0495-03	60.9 mL / 2.00 mL	SW8011	BAJ0494	SAJ0437	AG70133
Micro-extractables by GC/ECD		**Preparation Method:**	**SW8011**		
17J0495-04	60.6 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-05	60.6 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-06	59.5 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-07	61.5 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-08	58.1 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-09	59.5 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-10	58.1 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-11	59.8 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-12	58.8 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-12RE1	58.8 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-13	60.5 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-13RE1	60.5 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-13RE2	60.5 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-14	60.7 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
17J0495-14RE1	60.7 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-15	58.1 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-15RE1	58.1 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-16	59.9 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-16RE1	59.9 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-17	58.0 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-17RE1	58.0 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-18	58.9 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133
17J0495-18RE1	58.9 mL / 2.00 mL	SW8011	BAJ0496	SAJ0437	AG70133

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Hydrocarbons by GC - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0492 - SW5030B										
Blank (BAJ0492-BLK1)				Prepared & Analyzed: 10/17/2017						
TPH-Volatiles (GRO)	<0.10 mg/L	0.10	mg/L							
Surr: 2,5-Dibromotoluene (Surr FID)	96.0		ug/L	100		96.0	80-120			
LCS (BAJ0492-BS1)				Prepared & Analyzed: 10/17/2017						
TPH-Volatiles (GRO)	1.01 mg/L	0.10	mg/L	1.00	mg/L	101	70-130			
Surr: 2,5-Dibromotoluene (Surr FID)	99.6		ug/L	100	ug/L	99.6	80-120			
Matrix Spike (BAJ0492-MS1)		**Source: 17J0495-05**		Prepared & Analyzed: 10/17/2017						
TPH-Volatiles (GRO)	1.00 mg/L	0.10	mg/L	1.00	<0.10 mg/L	99.7	70-130			
Surr: 2,5-Dibromotoluene (Surr FID)	97.2		ug/L	100	ug/L	97.2	80-120			
Matrix Spike Dup (BAJ0492-MSD1)		**Source: 17J0495-05**		Prepared & Analyzed: 10/17/2017						
TPH-Volatiles (GRO)	1.00 mg/L	0.10	mg/L	1.00	<0.10 mg/L	99.5	70-130	0.138	20	
Surr: 2,5-Dibromotoluene (Surr FID)	99.4		ug/L	100	ug/L	99.4	80-120			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0511 - SW5030B										
Blank (BAJ0511-BLK1)				Prepared & Analyzed: 10/17/2017						
1,1,1,2-Tetrachloroethane	<0.40 ug/L	0.40	ug/L							
1,1,1-Trichloroethane	<1.00 ug/L	1.00	ug/L							
1,1,2,2-Tetrachloroethane	<0.40 ug/L	0.40	ug/L							
1,1,2-Trichloroethane	<1.00 ug/L	1.00	ug/L							
1,1-Dichloroethane	<1.00 ug/L	1.00	ug/L							
1,1-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
1,1-Dichloropropene	<1.00 ug/L	1.00	ug/L							
1,2,3-Trichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2,3-Trichloropropane	<1.00 ug/L	1.00	ug/L							
1,2,4-Trichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2,4-Trimethylbenzene	<1.00 ug/L	1.00	ug/L							
1,2-Dibromo-3-chloropropane (DBCP)	<4.00 ug/L	4.00	ug/L							
1,2-Dibromoethane (EDB)	<1.00 ug/L	1.00	ug/L							
1,2-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2-Dichloroethane	<1.00 ug/L	1.00	ug/L							
1,2-Dichloropropane	<1.00 ug/L	1.00	ug/L							
1,3,5-Trimethylbenzene	<1.00 ug/L	1.00	ug/L							
1,3-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,3-Dichloropropane	<1.00 ug/L	1.00	ug/L							
1,4-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
2,2-Dichloropropane	<2.00 ug/L	2.00	ug/L							
2-Butanone (MEK)	<10.0 ug/L	10.0	ug/L							
2-Chlorotoluene	<1.00 ug/L	1.00	ug/L							
2-Hexanone (MBK)	<5.00 ug/L	5.00	ug/L							
4-Chlorotoluene	<1.00 ug/L	1.00	ug/L							
4-Isopropyltoluene	<1.00 ug/L	1.00	ug/L							
4-Methyl-2-pentanone (MIBK)	<5.00 ug/L	5.00	ug/L							
Acetone	<10.0 ug/L	10.0	ug/L							
Benzene	<1.00 ug/L	1.00	ug/L							
Bromobenzene	<1.00 ug/L	1.00	ug/L							
Bromochloromethane	<1.00 ug/L	1.00	ug/L							

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0511 - SW5030B										
Blank (BAJ0511-BLK1)				Prepared & Analyzed: 10/17/2017						
Bromodichloromethane	<0.50 ug/L	0.50	ug/L							
Bromoform	<1.00 ug/L	1.00	ug/L							
Bromomethane	<1.00 ug/L	1.00	ug/L							
Carbon disulfide	<10.0 ug/L	10.0	ug/L							
Carbon tetrachloride	<1.00 ug/L	1.00	ug/L							
Chlorobenzene	<1.00 ug/L	1.00	ug/L							
Chloroethane	<1.00 ug/L	1.00	ug/L							
Chloroform	<0.50 ug/L	0.50	ug/L							
Chloromethane	<1.00 ug/L	1.00	ug/L							
cis-1,2-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
cis-1,3-Dichloropropene	<1.00 ug/L	1.00	ug/L							
Dibromochloromethane	<1.00 ug/L	1.00	ug/L							
Dibromomethane	<1.00 ug/L	1.00	ug/L							
Dichlorodifluoromethane	<1.00 ug/L	1.00	ug/L							
Di-isopropyl ether (DIPE)	<5.00 ug/L	5.00	ug/L							
Ethylbenzene	<1.00 ug/L	1.00	ug/L							
Hexachlorobutadiene	<1.00 ug/L	1.00	ug/L							
Iodomethane	<10.0 ug/L	10.0	ug/L							
Isopropylbenzene	<1.00 ug/L	1.00	ug/L							
m+p-Xylenes	<2.00 ug/L	2.00	ug/L							
Methylene chloride	<4.00 ug/L	4.00	ug/L							
Methyl-t-butyl ether (MTBE)	<1.00 ug/L	1.00	ug/L							
Naphthalene	<1.00 ug/L	1.00	ug/L							
n-Butylbenzene	<1.00 ug/L	1.00	ug/L							
n-Propylbenzene	<1.00 ug/L	1.00	ug/L							
o-Xylene	<1.00 ug/L	1.00	ug/L							
sec-Butylbenzene	<1.00 ug/L	1.00	ug/L							
Styrene	<1.00 ug/L	1.00	ug/L							
tert-Butylbenzene	<1.00 ug/L	1.00	ug/L							
Tetrachloroethylene (PCE)	<1.00 ug/L	1.00	ug/L							
Toluene	<1.00 ug/L	1.00	ug/L							

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0511 - SW5030B										
Blank (BAJ0511-BLK1)				Prepared & Analyzed: 10/17/2017						
trans-1,2-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
trans-1,3-Dichloropropene	<1.00 ug/L	1.00	ug/L							
Trichloroethylene	<1.00 ug/L	1.00	ug/L							
Trichlorofluoromethane	<1.00 ug/L	1.00	ug/L							
Vinyl acetate	<10.0 ug/L	10.0	ug/L							
Vinyl chloride	<0.50 ug/L	0.50	ug/L							
Xylenes, Total	<3.00 ug/L	3.00	ug/L							
Surr: 1,2-Dichloroethane-d4 (Surr)	47.4		ug/L	50.0		94.9	70-120			
Surr: 4-Bromofluorobenzene (Surr)	48.3		ug/L	50.0		96.7	75-120			
Surr: Dibromofluoromethane (Surr)	48.4		ug/L	50.0		96.8	80-119			
Surr: Toluene-d8 (Surr)	49.8		ug/L	50.0		99.6	85-120			
LCS (BAJ0511-BS1)				Prepared & Analyzed: 10/17/2017						
1,1,1,2-Tetrachloroethane	50.4 ug/L	0.4	ug/L	50.0	ug/L	101	80-130			
1,1,1-Trichloroethane	47.9 ug/L	1	ug/L	50.0	ug/L	95.9	65-130			
1,1,2,2-Tetrachloroethane	44.4 ug/L	0.4	ug/L	50.0	ug/L	88.8	65-130			
1,1,2-Trichloroethane	50.6 ug/L	1	ug/L	50.0	ug/L	101	75-125			
1,1-Dichloroethane	48.8 ug/L	1	ug/L	50.0	ug/L	97.7	70-135			
1,1-Dichloroethylene	48.9 ug/L	1	ug/L	50.0	ug/L	97.8	70-130			
1,1-Dichloropropene	49.1 ug/L	1	ug/L	50.0	ug/L	98.3	75-135			
1,2,3-Trichlorobenzene	49.6 ug/L	1	ug/L	50.0	ug/L	99.2	55-140			
1,2,3-Trichloropropane	44.7 ug/L	1	ug/L	50.0	ug/L	89.4	75-125			
1,2,4-Trichlorobenzene	50.1 ug/L	1	ug/L	50.0	ug/L	100	65-135			
1,2,4-Trimethylbenzene	48.1 ug/L	1	ug/L	50.0	ug/L	96.2	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	41.0 ug/L	4	ug/L	50.0	ug/L	82.0	50-130			
1,2-Dibromoethane (EDB)	47.5 ug/L	1	ug/L	50.0	ug/L	95.0	80-120			
1,2-Dichlorobenzene	48.0 ug/L	1	ug/L	50.0	ug/L	96.1	70-120			
1,2-Dichloroethane	44.4 ug/L	1	ug/L	50.0	ug/L	88.8	70-130			
1,2-Dichloropropane	48.6 ug/L	1	ug/L	50.0	ug/L	97.2	75-125			
1,3,5-Trimethylbenzene	48.7 ug/L	1	ug/L	50.0	ug/L	97.4	75-125			
1,3-Dichlorobenzene	50.4 ug/L	1	ug/L	50.0	ug/L	101	75-125			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0511 - SW5030B										
LCS (BAJ0511-BS1)				Prepared & Analyzed: 10/17/2017						
1,3-Dichloropropane	48.7 ug/L	1	ug/L	50.0	ug/L	97.4	75-125			
1,4-Dichlorobenzene	49.1 ug/L	1	ug/L	50.0	ug/L	98.2	75-125			
2,2-Dichloropropane	49.2 ug/L	2	ug/L	50.0	ug/L	98.3	70-135			
2-Butanone (MEK)	44.9 ug/L	10	ug/L	50.0	ug/L	89.8	30-150			
2-Chlorotoluene	51.2 ug/L	1	ug/L	50.0	ug/L	102	75-125			
2-Hexanone (MBK)	45.3 ug/L	5	ug/L	50.0	ug/L	90.5	55-130			
4-Chlorotoluene	49.0 ug/L	1	ug/L	50.0	ug/L	98.1	75-130			
4-Isopropyltoluene	48.9 ug/L	1	ug/L	50.0	ug/L	97.9	75-130			
4-Methyl-2-pentanone (MIBK)	43.6 ug/L	5	ug/L	50.0	ug/L	87.2	60-135			
Acetone	40.8 ug/L	10	ug/L	50.0	ug/L	81.5	40-140			
Benzene	50.2 ug/L	1	ug/L	50.0	ug/L	100	80-120			
Bromobenzene	48.3 ug/L	1	ug/L	50.0	ug/L	96.6	75-125			
Bromochloromethane	47.5 ug/L	1	ug/L	50.0	ug/L	95.0	65-130			
Bromodichloromethane	50.3 ug/L	0.5	ug/L	50.0	ug/L	101	75-120			
Bromoform	50.5 ug/L	1	ug/L	50.0	ug/L	101	70-130			
Bromomethane	43.2 ug/L	1	ug/L	50.0	ug/L	86.4	30-145			
Carbon disulfide	40.0 ug/L	10	ug/L	50.0	ug/L	80.1	35-160			
Carbon tetrachloride	51.8 ug/L	1	ug/L	50.0	ug/L	104	65-140			
Chlorobenzene	48.4 ug/L	1	ug/L	50.0	ug/L	96.8	80-120			
Chloroethane	40.3 ug/L	1	ug/L	50.0	ug/L	80.5	60-135			
Chloroform	45.2 ug/L	0.5	ug/L	50.0	ug/L	90.4	65-135			
Chloromethane	32.9 ug/L	1	ug/L	50.0	ug/L	65.8	40-125			
cis-1,2-Dichloroethylene	46.8 ug/L	1	ug/L	50.0	ug/L	93.7	70-125			
cis-1,3-Dichloropropene	50.5 ug/L	1	ug/L	50.0	ug/L	101	70-130			
Dibromochloromethane	50.6 ug/L	1	ug/L	50.0	ug/L	101	60-135			
Dibromomethane	49.7 ug/L	1	ug/L	50.0	ug/L	99.3	75-125			
Dichlorodifluoromethane	30.1 ug/L	1	ug/L	50.0	ug/L	60.3	30-155			
Ethylbenzene	48.3 ug/L	1	ug/L	50.0	ug/L	96.6	75-125			
Hexachlorobutadiene	50.4 ug/L	1	ug/L	50.0	ug/L	101	50-140			
Isopropylbenzene	50.6 ug/L	1	ug/L	50.0	ug/L	101	75-125			
m+p-Xylenes	101 ug/L	2	ug/L	100	ug/L	101	75-130			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0511 - SW5030B										
LCS (BAJ0511-BS1)				Prepared & Analyzed: 10/17/2017						
Methylene chloride	47.1 ug/L	4	ug/L	50.0	ug/L	94.2	55-140			
Methyl-t-butyl ether (MTBE)	48.5 ug/L	1	ug/L	50.0	ug/L	97.0	65-125			
Naphthalene	46.7 ug/L	1	ug/L	50.0	ug/L	93.4	55-140			
n-Butylbenzene	50.3 ug/L	1	ug/L	50.0	ug/L	101	70-135			
n-Propylbenzene	49.9 ug/L	1	ug/L	50.0	ug/L	99.8	70-130			
o-Xylene	48.2 ug/L	1	ug/L	50.0	ug/L	96.4	80-120			
sec-Butylbenzene	49.3 ug/L	1	ug/L	50.0	ug/L	98.5	70-125			
Styrene	50.5 ug/L	1	ug/L	50.0	ug/L	101	65-135			
tert-Butylbenzene	51.7 ug/L	1	ug/L	50.0	ug/L	103	70-130			
Tetrachloroethylene (PCE)	71.5 ug/L	1	ug/L	50.0	ug/L	143	45-150			
Toluene	50.2 ug/L	1	ug/L	50.0	ug/L	100	75-120			
trans-1,2-Dichloroethylene	49.3 ug/L	1	ug/L	50.0	ug/L	98.6	60-140			
trans-1,3-Dichloropropene	49.9 ug/L	1	ug/L	50.0	ug/L	99.8	55-140			
Trichloroethylene	50.7 ug/L	1	ug/L	50.0	ug/L	101	70-125			
Trichlorofluoromethane	39.6 ug/L	1	ug/L	50.0	ug/L	79.3	60-145			
Vinyl chloride	35.1 ug/L	0.5	ug/L	50.0	ug/L	70.2	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	48.1		ug/L	50.0	ug/L	96.1	70-120			
Surr: 4-Bromofluorobenzene (Surr)	48.9		ug/L	50.0	ug/L	97.7	75-120			
Surr: Dibromofluoromethane (Surr)	47.7		ug/L	50.0	ug/L	95.5	80-119			
Surr: Toluene-d8 (Surr)	49.3		ug/L	50.0	ug/L	98.6	85-120			
Matrix Spike (BAJ0511-MS1)	**Source: 17J0526-01**			Prepared & Analyzed: 10/17/2017						
1,1,1,2-Tetrachloroethane	50.6 ug/L	0.4	ug/L	50.0	<0.4 ug/L	101	80-130			
1,1,1-Trichloroethane	46.1 ug/L	1	ug/L	50.0	<1 ug/L	92.2	65-130			
1,1,2,2-Tetrachloroethane	49.1 ug/L	0.4	ug/L	50.0	<0.4 ug/L	98.3	65-130			
1,1,2-Trichloroethane	53.6 ug/L	1	ug/L	50.0	<1 ug/L	107	75-125			
1,1-Dichloroethane	49.0 ug/L	1	ug/L	50.0	<1 ug/L	98.1	70-135			
1,1-Dichloroethylene	45.1 ug/L	1	ug/L	50.0	<1 ug/L	90.1	70-130			
1,1-Dichloropropene	47.0 ug/L	1	ug/L	50.0	<1 ug/L	93.9	75-135			
1,2,3-Trichlorobenzene	50.7 ug/L	1	ug/L	50.0	<1 ug/L	101	55-140			
1,2,3-Trichloropropane	51.3 ug/L	1	ug/L	50.0	<1 ug/L	103	75-125			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0511 - SW5030B										
Matrix Spike (BAJ0511-MS1)		**Source: 17J0526-01**		Prepared & Analyzed: 10/17/2017						
1,2,4-Trichlorobenzene	48.5 ug/L	1	ug/L	50.0	<1 ug/L	97.0	65-135			
1,2,4-Trimethylbenzene	49.2 ug/L	1	ug/L	50.0	<1 ug/L	98.4	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	49.6 ug/L	4	ug/L	50.0	<4 ug/L	99.3	50-130			
1,2-Dibromoethane (EDB)	52.6 ug/L	1	ug/L	50.0	<1 ug/L	105	80-120			
1,2-Dichlorobenzene	48.6 ug/L	1	ug/L	50.0	<1 ug/L	97.1	70-120			
1,2-Dichloroethane	46.3 ug/L	1	ug/L	50.0	<1 ug/L	92.6	70-130			
1,2-Dichloropropane	50.2 ug/L	1	ug/L	50.0	<1 ug/L	100	75-125			
1,3,5-Trimethylbenzene	48.3 ug/L	1	ug/L	50.0	<1 ug/L	96.7	75-125			
1,3-Dichlorobenzene	48.5 ug/L	1	ug/L	50.0	<1 ug/L	96.9	75-125			
1,3-Dichloropropane	52.5 ug/L	1	ug/L	50.0	<1 ug/L	105	75-125			
1,4-Dichlorobenzene	48.1 ug/L	1	ug/L	50.0	<1 ug/L	96.3	75-125			
2,2-Dichloropropane	47.3 ug/L	2	ug/L	50.0	<2 ug/L	94.6	70-135			
2-Butanone (MEK)	48.6 ug/L	10	ug/L	50.0	<10 ug/L	97.2	30-150			
2-Chlorotoluene	50.2 ug/L	1	ug/L	50.0	<1 ug/L	100	75-125			
2-Hexanone (MBK)	48.6 ug/L	5	ug/L	50.0	<5 ug/L	97.3	55-130			
4-Chlorotoluene	48.5 ug/L	1	ug/L	50.0	<1 ug/L	97.1	75-130			
4-Isopropyltoluene	46.9 ug/L	1	ug/L	50.0	<1 ug/L	93.7	75-130			
4-Methyl-2-pentanone (MIBK)	47.5 ug/L	5	ug/L	50.0	<5 ug/L	95.0	60-135			
Acetone	44.1 ug/L	10	ug/L	50.0	<10 ug/L	77.6	40-140			
Benzene	52.3 ug/L	1	ug/L	50.0	<1 ug/L	105	80-120			
Bromobenzene	49.7 ug/L	1	ug/L	50.0	<1 ug/L	99.4	75-125			
Bromochloromethane	47.8 ug/L	1	ug/L	50.0	<1 ug/L	95.5	65-130			
Bromodichloromethane	51.5 ug/L	0.5	ug/L	50.0	<0.5 ug/L	103	75-120			
Bromoform	54.2 ug/L	1	ug/L	50.0	<1 ug/L	108	70-130			
Bromomethane	36.6 ug/L	1	ug/L	50.0	<1 ug/L	73.2	30-145			
Carbon disulfide	33.3 ug/L	10	ug/L	50.0	<10 ug/L	66.6	35-160			
Carbon tetrachloride	49.5 ug/L	1	ug/L	50.0	<1 ug/L	99.1	65-140			
Chlorobenzene	48.3 ug/L	1	ug/L	50.0	<1 ug/L	96.6	80-120			
Chloroethane	36.7 ug/L	1	ug/L	50.0	<1 ug/L	73.4	60-135			
Chloroform	44.7 ug/L	0.5	ug/L	50.0	<0.5 ug/L	89.4	65-135			
Chloromethane	31.3 ug/L	1	ug/L	50.0	<1 ug/L	62.7	40-125			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0511 - SW5030B										
Matrix Spike (BAJ0511-MS1)		**Source: 17J0526-01**		Prepared & Analyzed: 10/17/2017						
cis-1,2-Dichloroethylene	45.0 ug/L	1	ug/L	50.0	<1 ug/L	90.0	70-125			
cis-1,3-Dichloropropene	51.5 ug/L	1	ug/L	50.0	<1 ug/L	103	70-130			
Dibromochloromethane	53.3 ug/L	1	ug/L	50.0	<1 ug/L	107	60-135			
Dibromomethane	52.4 ug/L	1	ug/L	50.0	<1 ug/L	105	75-125			
Dichlorodifluoromethane	29.0 ug/L	1	ug/L	50.0	<1 ug/L	57.9	30-155			
Ethylbenzene	48.4 ug/L	1	ug/L	50.0	<1 ug/L	96.9	75-125			
Hexachlorobutadiene	48.6 ug/L	1	ug/L	50.0	<1 ug/L	97.2	50-140			
Isopropylbenzene	49.3 ug/L	1	ug/L	50.0	<1 ug/L	98.6	75-125			
m+p-Xylenes	105 ug/L	2	ug/L	100	<2 ug/L	105	75-130			
Methylene chloride	46.4 ug/L	4	ug/L	50.0	<4 ug/L	89.0	55-140			
Methyl-t-butyl ether (MTBE)	52.2 ug/L	1	ug/L	50.0	<1 ug/L	104	65-125			
Naphthalene	53.4 ug/L	1	ug/L	50.0	<1 ug/L	107	55-140			
n-Butylbenzene	47.3 ug/L	1	ug/L	50.0	<1 ug/L	94.6	70-135			
n-Propylbenzene	47.9 ug/L	1	ug/L	50.0	<1 ug/L	95.8	70-130			
o-Xylene	50.6 ug/L	1	ug/L	50.0	<1 ug/L	101	80-120			
sec-Butylbenzene	47.0 ug/L	1	ug/L	50.0	<1 ug/L	94.0	70-125			
Styrene	51.2 ug/L	1	ug/L	50.0	<1 ug/L	102	65-135			
tert-Butylbenzene	49.8 ug/L	1	ug/L	50.0	<1 ug/L	99.6	70-130			
Tetrachloroethylene (PCE)	68.0 ug/L	1	ug/L	50.0	<1 ug/L	136	45-150			
Toluene	60.0 ug/L	1	ug/L	50.0	<1 ug/L	120	75-120			M
trans-1,2-Dichloroethylene	47.2 ug/L	1	ug/L	50.0	<1 ug/L	94.4	60-140			
trans-1,3-Dichloropropene	52.7 ug/L	1	ug/L	50.0	<1 ug/L	105	55-140			
Trichloroethylene	49.2 ug/L	1	ug/L	50.0	<1 ug/L	98.5	70-125			
Trichlorofluoromethane	35.4 ug/L	1	ug/L	50.0	<1 ug/L	70.9	60-145			
Vinyl chloride	32.5 ug/L	0.5	ug/L	50.0	<0.5 ug/L	65.1	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	47.1		ug/L	50.0	ug/L	94.3	70-120			
Surr: 4-Bromofluorobenzene (Surr)	49.5		ug/L	50.0	ug/L	99.0	75-120			
Surr: Dibromofluoromethane (Surr)	46.0		ug/L	50.0	ug/L	92.0	80-119			
Surr: Toluene-d8 (Surr)	49.6		ug/L	50.0	ug/L	99.1	85-120			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0511 - SW5030B										
Matrix Spike Dup (BAJ0511-MSD1)		**Source: 17J0526-01**		Prepared & Analyzed: 10/17/2017						
1,1,1,2-Tetrachloroethane	48.9 ug/L	0.4	ug/L	50.0	<0.4 ug/L	97.7	80-130	3.58	30	
1,1,1-Trichloroethane	45.1 ug/L	1	ug/L	50.0	<1 ug/L	90.3	65-130	2.12	30	
1,1,2,2-Tetrachloroethane	45.0 ug/L	0.4	ug/L	50.0	<0.4 ug/L	90.0	65-130	8.76	30	
1,1,2-Trichloroethane	50.4 ug/L	1	ug/L	50.0	<1 ug/L	101	75-125	6.13	30	
1,1-Dichloroethane	47.7 ug/L	1	ug/L	50.0	<1 ug/L	95.5	70-135	2.69	30	
1,1-Dichloroethylene	44.5 ug/L	1	ug/L	50.0	<1 ug/L	89.0	70-130	1.24	30	
1,1-Dichloropropene	46.1 ug/L	1	ug/L	50.0	<1 ug/L	92.2	75-135	1.89	30	
1,2,3-Trichlorobenzene	48.1 ug/L	1	ug/L	50.0	<1 ug/L	96.2	55-140	5.18	30	
1,2,3-Trichloropropane	47.7 ug/L	1	ug/L	50.0	<1 ug/L	95.4	75-125	7.24	30	
1,2,4-Trichlorobenzene	46.8 ug/L	1	ug/L	50.0	<1 ug/L	93.7	65-135	3.53	30	
1,2,4-Trimethylbenzene	46.5 ug/L	1	ug/L	50.0	<1 ug/L	92.9	75-130	5.69	30	
1,2-Dibromo-3-chloropropane (DBCP)	45.5 ug/L	4	ug/L	50.0	<4 ug/L	91.0	50-130	8.71	30	
1,2-Dibromoethane (EDB)	48.0 ug/L	1	ug/L	50.0	<1 ug/L	95.9	80-120	9.18	30	
1,2-Dichlorobenzene	46.6 ug/L	1	ug/L	50.0	<1 ug/L	93.2	70-120	4.13	30	
1,2-Dichloroethane	44.0 ug/L	1	ug/L	50.0	<1 ug/L	88.0	70-130	5.14	30	
1,2-Dichloropropane	47.4 ug/L	1	ug/L	50.0	<1 ug/L	94.9	75-125	5.56	30	
1,3,5-Trimethylbenzene	46.9 ug/L	1	ug/L	50.0	<1 ug/L	93.7	75-125	3.12	30	
1,3-Dichlorobenzene	46.8 ug/L	1	ug/L	50.0	<1 ug/L	93.6	75-125	3.50	30	
1,3-Dichloropropane	49.0 ug/L	1	ug/L	50.0	<1 ug/L	98.1	75-125	6.92	30	
1,4-Dichlorobenzene	45.9 ug/L	1	ug/L	50.0	<1 ug/L	91.9	75-125	4.65	30	
2,2-Dichloropropane	43.9 ug/L	2	ug/L	50.0	<2 ug/L	87.7	70-135	7.57	30	
2-Butanone (MEK)	46.5 ug/L	10	ug/L	50.0	<10 ug/L	93.0	30-150	4.40	30	
2-Chlorotoluene	48.2 ug/L	1	ug/L	50.0	<1 ug/L	96.4	75-125	4.08	30	
2-Hexanone (MBK)	48.2 ug/L	5	ug/L	50.0	<5 ug/L	96.3	55-130	0.992	30	
4-Chlorotoluene	46.3 ug/L	1	ug/L	50.0	<1 ug/L	92.7	75-130	4.66	30	
4-Isopropyltoluene	45.8 ug/L	1	ug/L	50.0	<1 ug/L	91.5	75-130	2.37	30	
4-Methyl-2-pentanone (MIBK)	46.2 ug/L	5	ug/L	50.0	<5 ug/L	92.5	60-135	2.74	30	
Acetone	43.1 ug/L	10	ug/L	50.0	<10 ug/L	75.5	40-140	2.34	30	
Benzene	48.2 ug/L	1	ug/L	50.0	<1 ug/L	96.3	80-120	8.20	30	
Bromobenzene	46.9 ug/L	1	ug/L	50.0	<1 ug/L	93.8	75-125	5.78	30	
Bromochloromethane	45.7 ug/L	1	ug/L	50.0	<1 ug/L	91.4	65-130	4.36	30	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0511 - SW5030B										
Matrix Spike Dup (BAJ0511-MSD1)		**Source: 17J0526-01**		Prepared & Analyzed: 10/17/2017						
Bromodichloromethane	49.5 ug/L	0.5	ug/L	50.0	<0.5 ug/L	99.0	75-120	3.97	30	
Bromoform	50.3 ug/L	1	ug/L	50.0	<1 ug/L	101	70-130	7.60	30	
Bromomethane	38.1 ug/L	1	ug/L	50.0	<1 ug/L	76.3	30-145	4.04	30	
Carbon disulfide	34.2 ug/L	10	ug/L	50.0	<10 ug/L	68.5	35-160	2.78	30	
Carbon tetrachloride	47.4 ug/L	1	ug/L	50.0	<1 ug/L	94.9	65-140	4.35	30	
Chlorobenzene	47.0 ug/L	1	ug/L	50.0	<1 ug/L	94.0	80-120	2.67	30	
Chloroethane	35.8 ug/L	1	ug/L	50.0	<1 ug/L	71.6	60-135	2.49	30	
Chloroform	42.9 ug/L	0.5	ug/L	50.0	<0.5 ug/L	85.9	65-135	3.94	30	
Chloromethane	30.5 ug/L	1	ug/L	50.0	<1 ug/L	61.1	40-125	2.61	30	
cis-1,2-Dichloroethylene	43.1 ug/L	1	ug/L	50.0	<1 ug/L	86.2	70-125	4.34	30	
cis-1,3-Dichloropropene	49.3 ug/L	1	ug/L	50.0	<1 ug/L	98.5	70-130	4.42	30	
Dibromochloromethane	50.0 ug/L	1	ug/L	50.0	<1 ug/L	100	60-135	6.39	30	
Dibromomethane	48.6 ug/L	1	ug/L	50.0	<1 ug/L	97.3	75-125	7.37	30	
Dichlorodifluoromethane	28.0 ug/L	1	ug/L	50.0	<1 ug/L	56.0	30-155	3.31	30	
Ethylbenzene	46.1 ug/L	1	ug/L	50.0	<1 ug/L	92.1	75-125	5.02	30	
Hexachlorobutadiene	48.4 ug/L	1	ug/L	50.0	<1 ug/L	96.9	50-140	0.342	30	
Isopropylbenzene	47.5 ug/L	1	ug/L	50.0	<1 ug/L	95.1	75-125	3.65	30	
m+p-Xylenes	97.4 ug/L	2	ug/L	100	<2 ug/L	97.4	75-130	7.70	30	
Methylene chloride	44.6 ug/L	4	ug/L	50.0	<4 ug/L	85.4	55-140	3.92	30	
Methyl-t-butyl ether (MTBE)	48.8 ug/L	1	ug/L	50.0	<1 ug/L	97.6	65-125	6.71	30	
Naphthalene	48.9 ug/L	1	ug/L	50.0	<1 ug/L	97.8	55-140	8.81	30	
n-Butylbenzene	46.7 ug/L	1	ug/L	50.0	<1 ug/L	93.4	70-135	1.25	30	
n-Propylbenzene	46.5 ug/L	1	ug/L	50.0	<1 ug/L	93.0	70-130	2.95	30	
o-Xylene	46.9 ug/L	1	ug/L	50.0	<1 ug/L	93.8	80-120	7.53	30	
sec-Butylbenzene	45.7 ug/L	1	ug/L	50.0	<1 ug/L	91.4	70-125	2.80	30	
Styrene	48.8 ug/L	1	ug/L	50.0	<1 ug/L	97.6	65-135	4.77	30	
tert-Butylbenzene	49.2 ug/L	1	ug/L	50.0	<1 ug/L	98.5	70-130	1.16	30	
Tetrachloroethylene (PCE)	66.2 ug/L	1	ug/L	50.0	<1 ug/L	132	45-150	2.78	30	
Toluene	50.8 ug/L	1	ug/L	50.0	<1 ug/L	102	75-120	16.7	30	
trans-1,2-Dichloroethylene	45.2 ug/L	1	ug/L	50.0	<1 ug/L	90.5	60-140	4.32	30	
trans-1,3-Dichloropropene	49.3 ug/L	1	ug/L	50.0	<1 ug/L	98.5	55-140	6.83	30	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0511 - SW5030B										
Matrix Spike Dup (BAJ0511-MSD1)		**Source: 17J0526-01**		Prepared & Analyzed: 10/17/2017						
Trichloroethylene	47.3 ug/L	1	ug/L	50.0	<1 ug/L	94.6	70-125	4.05	30	
Trichlorofluoromethane	34.7 ug/L	1	ug/L	50.0	<1 ug/L	69.5	60-145	2.00	30	
Vinyl chloride	30.0 ug/L	0.5	ug/L	50.0	<0.5 ug/L	59.9	50-145	8.23	30	
Surr: 1,2-Dichloroethane-d4 (Surr)	46.7		ug/L	50.0	ug/L	93.5	70-120			
Surr: 4-Bromofluorobenzene (Surr)	49.6		ug/L	50.0	ug/L	99.2	75-120			
Surr: Dibromofluoromethane (Surr)	46.1		ug/L	50.0	ug/L	92.2	80-119			
Surr: Toluene-d8 (Surr)	49.3		ug/L	50.0	ug/L	98.7	85-120			
Batch BAJ0516 - SW5030B										
Blank (BAJ0516-BLK1)				Prepared & Analyzed: 10/17/2017						
1,1,1,2-Tetrachloroethane	<0.40 ug/L	0.40	ug/L							
1,1,1-Trichloroethane	<1.00 ug/L	1.00	ug/L							
1,1,2,2-Tetrachloroethane	<0.40 ug/L	0.40	ug/L							
1,1,2-Trichloroethane	<1.00 ug/L	1.00	ug/L							
1,1-Dichloroethane	<1.00 ug/L	1.00	ug/L							
1,1-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
1,1-Dichloropropene	<1.00 ug/L	1.00	ug/L							
1,2,3-Trichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2,3-Trichloropropane	<1.00 ug/L	1.00	ug/L							
1,2,4-Trichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2,4-Trimethylbenzene	<1.00 ug/L	1.00	ug/L							
1,2-Dibromo-3-chloropropane (DBCP)	<4.00 ug/L	4.00	ug/L							
1,2-Dibromoethane (EDB)	<1.00 ug/L	1.00	ug/L							
1,2-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,2-Dichloroethane	<1.00 ug/L	1.00	ug/L							
1,2-Dichloropropane	<1.00 ug/L	1.00	ug/L							
1,3,5-Trimethylbenzene	<1.00 ug/L	1.00	ug/L							
1,3-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							
1,3-Dichloropropane	<1.00 ug/L	1.00	ug/L							
1,4-Dichlorobenzene	<1.00 ug/L	1.00	ug/L							

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0516 - SW5030B										
Blank (BAJ0516-BLK1)				Prepared & Analyzed: 10/17/2017						
2,2-Dichloropropane	<2.00 ug/L	2.00	ug/L							
2-Butanone (MEK)	<10.0 ug/L	10.0	ug/L							
2-Chlorotoluene	<1.00 ug/L	1.00	ug/L							
2-Hexanone (MBK)	<5.00 ug/L	5.00	ug/L							
4-Chlorotoluene	<1.00 ug/L	1.00	ug/L							
4-Isopropyltoluene	<1.00 ug/L	1.00	ug/L							
4-Methyl-2-pentanone (MIBK)	<5.00 ug/L	5.00	ug/L							
Acetone	<10.0 ug/L	10.0	ug/L							
Benzene	<1.00 ug/L	1.00	ug/L							
Bromobenzene	<1.00 ug/L	1.00	ug/L							
Bromochloromethane	<1.00 ug/L	1.00	ug/L							
Bromodichloromethane	<0.50 ug/L	0.50	ug/L							
Bromoform	<1.00 ug/L	1.00	ug/L							
Bromomethane	<1.00 ug/L	1.00	ug/L							
Carbon disulfide	<10.0 ug/L	10.0	ug/L							
Carbon tetrachloride	<1.00 ug/L	1.00	ug/L							
Chlorobenzene	<1.00 ug/L	1.00	ug/L							
Chloroethane	<1.00 ug/L	1.00	ug/L							
Chloroform	<0.50 ug/L	0.50	ug/L							
Chloromethane	<1.00 ug/L	1.00	ug/L							
cis-1,2-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
cis-1,3-Dichloropropene	<1.00 ug/L	1.00	ug/L							
Dibromochloromethane	<1.00 ug/L	1.00	ug/L							
Dibromomethane	<1.00 ug/L	1.00	ug/L							
Dichlorodifluoromethane	<1.00 ug/L	1.00	ug/L							
Di-isopropyl ether (DIPE)	<5.00 ug/L	5.00	ug/L							
Ethylbenzene	<1.00 ug/L	1.00	ug/L							
Hexachlorobutadiene	<1.00 ug/L	1.00	ug/L							
Iodomethane	<10.0 ug/L	10.0	ug/L							
Isopropylbenzene	<1.00 ug/L	1.00	ug/L							
m+p-Xylenes	<2.00 ug/L	2.00	ug/L							

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0516 - SW5030B										
Blank (BAJ0516-BLK1)				Prepared & Analyzed: 10/17/2017						
Methylene chloride	<4.00 ug/L	4.00	ug/L							
Methyl-t-butyl ether (MTBE)	<1.00 ug/L	1.00	ug/L							
Naphthalene	<1.00 ug/L	1.00	ug/L							
n-Butylbenzene	<1.00 ug/L	1.00	ug/L							
n-Propylbenzene	<1.00 ug/L	1.00	ug/L							
o-Xylene	<1.00 ug/L	1.00	ug/L							
sec-Butylbenzene	<1.00 ug/L	1.00	ug/L							
Styrene	<1.00 ug/L	1.00	ug/L							
tert-Butylbenzene	<1.00 ug/L	1.00	ug/L							
Tetrachloroethylene (PCE)	<1.00 ug/L	1.00	ug/L							
Toluene	<1.00 ug/L	1.00	ug/L							
trans-1,2-Dichloroethylene	<1.00 ug/L	1.00	ug/L							
trans-1,3-Dichloropropene	<1.00 ug/L	1.00	ug/L							
Trichloroethylene	<1.00 ug/L	1.00	ug/L							
Trichlorofluoromethane	<1.00 ug/L	1.00	ug/L							
Vinyl acetate	<10.0 ug/L	10.0	ug/L							
Vinyl chloride	<0.50 ug/L	0.50	ug/L							
Xylenes, Total	<3.00 ug/L	3.00	ug/L							
Surr: 1,2-Dichloroethane-d4 (Surr)	49.5		ug/L	50.0		99.1	70-120			
Surr: 4-Bromofluorobenzene (Surr)	45.0		ug/L	50.0		90.0	75-120			
Surr: Dibromofluoromethane (Surr)	48.8		ug/L	50.0		97.6	80-119			
Surr: Toluene-d8 (Surr)	49.4		ug/L	50.0		98.7	85-120			
LCS (BAJ0516-BS1)				Prepared & Analyzed: 10/17/2017						
1,1,1,2-Tetrachloroethane	50.8 ug/L	0.4	ug/L	50.0	ug/L	102	80-130			
1,1,1-Trichloroethane	47.0 ug/L	1	ug/L	50.0	ug/L	94.1	65-130			
1,1,2,2-Tetrachloroethane	49.7 ug/L	0.4	ug/L	50.0	ug/L	99.4	65-130			
1,1,2-Trichloroethane	48.5 ug/L	1	ug/L	50.0	ug/L	96.9	75-125			
1,1-Dichloroethane	52.1 ug/L	1	ug/L	50.0	ug/L	104	70-135			
1,1-Dichloroethylene	47.5 ug/L	1	ug/L	50.0	ug/L	95.0	70-130			
1,1-Dichloropropene	49.0 ug/L	1	ug/L	50.0	ug/L	98.0	75-135			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0516 - SW5030B										
LCS (BAJ0516-BS1)				Prepared & Analyzed: 10/17/2017						
1,2,3-Trichlorobenzene	53.0 ug/L	1	ug/L	50.0	ug/L	106	55-140			
1,2,3-Trichloropropane	49.2 ug/L	1	ug/L	50.0	ug/L	98.4	75-125			
1,2,4-Trichlorobenzene	56.3 ug/L	1	ug/L	50.0	ug/L	113	65-135			
1,2,4-Trimethylbenzene	54.7 ug/L	1	ug/L	50.0	ug/L	109	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	52.9 ug/L	4	ug/L	50.0	ug/L	106	50-130			
1,2-Dibromoethane (EDB)	52.3 ug/L	1	ug/L	50.0	ug/L	105	80-120			
1,2-Dichlorobenzene	54.1 ug/L	1	ug/L	50.0	ug/L	108	70-120			
1,2-Dichloroethane	43.3 ug/L	1	ug/L	50.0	ug/L	86.6	70-130			
1,2-Dichloropropane	46.3 ug/L	1	ug/L	50.0	ug/L	92.7	75-125			
1,3,5-Trimethylbenzene	58.4 ug/L	1	ug/L	50.0	ug/L	117	75-125			
1,3-Dichlorobenzene	56.6 ug/L	1	ug/L	50.0	ug/L	113	75-125			
1,3-Dichloropropane	47.3 ug/L	1	ug/L	50.0	ug/L	94.6	75-125			
1,4-Dichlorobenzene	53.5 ug/L	1	ug/L	50.0	ug/L	107	75-125			
2,2-Dichloropropane	49.1 ug/L	2	ug/L	50.0	ug/L	98.2	70-135			
2-Butanone (MEK)	56.1 ug/L	10	ug/L	50.0	ug/L	112	30-150			
2-Chlorotoluene	58.4 ug/L	1	ug/L	50.0	ug/L	117	75-125			
2-Hexanone (MBK)	55.3 ug/L	5	ug/L	50.0	ug/L	111	55-130			
4-Chlorotoluene	58.5 ug/L	1	ug/L	50.0	ug/L	117	75-130			
4-Isopropyltoluene	57.8 ug/L	1	ug/L	50.0	ug/L	116	75-130			
4-Methyl-2-pentanone (MIBK)	48.8 ug/L	5	ug/L	50.0	ug/L	97.5	60-135			
Acetone	47.2 ug/L	10	ug/L	50.0	ug/L	94.3	40-140			
Benzene	49.4 ug/L	1	ug/L	50.0	ug/L	98.8	80-120			
Bromobenzene	52.4 ug/L	1	ug/L	50.0	ug/L	105	75-125			
Bromochloromethane	45.3 ug/L	1	ug/L	50.0	ug/L	90.6	65-130			
Bromodichloromethane	47.8 ug/L	0.5	ug/L	50.0	ug/L	95.5	75-120			
Bromoform	49.1 ug/L	1	ug/L	50.0	ug/L	98.2	70-130			
Bromomethane	42.4 ug/L	1	ug/L	50.0	ug/L	84.8	30-145			
Carbon disulfide	47.6 ug/L	10	ug/L	50.0	ug/L	95.2	35-160			
Carbon tetrachloride	48.9 ug/L	1	ug/L	50.0	ug/L	97.8	65-140			
Chlorobenzene	52.4 ug/L	1	ug/L	50.0	ug/L	105	80-120			
Chloroethane	43.0 ug/L	1	ug/L	50.0	ug/L	86.1	60-135			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0516 - SW5030B										
LCS (BAJ0516-BS1)				Prepared & Analyzed: 10/17/2017						
Chloroform	42.8 ug/L	0.5	ug/L	50.0	ug/L	85.5	65-135			
Chloromethane	36.2 ug/L	1	ug/L	50.0	ug/L	72.4	40-125			
cis-1,2-Dichloroethylene	46.9 ug/L	1	ug/L	50.0	ug/L	93.9	70-125			
cis-1,3-Dichloropropene	49.0 ug/L	1	ug/L	50.0	ug/L	98.1	70-130			
Dibromochloromethane	48.8 ug/L	1	ug/L	50.0	ug/L	97.5	60-135			
Dibromomethane	47.7 ug/L	1	ug/L	50.0	ug/L	95.4	75-125			
Dichlorodifluoromethane	33.4 ug/L	1	ug/L	50.0	ug/L	66.9	30-155			
Ethylbenzene	52.8 ug/L	1	ug/L	50.0	ug/L	106	75-125			
Hexachlorobutadiene	54.2 ug/L	1	ug/L	50.0	ug/L	108	50-140			
Isopropylbenzene	57.3 ug/L	1	ug/L	50.0	ug/L	115	75-125			
m+p-Xylenes	109 ug/L	2	ug/L	100	ug/L	109	75-130			
Methylene chloride	47.5 ug/L	4	ug/L	50.0	ug/L	95.1	55-140			
Methyl-t-butyl ether (MTBE)	45.2 ug/L	1	ug/L	50.0	ug/L	90.3	65-125			
Naphthalene	52.6 ug/L	1	ug/L	50.0	ug/L	105	55-140			
n-Butylbenzene	62.8 ug/L	1	ug/L	50.0	ug/L	126	70-135			
n-Propylbenzene	57.8 ug/L	1	ug/L	50.0	ug/L	116	70-130			
o-Xylene	54.2 ug/L	1	ug/L	50.0	ug/L	108	80-120			
sec-Butylbenzene	58.7 ug/L	1	ug/L	50.0	ug/L	117	70-125			
Styrene	52.0 ug/L	1	ug/L	50.0	ug/L	104	65-135			
tert-Butylbenzene	58.3 ug/L	1	ug/L	50.0	ug/L	117	70-130			
Tetrachloroethylene (PCE)	74.4 ug/L	1	ug/L	50.0	ug/L	149	45-150			
Toluene	46.4 ug/L	1	ug/L	50.0	ug/L	92.9	75-120			
trans-1,2-Dichloroethylene	46.4 ug/L	1	ug/L	50.0	ug/L	92.8	60-140			
trans-1,3-Dichloropropene	42.8 ug/L	1	ug/L	50.0	ug/L	85.6	55-140			
Trichloroethylene	49.0 ug/L	1	ug/L	50.0	ug/L	98.1	70-125			
Trichlorofluoromethane	41.2 ug/L	1	ug/L	50.0	ug/L	82.4	60-145			
Vinyl chloride	38.9 ug/L	0.5	ug/L	50.0	ug/L	77.8	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	45.9		ug/L	50.0	ug/L	91.8	70-120			
Surr: 4-Bromofluorobenzene (Surr)	49.7		ug/L	50.0	ug/L	99.4	75-120			
Surr: Dibromofluoromethane (Surr)	47.6		ug/L	50.0	ug/L	95.3	80-119			
Surr: Toluene-d8 (Surr)	48.6		ug/L	50.0	ug/L	97.1	85-120			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0516 - SW5030B										
Matrix Spike (BAJ0516-MS1)		**Source: 17J0489-01**		Prepared & Analyzed: 10/17/2017						
1,1,1,2-Tetrachloroethane	50.1 ug/L	0.4	ug/L	50.0	<0.4 ug/L	100	80-130			
1,1,1-Trichloroethane	44.7 ug/L	1	ug/L	50.0	<1 ug/L	89.5	65-130			
1,1,2,2-Tetrachloroethane	49.9 ug/L	0.4	ug/L	50.0	<0.4 ug/L	99.7	65-130			
1,1,2-Trichloroethane	49.8 ug/L	1	ug/L	50.0	<1 ug/L	99.7	75-125			
1,1-Dichloroethane	49.4 ug/L	1	ug/L	50.0	<1 ug/L	98.9	70-135			
1,1-Dichloroethylene	48.6 ug/L	1	ug/L	50.0	<1 ug/L	97.3	70-130			
1,1-Dichloropropene	46.7 ug/L	1	ug/L	50.0	<1 ug/L	93.3	75-135			
1,2,3-Trichlorobenzene	57.1 ug/L	1	ug/L	50.0	<1 ug/L	114	55-140			
1,2,3-Trichloropropane	50.9 ug/L	1	ug/L	50.0	<1 ug/L	102	75-125			
1,2,4-Trichlorobenzene	59.8 ug/L	1	ug/L	50.0	<1 ug/L	119	65-135			
1,2,4-Trimethylbenzene	55.7 ug/L	1	ug/L	50.0	<1 ug/L	111	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	59.9 ug/L	4	ug/L	50.0	<4 ug/L	120	50-130			
1,2-Dibromoethane (EDB)	54.0 ug/L	1	ug/L	50.0	<1 ug/L	108	80-120			
1,2-Dichlorobenzene	55.9 ug/L	1	ug/L	50.0	<1 ug/L	112	70-120			
1,2-Dichloroethane	44.6 ug/L	1	ug/L	50.0	<1 ug/L	89.2	70-130			
1,2-Dichloropropane	46.5 ug/L	1	ug/L	50.0	<1 ug/L	93.0	75-125			
1,3,5-Trimethylbenzene	60.3 ug/L	1	ug/L	50.0	<1 ug/L	121	75-125			
1,3-Dichlorobenzene	56.4 ug/L	1	ug/L	50.0	<1 ug/L	113	75-125			
1,3-Dichloropropane	48.4 ug/L	1	ug/L	50.0	<1 ug/L	96.7	75-125			
1,4-Dichlorobenzene	52.9 ug/L	1	ug/L	50.0	<1 ug/L	106	75-125			
2,2-Dichloropropane	45.7 ug/L	2	ug/L	50.0	<2 ug/L	91.4	70-135			
2-Butanone (MEK)	48.2 ug/L	10	ug/L	50.0	<10 ug/L	96.4	30-150			
2-Chlorotoluene	57.0 ug/L	1	ug/L	50.0	<1 ug/L	114	75-125			
2-Hexanone (MBK)	50.2 ug/L	5	ug/L	50.0	<5 ug/L	100	55-130			
4-Chlorotoluene	57.0 ug/L	1	ug/L	50.0	<1 ug/L	114	75-130			
4-Isopropyltoluene	58.6 ug/L	1	ug/L	50.0	<1 ug/L	117	75-130			
4-Methyl-2-pentanone (MIBK)	45.7 ug/L	5	ug/L	50.0	<5 ug/L	91.4	60-135			
Acetone	46.6 ug/L	10	ug/L	50.0	<10 ug/L	93.2	40-140			
Benzene	48.5 ug/L	1	ug/L	50.0	<1 ug/L	96.9	80-120			
Bromobenzene	53.9 ug/L	1	ug/L	50.0	<1 ug/L	108	75-125			
Bromochloromethane	46.6 ug/L	1	ug/L	50.0	<1 ug/L	93.3	65-130			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0516 - SW5030B										
Matrix Spike (BAJ0516-MS1)		**Source: 17J0489-01**		Prepared & Analyzed: 10/17/2017						
Bromodichloromethane	47.3 ug/L	0.5	ug/L	50.0	<0.5 ug/L	94.6	75-120			
Bromoform	50.4 ug/L	1	ug/L	50.0	<1 ug/L	101	70-130			
Bromomethane	42.3 ug/L	1	ug/L	50.0	<1 ug/L	84.6	30-145			
Carbon disulfide	41.0 ug/L	10	ug/L	50.0	<10 ug/L	81.6	35-160			
Carbon tetrachloride	46.9 ug/L	1	ug/L	50.0	<1 ug/L	93.7	65-140			
Chlorobenzene	51.2 ug/L	1	ug/L	50.0	<1 ug/L	102	80-120			
Chloroethane	44.7 ug/L	1	ug/L	50.0	<1 ug/L	89.4	60-135			
Chloroform	41.8 ug/L	0.5	ug/L	50.0	<0.5 ug/L	83.7	65-135			
Chloromethane	38.1 ug/L	1	ug/L	50.0	<1 ug/L	76.1	40-125			
cis-1,2-Dichloroethylene	45.5 ug/L	1	ug/L	50.0	<1 ug/L	91.0	70-125			
cis-1,3-Dichloropropene	49.5 ug/L	1	ug/L	50.0	<1 ug/L	99.0	70-130			
Dibromochloromethane	49.3 ug/L	1	ug/L	50.0	<1 ug/L	98.7	60-135			
Dibromomethane	49.5 ug/L	1	ug/L	50.0	<1 ug/L	99.0	75-125			
Dichlorodifluoromethane	33.5 ug/L	1	ug/L	50.0	<1 ug/L	67.1	30-155			
Ethylbenzene	51.4 ug/L	1	ug/L	50.0	<1 ug/L	103	75-125			
Hexachlorobutadiene	55.4 ug/L	1	ug/L	50.0	<1 ug/L	110	50-140			
Isopropylbenzene	56.4 ug/L	1	ug/L	50.0	<1 ug/L	113	75-125			
m+p-Xylenes	106 ug/L	2	ug/L	100	<2 ug/L	105	75-130			
Methylene chloride	48.5 ug/L	4	ug/L	50.0	<4 ug/L	96.3	55-140			
Methyl-t-butyl ether (MTBE)	49.1 ug/L	1	ug/L	50.0	<1 ug/L	98.3	65-125			
Naphthalene	62.6 ug/L	1	ug/L	50.0	<1 ug/L	124	55-140			
n-Butylbenzene	62.2 ug/L	1	ug/L	50.0	<1 ug/L	124	70-135			
n-Propylbenzene	58.5 ug/L	1	ug/L	50.0	<1 ug/L	117	70-130			
o-Xylene	53.6 ug/L	1	ug/L	50.0	<1 ug/L	107	80-120			
sec-Butylbenzene	59.4 ug/L	1	ug/L	50.0	<1 ug/L	119	70-125			
Styrene	52.3 ug/L	1	ug/L	50.0	<1 ug/L	105	65-135			
tert-Butylbenzene	59.9 ug/L	1	ug/L	50.0	<1 ug/L	120	70-130			
Tetrachloroethylene (PCE)	70.5 ug/L	1	ug/L	50.0	<1 ug/L	141	45-150			
Toluene	46.2 ug/L	1	ug/L	50.0	<1 ug/L	92.0	75-120			
trans-1,2-Dichloroethylene	46.6 ug/L	1	ug/L	50.0	<1 ug/L	93.3	60-140			
trans-1,3-Dichloropropene	43.6 ug/L	1	ug/L	50.0	<1 ug/L	87.2	55-140			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0516 - SW5030B										
Matrix Spike (BAJ0516-MS1)	**Source: 17J0489-01**			Prepared & Analyzed: 10/17/2017						
Trichloroethylene	48.0 ug/L	1	ug/L	50.0	<1 ug/L	95.9	70-125			
Trichlorofluoromethane	40.3 ug/L	1	ug/L	50.0	<1 ug/L	80.5	60-145			
Vinyl chloride	38.1 ug/L	0.5	ug/L	50.0	<0.5 ug/L	76.1	50-145			
Surr: 1,2-Dichloroethane-d4 (Surr)	951		ug/L	1000	ug/L	95.1	70-120			
Surr: 4-Bromofluorobenzene (Surr)	1010		ug/L	1000	ug/L	101	75-120			
Surr: Dibromofluoromethane (Surr)	929		ug/L	1000	ug/L	92.9	80-119			
Surr: Toluene-d8 (Surr)	975		ug/L	1000	ug/L	97.5	85-120			
Matrix Spike Dup (BAJ0516-MSD1)	**Source: 17J0489-01**			Prepared & Analyzed: 10/17/2017						
1,1,1,2-Tetrachloroethane	50.7 ug/L	0.4	ug/L	50.0	<0.4 ug/L	101	80-130	1.27	30	
1,1,1-Trichloroethane	44.5 ug/L	1	ug/L	50.0	<1 ug/L	89.1	65-130	0.470	30	
1,1,2,2-Tetrachloroethane	48.3 ug/L	0.4	ug/L	50.0	<0.4 ug/L	96.6	65-130	3.24	30	
1,1,2-Trichloroethane	47.4 ug/L	1	ug/L	50.0	<1 ug/L	94.8	75-125	4.96	30	
1,1-Dichloroethane	50.2 ug/L	1	ug/L	50.0	<1 ug/L	100	70-135	1.47	30	
1,1-Dichloroethylene	48.5 ug/L	1	ug/L	50.0	<1 ug/L	97.1	70-130	0.206	30	
1,1-Dichloropropene	46.9 ug/L	1	ug/L	50.0	<1 ug/L	93.7	75-135	0.449	30	
1,2,3-Trichlorobenzene	55.5 ug/L	1	ug/L	50.0	<1 ug/L	110	55-140	2.93	30	
1,2,3-Trichloropropane	49.4 ug/L	1	ug/L	50.0	<1 ug/L	98.7	75-125	3.11	30	
1,2,4-Trichlorobenzene	57.2 ug/L	1	ug/L	50.0	<1 ug/L	114	65-135	4.32	30	
1,2,4-Trimethylbenzene	56.0 ug/L	1	ug/L	50.0	<1 ug/L	112	75-130	0.591	30	
1,2-Dibromo-3-chloropropane (DBCP)	56.6 ug/L	4	ug/L	50.0	<4 ug/L	113	50-130	5.65	30	
1,2-Dibromoethane (EDB)	51.8 ug/L	1	ug/L	50.0	<1 ug/L	104	80-120	4.25	30	
1,2-Dichlorobenzene	54.7 ug/L	1	ug/L	50.0	<1 ug/L	109	70-120	2.08	30	
1,2-Dichloroethane	43.1 ug/L	1	ug/L	50.0	<1 ug/L	86.1	70-130	3.47	30	
1,2-Dichloropropane	47.2 ug/L	1	ug/L	50.0	<1 ug/L	94.4	75-125	1.45	30	
1,3,5-Trimethylbenzene	59.8 ug/L	1	ug/L	50.0	<1 ug/L	120	75-125	0.733	30	
1,3-Dichlorobenzene	56.6 ug/L	1	ug/L	50.0	<1 ug/L	113	75-125	0.443	30	
1,3-Dichloropropane	46.4 ug/L	1	ug/L	50.0	<1 ug/L	92.9	75-125	4.03	30	
1,4-Dichlorobenzene	53.0 ug/L	1	ug/L	50.0	<1 ug/L	106	75-125	0.151	30	
2,2-Dichloropropane	46.2 ug/L	2	ug/L	50.0	<2 ug/L	92.5	70-135	1.17	30	
2-Butanone (MEK)	44.0 ug/L	10	ug/L	50.0	<10 ug/L	88.0	30-150		30	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0516 - SW5030B										
Matrix Spike Dup (BAJ0516-MSD1)		**Source: 17J0489-01**		Prepared & Analyzed: 10/17/2017						
2-Chlorotoluene	58.8 ug/L	1	ug/L	50.0	<1 ug/L	118	75-125	3.15	30	
2-Hexanone (MBK)	51.5 ug/L	5	ug/L	50.0	<5 ug/L	103	55-130		30	
4-Chlorotoluene	58.1 ug/L	1	ug/L	50.0	<1 ug/L	116	75-130	2.02	30	
4-Isopropyltoluene	59.3 ug/L	1	ug/L	50.0	<1 ug/L	118	75-130	1.09	30	
4-Methyl-2-pentanone (MIBK)	45.4 ug/L	5	ug/L	50.0	<5 ug/L	90.9	60-135		30	
Acetone	47.4 ug/L	10	ug/L	50.0	<10 ug/L	94.7	40-140		30	
Benzene	48.4 ug/L	1	ug/L	50.0	<1 ug/L	96.8	80-120	0.145	30	
Bromobenzene	52.5 ug/L	1	ug/L	50.0	<1 ug/L	105	75-125	2.54	30	
Bromochloromethane	44.3 ug/L	1	ug/L	50.0	<1 ug/L	88.6	65-130	5.17	30	
Bromodichloromethane	47.5 ug/L	0.5	ug/L	50.0	<0.5 ug/L	95.1	75-120	0.485	30	
Bromoform	48.2 ug/L	1	ug/L	50.0	<1 ug/L	96.5	70-130	4.44	30	
Bromomethane	41.5 ug/L	1	ug/L	50.0	<1 ug/L	83.0	30-145	1.91	30	
Carbon disulfide	41.0 ug/L	10	ug/L	50.0	<10 ug/L	81.5	35-160	0.0731	30	
Carbon tetrachloride	47.1 ug/L	1	ug/L	50.0	<1 ug/L	94.2	65-140	0.511	30	
Chlorobenzene	52.0 ug/L	1	ug/L	50.0	<1 ug/L	104	80-120	1.43	30	
Chloroethane	44.1 ug/L	1	ug/L	50.0	<1 ug/L	88.2	60-135	1.33	30	
Chloroform	42.0 ug/L	0.5	ug/L	50.0	<0.5 ug/L	84.0	65-135	0.453	30	
Chloromethane	36.4 ug/L	1	ug/L	50.0	<1 ug/L	72.9	40-125	4.38	30	
cis-1,2-Dichloroethylene	45.0 ug/L	1	ug/L	50.0	<1 ug/L	90.1	70-125	0.994	30	
cis-1,3-Dichloropropene	48.6 ug/L	1	ug/L	50.0	<1 ug/L	97.2	70-130	1.83	30	
Dibromochloromethane	47.6 ug/L	1	ug/L	50.0	<1 ug/L	95.2	60-135	3.53	30	
Dibromomethane	46.9 ug/L	1	ug/L	50.0	<1 ug/L	93.9	75-125	5.33	30	
Dichlorodifluoromethane	32.0 ug/L	1	ug/L	50.0	<1 ug/L	64.0	30-155	4.70	30	
Ethylbenzene	52.3 ug/L	1	ug/L	50.0	<1 ug/L	105	75-125	1.79	30	
Hexachlorobutadiene	55.0 ug/L	1	ug/L	50.0	<1 ug/L	109	50-140	0.778	30	
Isopropylbenzene	56.9 ug/L	1	ug/L	50.0	<1 ug/L	114	75-125	1.04	30	
m+p-Xylenes	108 ug/L	2	ug/L	100	<2 ug/L	107	75-130	1.68	30	
Methylene chloride	48.2 ug/L	4	ug/L	50.0	<4 ug/L	95.8	55-140	0.579	30	
Methyl-t-butyl ether (MTBE)	48.0 ug/L	1	ug/L	50.0	<1 ug/L	96.0	65-125	2.37	30	
Naphthalene	59.0 ug/L	1	ug/L	50.0	<1 ug/L	117	55-140	5.99	30	
n-Butylbenzene	62.6 ug/L	1	ug/L	50.0	<1 ug/L	125	70-135	0.689	30	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Volatile Organic Compounds by GCMS - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0516 - SW5030B										
Matrix Spike Dup (BAJ0516-MSD1)		**Source: 17J0489-01**		Prepared & Analyzed: 10/17/2017						
n-Propylbenzene	58.5 ug/L	1	ug/L	50.0	<1 ug/L	117	70-130	0.00	30	
o-Xylene	54.0 ug/L	1	ug/L	50.0	<1 ug/L	108	80-120	0.688	30	
sec-Butylbenzene	59.6 ug/L	1	ug/L	50.0	<1 ug/L	119	70-125	0.286	30	
Styrene	52.1 ug/L	1	ug/L	50.0	<1 ug/L	104	65-135	0.402	30	
tert-Butylbenzene	60.9 ug/L	1	ug/L	50.0	<1 ug/L	122	70-130	1.62	30	
Tetrachloroethylene (PCE)	71.7 ug/L	1	ug/L	50.0	<1 ug/L	143	45-150	1.67	30	
Toluene	46.0 ug/L	1	ug/L	50.0	<1 ug/L	91.7	75-120	0.325	30	
trans-1,2-Dichloroethylene	47.6 ug/L	1	ug/L	50.0	<1 ug/L	95.1	60-140	2.00	30	
trans-1,3-Dichloropropene	42.6 ug/L	1	ug/L	50.0	<1 ug/L	85.2	55-140	2.34	30	
Trichloroethylene	47.8 ug/L	1	ug/L	50.0	<1 ug/L	95.6	70-125	0.334	30	
Trichlorofluoromethane	39.6 ug/L	1	ug/L	50.0	<1 ug/L	79.2	60-145	1.70	30	
Vinyl chloride	36.4 ug/L	0.5	ug/L	50.0	<0.5 ug/L	72.8	50-145	4.51	30	
Surr: 1,2-Dichloroethane-d4 (Surr)	940		ug/L	1000	ug/L	94.0	70-120			
Surr: 4-Bromofluorobenzene (Surr)	1010		ug/L	1000	ug/L	101	75-120			
Surr: Dibromofluoromethane (Surr)	935		ug/L	1000	ug/L	93.5	80-119			
Surr: Toluene-d8 (Surr)	982		ug/L	1000	ug/L	98.2	85-120			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Micro-extractables by GC/ECD - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0494 - SW8011										
Blank (BAJ0494-BLK1)				Prepared: 10/17/2017 Analyzed: 10/19/2017						
1,2-Dibromoethane (EDB)	<0.010 ug/L	0.010	ug/L							
LCS (BAJ0494-BS1)				Prepared: 10/17/2017 Analyzed: 10/19/2017						
1,2-Dibromoethane (EDB)	0.257 ug/L	0.010	ug/L	0.250 ug/L		103	65-135			
LCS Dup (BAJ0494-BSD1)				Prepared: 10/17/2017 Analyzed: 10/19/2017						
1,2-Dibromoethane (EDB)	0.322 ug/L	0.010	ug/L	0.250 ug/L		129	65-135	22.4	20	P
Matrix Spike (BAJ0494-MS1)		**Source: 17J0486-18**		Prepared: 10/17/2017 Analyzed: 10/19/2017						
1,2-Dibromoethane (EDB)	0.135 ug/L	0.010	ug/L	0.245	<0.010 ug/L	54.8	65-135			M
Matrix Spike Dup (BAJ0494-MSD1)		**Source: 17J0486-18**		Prepared: 10/17/2017 Analyzed: 10/19/2017						
1,2-Dibromoethane (EDB)	0.153 ug/L	0.010	ug/L	0.248	<0.010 ug/L	61.5	65-135	12.6	20	M
Batch BAJ0496 - SW8011										
Blank (BAJ0496-BLK1)				Prepared: 10/17/2017 Analyzed: 10/19/2017						
1,2-Dibromoethane (EDB)	<0.010 ug/L	0.010	ug/L							
LCS (BAJ0496-BS1)				Prepared: 10/17/2017 Analyzed: 10/20/2017						
1,2-Dibromoethane (EDB)	0.237 ug/L	0.010	ug/L	0.250 ug/L		94.9	65-135			
LCS Dup (BAJ0496-BSD1)				Prepared: 10/17/2017 Analyzed: 10/20/2017						
1,2-Dibromoethane (EDB)	0.309 ug/L	0.010	ug/L	0.250 ug/L		123	65-135	26.2	20	P
Duplicate (BAJ0496-DUP1)		**Source: 17J0515-02**		Prepared: 10/17/2017 Analyzed: 10/20/2017						
1,2-Dibromoethane (EDB)	<0.010 ug/L	0.010	ug/L		<0.010 ug/L			NA	20	

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Micro-extractables by GC/ECD - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BAJ0496 - SW8011										
Matrix Spike (BAJ0496-MS1)		**Source: 17J0515-03**		Prepared: 10/17/2017 Analyzed: 10/20/2017						
1,2-Dibromoethane (EDB)	0.172 ug/L	0.010	ug/L	0.253	<0.010 ug/L	67.9	65-135			

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
SW8011 in Non-Potable Water	
1,2-Dibromoethane (EDB)	VELAP,NC
SW8015C in Non-Potable Water	
TPH-Volatiles (GRO)	VELAP,NC,WVDEP
SW8260B in Non-Potable Water	
1,1,1,2-Tetrachloroethane	NC,VELAP,WVDEP
1,1,1-Trichloroethane	NC,VELAP,WVDEP
1,1,2,2-Tetrachloroethane	NC,VELAP,WVDEP
1,1,2-Trichloroethane	NC,VELAP,WVDEP
1,1-Dichloroethane	NC,VELAP,WVDEP
1,1-Dichloroethylene	NC,VELAP,WVDEP
1,1-Dichloropropene	NC,VELAP,WVDEP
1,2,3-Trichlorobenzene	NC,VELAP,WVDEP
1,2,3-Trichloropropane	NC,VELAP,WVDEP
1,2,4-Trichlorobenzene	NC,VELAP,WVDEP
1,2,4-Trimethylbenzene	NC,VELAP,WVDEP
1,2-Dibromo-3-chloropropane (DBCP)	NC,VELAP,WVDEP
1,2-Dibromoethane (EDB)	NC,VELAP,WVDEP
1,2-Dichlorobenzene	NC,VELAP,WVDEP
1,2-Dichloroethane	NC,VELAP,WVDEP
1,2-Dichloropropane	NC,VELAP,WVDEP
1,3,5-Trimethylbenzene	NC,WVDEP
1,3-Dichlorobenzene	NC,VELAP,WVDEP
1,3-Dichloropropane	NC,VELAP,WVDEP
1,4-Dichlorobenzene	NC,VELAP,WVDEP
2,2-Dichloropropane	NC,VELAP,WVDEP
2-Butanone (MEK)	NC,VELAP,WVDEP
2-Chlorotoluene	NC,VELAP,WVDEP
2-Hexanone (MBK)	NC,VELAP,WVDEP
4-Chlorotoluene	NC,VELAP,WVDEP
4-Isopropyltoluene	NC,VELAP,WVDEP
4-Methyl-2-pentanone (MIBK)	NC,VELAP,WVDEP
Acetone	NC,VELAP,WVDEP
Benzene	NC,VELAP,WVDEP
Bromobenzene	NC,VELAP,WVDEP
Bromochloromethane	NC,VELAP,WVDEP
Bromodichloromethane	NC,VELAP,WVDEP

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
Bromoform	NC,VELAP,WVDEP
Bromomethane	NC,VELAP,WVDEP
Carbon disulfide	NC,VELAP,WVDEP
Carbon tetrachloride	NC,VELAP,WVDEP
Chlorobenzene	NC,VELAP,WVDEP
Chloroethane	NC,VELAP,WVDEP
Chloroform	NC,VELAP,WVDEP
Chloromethane	NC,VELAP,WVDEP
cis-1,2-Dichloroethylene	NC,VELAP,WVDEP
cis-1,3-Dichloropropene	NC,VELAP,WVDEP
Dibromochloromethane	NC,VELAP,WVDEP
Dibromomethane	NC,VELAP,WVDEP
Dichlorodifluoromethane	NC,VELAP,WVDEP
Di-isopropyl ether (DIPE)	NC,VELAP,WVDEP
Ethylbenzene	NC,VELAP,WVDEP
Hexachlorobutadiene	NC,VELAP,WVDEP
Iodomethane	NC,VELAP,WVDEP
Isopropylbenzene	NC,VELAP,WVDEP
m+p-Xylenes	NC,VELAP,WVDEP
Methylene chloride	NC,VELAP,WVDEP
Methyl-t-butyl ether (MTBE)	NC,VELAP,WVDEP
Naphthalene	NC,VELAP,WVDEP
n-Butylbenzene	NC,VELAP,WVDEP
n-Propylbenzene	NC,VELAP,WVDEP
o-Xylene	NC,VELAP,WVDEP
sec-Butylbenzene	NC,VELAP,WVDEP
Styrene	NC,VELAP,WVDEP
tert-Butylbenzene	NC,VELAP,WVDEP
Tetrachloroethylene (PCE)	NC,VELAP,WVDEP
Toluene	NC,VELAP,WVDEP
trans-1,2-Dichloroethylene	NC,VELAP,WVDEP
trans-1,3-Dichloropropene	NC,VELAP,WVDEP
Trichloroethylene	NC,VELAP,WVDEP
Trichlorofluoromethane	NC,VELAP,WVDEP
Vinyl acetate	NC,VELAP,WVDEP
Vinyl chloride	NC,VELAP,WVDEP
Xylenes, Total	NC,VELAP,WVDEP

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Code	Description	Lab Number	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2017
NC	North Carolina DENR	495	12/31/2017
PADEP	NELAC-Pennsylvania	001	10/31/2017
VELAP	NELAC-Virginia Certificate #9439	460021	06/14/2018
WVDEP	West Virginia DEP	350	11/30/2017

1941 Reymet Road ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Client Name:	APEX Companies, LLC. -Richmond 203 Wylderose Court Midlothian VA, 23113	Date Issued:	10/20/2017 14:58
Submitted To:	Mark Ryland	Project Number:	757004-001
Client Site I.D.:	Old Oaks Neighborhood	Purchase Order:	

Summary of Data Qualifiers

M	Matrix spike recovery is outside established acceptance limits
P	Duplicate analysis does not meet the acceptance criteria for precision
S	Surrogate recovery was outside acceptance criteria
RPD	Relative Percent Difference
Qual	Qualifers
-RE	Denotes sample was re-analyzed
D.F.	Dilution Factor. Please also see the Preparation Factor in the Analysis Summary section.
TIC	Tentatively Identified Compounds are compounds that are identified by comparing the analyte mass spectral pattern with the NIST spectral library . A TIC spectral match is reported when the pattern is at least 75% consistent with the published pattern. Compound concentrations are estimated and are calculated using an internal standard response factor of 1.
PCBs, Total	Total PCBs are defined as the sum of detected Aroclors 1016, 1221, 1232, 1248, 1254, 1260, 1262, and 1268.

APEX

Apex Companies, LLC
203 Wylderose Court
Midlothian, VA 23113
(804) 897-2718

CHAIN OF CUSTODY RECORD

JOB NO.: 757004-001
JOB NAME: Old Oaks Neighborhood
PROJECT MANAGER: MARK Ryland
SAMPLER(S): (Signature(s)) Trey Ousterhout, Richard Jones
(Printed) Trey Ousterhout, Richard Jones
TURN – AROUND TIME: STD

SAMPLE ID	DATE	TIME	COMP.	GRAB	MATRIX	PRES.	STATION / LOCATION	NO. OF CONTAINERS	VOCS 8260	EDB 8011	TPH 8015						REMARKS
92717001-1	9.27.17	1550		X	W	4°C HCl	Trip Blank	4	X	X	X						
10131700 1-2	10.13.17	1305		X	W	4°C HCl	Rinsate Blank	7	X	X	X						
10131700 1-3	10.13.17	1455		X	W	4°C HCl	MW-2	7	X	X	X						
10131700 1-4	10.13.17	1510		X	W	4°C HCl	MW-6	7	X	X	X						
10131700 1-5	10.13.17	1430		X	W	4°C HCl	MW-5	7	X	X	X						
10131700 1-6	10.13.17	1405		X	W	4°C HCl	MW-1	7	X	X	X						
10131700 1-7	10.13.17	1335		X	W	4°C HCl	MW-8	7	X	X	X						
10131700 1-8	10.13.17	1320		X	W	4°C HCl	MW-7	7	X	X	X						
10131700 1-9	10.13.17	1610		X	W	4°C HCl	MW-16	7	X	X	X						
10131700 1-10	10.13.17	1545		X	W	4°C HCl	MW-15	7	X	X	X						
10131700 1-11	10.13.17	1400		X	W	4°C HCl	MW-9	7	X	X	X						no Seal
10131700 1-12	10.13.17	1600		X	W	4°C HCl	MW-3	7	X	X	X						on Ice
							TOTALS	81	12	12	12						4.5°C

APEX-Richmond 17J0495
Old Oaks Neighborhood
Recd: 10/16/2017 Due: 10/23/2017
v130325002

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
① Trey Ousterhout	10/16/17 1012	② SLong 16OCT2017 1012	③		④
(Printed) Trey Ousterhout		(Printed) SLONG	(Printed)		(Printed)
Relinquished by: (Signature) ⑤	Date/Time	Received by: (Signature) ⑥	Remarks: DEQ STATE Lead		
(Printed)		(Printed)			

Distribution: WHITE => original (accompanies samples; returned with results) : YELLOW => laboratory copy : PINK => sampler's copy

1 of 2 pages

APEX

Apex Companies, LLC
203 Wylderose Court
Midlothian, VA 23113
(804) 897-2718

CHAIN OF CUSTODY RECORD

JOB NO.: 75700H-001
JOB NAME: Old Oaks Neighborhood
PROJECT MANAGER: Mark Ryland
SAMPLER(S): (Signature(s)) Trey Oosterhout, Richard Jones
(Printed) Trey Oosterhout, Richard Jones
TURN – AROUND TIME: STD

SAMPLE ID	DATE	TIME	COMP.	GRAB	MATRIX	PRES.	STATION / LOCATION	NO. OF CONTAINERS	VOCS 8260	EDB 8011	TPH GRO 8015						REMARKS
10131700) -13	10.13.17	1425		X	W	4°C HCl	MW-4	7	X	X	X						
10131700) -14	10.13.17	1500		X	W	4°C HCl	MW-11	7	X	X	X						
10131700) -15	10.13.17	1530		X	W	4°C HCl	MW-10	7	X	X	X						
10131700) -16	10.13.17	1440		X	W	4°C HCl	MW-13	7	X	X	X						
10131700) -17	10.13.17	1545		X	W	4°C HCl	MW-12	7	X	X	X						
10131700) -18	10.13.17	1520		X	W	4°C HCl	MW-14	7	X	X	X						
																	NO Seal
																	ON Ice
							TOTALS	42	6	6	6						4.5°C.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)
① Trey Oosterhout (Printed) Trey Oosterhout	10/16/17 1012	② SLong 16 OCT 2017 (Printed) SLONG 1012	③ (Printed)
Relinquished by: (Signature) ⑤ (Printed)	Date/Time	Received by: (Signature) ⑥ (Printed)	Remarks DEQ STATE Lead

APEX-Richmond 17J0495
Old Oaks Neighborhood
Recd: 10/16/2017 Due: 10/23/2017
v130325002

Distribution: WHITE => original (accompanies samples; returned with results) : YELLOW => laboratory copy : PINK => sampler's copy

2 of 2 pages

Appendix C

Liquids Disposal Manifests

WORK ORDER
Bill of Lading
51877

Atlantic Industrial Services, Inc.

13331 Ramblewood Drive
Chester, Virginia 23836

Emergency Contact (24 HR)
Telephone: (804) 748-9208

EPA I.D. Number
VAD 980555577
Transporter Number
VAD 9805555776

301

TO: Apex Companies

ADDRESS: 203 Wylderose Ct Midlothian VA

JOBSITE: 1537 River Road West Crozier VA

Date: 9/7/17 Pre/Post Job Briefing ☐ Purchase Order No. _____

Truck Charge ..... $ _____

Gallonage Charge 123 at _____ per gallon $ _____

Pump oily water from $ _____

monitor wells + pump $ _____

drum $ _____

$ _____

$ _____

I.D. Number:	NA 1270
Shipping Name:	Petroleum Oil
Hazard Class:	3
PGK Group:	III
I.D. Number:	
Shipping Name:	
Hazard Class:	
PGK Group:	
Total Charge	$

Received from _____ Received by _____