CORRECTIVE ACTION PLAN

Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia
VADEQ PC # 2010-3028

November 22, 2013

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VADEQ PC # 2010-3028

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1.0 INTRODUCTION

This Corrective Action Plan (CAP) is provided to the Virginia Department of Environmental Quality (VADEQ) Petroleum Storage Tank Program by Kleinfelder East, Inc. (Kleinfelder) on behalf of Fairfax Petroleum Realty, LLC (Fairfax). The CAP is provided as requested by the VADEQ in a letter dated July 20, 2011 (**Appendix A**). Kleinfelder, on behalf of Fairfax, has been in regular contact with the VADEQ regarding the submission of the CAP to accommodate additional investigation activities associated with Inactive Fairfax Facility #26140 (Site). A draft CAP was submitted to the VADEQ on September 27, 2013. The VADEQ in a letter dated November 1, 2013 provided a list of items to be incorporated into this report based upon the VADEQ review and discussions with Kleinfelder and the Great Falls Citizens Association (GFCA) (**Appendix A**). A follow up meeting between the GFCA, VADEQ, Fairfax, and Kleinfelder was held on November 12, 2013 to discuss the content of the November 1, 2013 VADEQ letter. The report documents the methods and results of additional investigation activities, provides a Site Conceptual Model (SCM) and risk assessment, a description of the proposed corrective action, and recommendations. The investigation activities and CAP were completed in general accordance with the VADEQ Storage Tank Technical Manual (Guidance Document 01-2024D) and the requirements of the VADEQ letters dated December 10, 2009, July 20, 2011, and November 1, 2013.

The VADEQ assigned pollution complaint (PC) number 2010-3028 in August 2009 following the identification of dissolved phase hydrocarbons and fuel oxygenates during a Phase II Environmental Site Assessment (ESA) by Exxon Mobil Corporation (ExxonMobil). Previous potable well sampling and environmental investigations by others have identified the presence of chlorinated ethenes, including tetrachlorethylene (PCE), trichloroethylene (TCE), and cis-1,2 dichloroethylene (DCE), in the groundwater of Great Falls dating back to 1992. Chlorinated ethenes have been identified in shallow and deep monitoring wells on and off-site and in off-site potable wells. The presence of the chlorinated ethenes in groundwater has been attributed to unknown sources and a known dry cleaner release from the Great Falls Center. This CAP was prepared solely to satisfy the requirements of the VADEQ Petroleum Storage Tanks Program for petroleum constituents including methyl tertiary butyl ether (MTBE).

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The structure of the report is described below.

- **Section 2.0 – Site Assessment Summary**

  This section provides a summary of the Site, area, potential receptors, activities completed, off-site access efforts and the alternative water supply program.
- **Section 3.0 – Geology and Hydrogeology**

  A brief summary of site setting, topography, geology and hydrogeology is presented in this section. New findings specific to the additional investigation activities completed are discussed in **Sections 5.0** and **6.0**.
- **Section 4.0 – Supplemental Investigation Activities and Methods**

  This section describes activities which were completed as part of the CAP development. Certain results and findings are briefly described in this section, but overall investigative results are presented in **Section 5.0** of this report.
- **Section 5.0 – Investigation Results**

  The results and findings of the investigation are presented in this section.
- **Section 6.0 – Site Conceptual Model**

  This section provides a description of the SCM for the Site. The component parts are presented and described throughout the document.
- **Section 7.0 – Risk Assessment**

  This section provides an updated risk assessment for the Site and potential receptors in the vicinity of the Site.
- **Section 8.0 – Remediation Assessment**

  This section provides the remediation alternatives analysis.
- **Section 9.0 – Proposed Corrective Action Plan Summary**

  This section provides a description of the proposed CAP remediation plans.
- **Section 10.0 – Proposed Remediation Endpoints**

  This section provides the proposed remediation endpoints.
- **Section 11.0 – Post Operational Monitoring Schedule**

  The post operational monitoring schedule is presented in this section.
- **Section 12.0 – Project Costs to Achieve Endpoints**

  The estimated costs to achieve the remediation endpoints are presented in this section.
- **Section 13.0 – Estimated Timeframe to Achieve Endpoints**

  The estimated timeframe to achieve the proposed remediation endpoints is presented in this section.

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- **Section 14.0 – Public Notification**

  This section provides a summary of the public notification efforts.
- **Section 15.0 – Conclusions and Recommendations**

  Overall conclusions and recommendations for additional investigative activities are presented in this section.
- **Section 16.0 – CAP Implementation Schedule**

  The timeline for implementation of the CAP is presented in this section.
- **Section 17.0 – References**

  The references cited in this report are presented in this section.
- **Section 18.0 – Limitations**

  The limitations of this report are presented in this section.

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2.0 SITE ASSESSMENT SUMMARY

The following sections present a summary of the Site location and features and a summary of activities associated with PC# 2010-3028.

2.1 Site Description

The Site is an inactive retail service station located on the southwest corner of the intersection of Georgetown Pike and Walker Road at 9901 Georgetown Pike, Great Falls, Fairfax County, Virginia (**Figure 1**). The Site is approximately 27,430 square feet (0.63 acre) and is a single parcel (Legal Code 0131 01 0005A). The service station was constructed in 1969 and is developed with a station building with a convenience store and three service bays and a canopy. The Site is serviced by underground electric, telephone, and municipal water service. A potable well (PW-1), located in the northeastern corner of the Site, was removed from service in August 2009 and is now utilized as a monitoring well. A septic system is located behind the station building in the southern portion of the Site. The approximate locations of the Site features are depicted on **Figure 2**.

In August 2012, Fairfax contracted the removal of the underground storage tank (UST) system. The former UST system was reportedly installed in 1989 and upgraded in 1994. This former UST system consisted of four dispensers and the tank field contained one 12,000-gallon gasoline UST and two 10,000-gallon gasoline USTs. The USTs were constructed of single walled fiberglass and the product lines were GEOFLEX® doubled walled piping. The former UST system is depicted on **Figure 2**.

2.2 Area Description

The Site is located in an area containing commercial businesses and residential properties. A local area map is provided as **Figure 3** and is summarized below:

North: The Site is bordered to the north by Georgetown Pike followed by a commercial multi-tenant building consisting of a deli, convenience store and a dry cleaner. The Great Falls Professional Building is located to the northeast of the Site followed by the Leo Santabella Park.

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South: The Site is bordered to the south by the Great Falls Crossroads office building and to the southwest by the Great Falls Village Centre.

East: The Site is bordered to the east by Walker Road followed by an Exxon branded service station (former Shell station) and the Great Falls Shopping Center. The Shell station was rebranded to Exxon on September 6, 2013 and will be referenced in this report as the Shell station.

West: The Site is bordered to the west by commercial multi-tenant buildings and a bank branch.

Residential areas are located beyond the commercial businesses in all directions at distances of approximately 700 feet from the Site.

2.3 Potential Receptors

The following sections summarize the identification and description of potential receptors in the vicinity of the Site.

2.3.1 Surface Water

Based on the United States Geological Survey (USGS) topographic map for the Site area (Vienna, Virginia), the nearest surface body of water is an ephemeral or intermittent stream with headwaters represented by a storm water retention basin located approximately 600 feet south of the Site (**Figure 1**). This intermittent stream is discussed further in **Section 6.0**. Mine Run is located approximately 2,000 feet northwest of the Site and flows from west to east. Mine Run discharges into the Potomac River approximately 1.8 miles east of the Site (**Figure 1**).

2.3.2 Private Potable Wells

Many of the properties surrounding the Site are served by municipal water provided by Fairfax Water Authority; however, a number of properties utilize potable wells. According to the Fairfax County Department of Health, approximately 36 private supply wells are located within approximately one quarter of a mile radius of the Site. Further investigation and Fairfax Water Authority records indicate 22 properties use wells as a sole drinking water source. The approximate locations of the identified private potable wells and municipal water service area are depicted on **Figure 3**.

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2.3.3 Utilities and Subsurface Structures

The Site and surrounding areas are generally serviced with electric, telephone, natural gas, telecommunications, water and storm sewer services. Overhead utility lines are located on the south side of Georgetown Pike and east side of Walker Road. Municipal sanitary sewer services are not available in Great Falls and developed properties utilize septic systems. The approximate locations of the utilities are depicted on **Figure 2**.

The Great Falls Crossroads building located adjacent to and south of the Site contains a one-level below grade parking structure along Walker Road and an elevator in the center of the building. The parking area of the Great Falls Crossroads building is open to the atmosphere as entrance and exit doors contain grates. The property manager for the Great Falls Crossroads building was contacted regarding the presence of sumps in the parking structure. The property manager had no knowledge of the presence of sumps within the building. The readily accessible interior areas of the below grade parking structure of the Great Falls Crossroads building were inspected and no sumps were observed. The remaining structures within 500 feet of the Site are constructed slab on grade.

2.3.4 Public Use Areas

The Leo Santabella and Great Falls Grange Parks are located approximately 350 to 700 feet northeast of the Site. The Great Falls Public Library is located approximately 400 feet northeast of the Site. The Great Falls Elementary School is located approximately 1,365 feet to the northwest of the Site. The Great Falls Village Green Day School and Great Falls Swim and Tennis Club are located approximately 1,050 feet south and southeast of the Site, respectively. These public use areas are serviced with municipal water. The Great Falls Grange is located approximately 800 feet east of the Site and, according to Fairfax Water, is serviced with municipal water.

2.4 Summary of Activities to Date

The activities summarized in this section were reported to the VADEQ in the Phase II ESA (ERI, 2009), Site Characterization Report (GES, 2009), Remediation Feasibility Testing Report (GES, 2010) and Groundwater Monitoring Reports (Kleinfelder, 2010 – 2012). Monitoring well construction details are included in **Table 1** and the well locations are depicted on **Figure 2**.

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The boring and well construction logs are included as **Appendix B**. The soil analytical data is included in **Table 2** and the groundwater analytical data for the shallow and deep wells is included in **Tables 3** and **4**. The following provides a summary of significant environmental activities completed at the Site under the PC #2010-3028.

- In July, 2009, five soil borings were advanced at the Site as part of a Phase II ESA. Four of the borings were converted to shallow monitoring wells (MW-2 through MW-6) at the Site. Groundwater samples were collected from the monitoring wells and the on-site potable well and the results indicated the presence of volatile organic compounds (VOCs). Evidence of a release was reported to the VADEQ on August 11, 2009.

- On August 11, 2009, an alternative water supply (AWS) was provided to the Site and use of the potable well was discontinued. The Site was connected to the available municipal service from Fairfax Water Authority by ExxonMobil.

- From August 18 to 28, 2009, tightness and enhanced helium testing was completed on the UST system. All USTs tested were determined to be tight. Slight leaks were discovered in distribution equipment during the helium testing and repaired shortly thereafter. As reported in the SCR, there were no impacts to the soil as a result of the detected leaks.

- On August 26, 2009, a borehole geophysical survey was conducted on the former potable well PW-1.

- From September 11, 2009 to October 14, 2009, six shallow monitoring wells (MW-6s and MW-7 through MW-11) were installed at the Site. Monitoring well MW-10 was installed off-site at 746 Walker Road. A deep monitoring well (MW-6D) was installed on-site to a depth of 120 feet below grade.

- In October 2009, four soil vapor monitoring points (VP-1, VP-2S, VP-2D and VP-3) were installed and sampled at the Site. In addition, slug testing was conducted on select shallow monitoring wells.

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- In December 2009, remediation feasibility testing was conducted at the Site on monitoring wells in the vicinity of the tank field. The results of the testing were reported to the VADEQ in a Remediation Feasibility Testing Report dated February 2, 2010. During feasibility testing a series of five tests of 2 hour duration or less were performed on two different wells and the results are presented below.

    - Soil vapor extraction (SVE) testing performed was completed on wells MW-2 and MW-11 using ranges of applied vacuums and the maximum vacuum radius of influence observed were 35 feet and 43 feet for wells MW-2 and MW-11, respectively.

    - Groundwater extraction testing performed on monitoring well MW-11 produced an estimated sustainable flow rate of 0.2 gallons per minute (gpm). The addition of SVE while pumping was performed on MW-11 and the groundwater recovery rate increased to approximately 0.5 gpm. There was no reported significant influence related to drawdown observed in the surrounding wells during this short term test. The addition of pumping did increase the vacuum radius of influence to approximately 48 feet.

    - Total phase extraction (i.e. dual phase extraction (DPE)) testing was conducted on monitoring well MW-2 with a drop tube set to a depth of approximately 35 feet. There was no significant influence related to drawdown observed in the surrounding wells reported; however, an approximate 38 foot vacuum radius of influence was observed.

- On February 25, 2010, ownership of the property was transferred from ExxonMobil to Fairfax. The request to transfer environmental responsibility from ExxonMobil to Fairfax was submitted by Fairfax to the VADEQ on February 25, 2010.

- In January 2011, deep monitoring well MW-12 was installed off-site in Leo Santabella Park. This well was installed to satisfy the VADEQ requirement to install a deep well to the north / northeast of the Site.

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- From August 18, 2011 to November 22, 2011, three shallow monitoring wells (MW-13 through MW-15) were installed at the Site. A deep monitoring well (MW-16D) was installed to a depth of 150 feet below grade. Former potable well PW-1 was abandoned to a depth of 75 feet below top of casing to prevent the potential for downward migration in the borehole and to maintain the ability to sample the portion of the well where fracture(s) had been identified by borehole geophysics.

- In September 2011, feasibility testing was conducted at the Site in the vicinity of the tank field. Monitoring wells MW-11 and MW-15 were used as extraction wells during the testing. The feasibility testing methods and results are summarized in **Section 4.0** and **5.0**.

- In December 2011, borehole geophysical surveys were completed on deep wells MW-6D, MW-12 and MW-16D. The borehole geophysical methods and results are summarized in **Section 4.0** and **5.0**.

- On February 29, 2012, packer testing was completed on deep well MW-16D. The packer testing methods and results are summarized in **Section 4.0** and **5.0**.

- On April 20, 2012, deep monitoring well MW-16D was abandoned to a depth of 110 feet below top of casing.

- In August 2012, Fairfax contracted the removal of the UST system. Post excavation soil samples were collected for laboratory analysis and the sample locations are depicted on **Figure 4**. The soil analytical results are summarized in **Table 2** and the laboratory analytical report is included as **Appendix C**. The activities and results of the tank removal were documented in report prepared by Advanced Environmental Alternatives (AEA) for Fairfax dated September 13, 2012.

2.5 Off-Site Access Summary

At the direction of and in coordination with the VADEQ, Kleinfelder, on behalf of Fairfax, has attempted to negotiate access agreements to install additional monitoring wells for purposes of delineation. Access has been denied at multiple properties. A summary of off-site access efforts to complete the delineation of dissolved phase constituents is provided below:

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1. **Great Falls Professional Building, 737 Walker Road** – Access was requested to the owner of the Great Falls Professional Building to install a deep monitoring well to the north / northeast of the Site requested by the VADEQ. Following access negotiations and a site meeting with the property owner, the request for access was denied.
2. **Great Falls Crossroads Building, 746 Walker Road** – Access was granted for continued sampling of monitoring well MW-10. An amendment of the access agreement was sought to install the deep monitoring well to the southwest of the Site requested by the VADEQ. The amendment to the agreement was not executed by Fairfax due to the amount of the monetary compensation sought by the property owner.
3. **Bank of America Branch, 748 Walker Road** – Following unsuccessful attempt to obtain a favorable amendment to the access agreement with the owner of 746 Walker Road, access was sought to install the deep monitoring well to the south of the Site requested by the VADEQ at 748 Walker Road. The property owner was unresponsive to the request for access.
4. **Great Falls Center, 9820 Georgetown Pike** – Access was requested to the owner of the Great Falls Center to install the monitoring wells to the southeast of the Site requested by the VADEQ. The property owner denied the request for access without providing justification.
5. **Shell Service Station, 9829 Georgetown Pike** – Following denial of access to the Great Falls Center, Kleinfelder, on behalf of Fairfax, requested access to the Shell service station to install the shallow monitoring wells to the southeast of the Site requested by the VADEQ. Access to install wells was denied as the property is leased from the owner of the Great Falls Center. An access agreement was executed with the leasee to monitor and sample the existing shallow monitoring wells installed by others on the Shell station (W-1 through W-7 – **Figure 2**).
6. **Leo Santabella Park, 9830 Georgetown Pike** – Access was granted by the Fairfax County Board of Supervisors to install deep monitoring well MW-12 in Leo Santabella Park (**Figure 3**).
7. **Virginia Department of Transportation (VDOT) Right of Way** – After denial of access to install monitoring wells to the east / southeast of the Site, a Land Use Permit was obtained from VDOT in March 2013 to install off-site deep monitoring well MW-18D. Monitoring well MW-18D in the right of way at the southeast corner of the intersection of Georgetown Pike and Walker Road (**Figure 2**).

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2.6 Alternative Water Supply

As of November 3, 2009, 20 properties had had their potable wells sampled. Of the remaining properties two refused sampling and 14 verified that they were connected to a public water supply. Of the 20 properties sampled initially in 2009, six were determined to have an estimated concentration (i.e. J qualifier) of a petroleum constituent above the method detection limit (MDL) but below the limit of quantitation (LOQ) of 1 microgram per liter (µg/L). All subsequent additional sampling related to these properties has been performed by the VADEQ AWS program and the analytical results indicate that petroleum constituents including MTBE have not been detected above the laboratory reporting limits. Historical analytical data provided by the VADEQ for properties at which sampling has been conducted is summarized in a table in **Appendix D**. Laboratory analytical reports from the most recent sampling conducted in 2013 are also included within **Appendix D**.

In letters dated February 25, 2011, the VADEQ informed four property owners of a request to discontinue the supply of bottled water. The request for discontinuation of bottled water was proposed as no petroleum constituents including MTBE have been detected in these potable wells by the VADEQ since November 2009. Additionally, the letter indicated that the VADEQ was contemplating a reduction in the potable well sampling frequency from quarterly to annual. The VADEQ subsequently initiated the annual sampling schedule for the private potable wells within 1,500 feet of the Site. At the direction of the VADEQ, Kleinfelder, on behalf of Fairfax, continues to supply bottled water to two of the four properties located at 808 Golden Arrow Street and 809 Constellation Drive. The VADEQ in a letter dated November 1, 2013 has indicated that the AWS program will expand the sampling area to the east to include 9801, 9803, and 9807 Georgetown Pike residences provided the owners choose to participate.

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3.0 GEOLOGY AND HYDROGEOLOGY

The Site is located on the United States Geological Survey (USGS) Vienna, Virginia topographic quadrangle map at 39.998 North latitude and 77.288 West longitude (NAD83) at an approximate elevation of 335 feet (NAVD29) in Fairfax County, Virginia (**Figure 1**).

The Site is located in the Piedmont Physiographic Province of Virginia. Reviews of the Geologic Map of the Vienna Quadrangle, Fairfax County, Virginia, and Montgomery County, Maryland (Drake and Lee, 1989) and the Geologic Map of the Seneca Quadrangle, Montgomery County, Maryland, and Fairfax and Loudoun Counties, Virginia (Drake et al, 1999) indicate that the predominant rock type in the vicinity of the Site is polydeformed and highly metamorphosed crystalline bedrock of the Precambrian to Cambrian aged Mathers Gorge Formation. The Mathers Gorge Formation is characterized by quartz-rich schist and locally is deeply weathered to a clay-rich silty saprolite. The transition from schist saprolite to competent rock varies throughout the Site and is likely not represented by a single contact, but instead by a continuum of the weathering profile. The regional strike of fractures and foliations is generally north-northwest to south-southeast. The strike of features observed in the saprolite and bedrock encountered during the investigation are consistent with the regional mapping.

The static groundwater depth in the shallow on-site monitoring wells is at depths ranging from 20.22 to 36.86 feet below the top of casing (TOC) (**Table 3**). The June 2013 gauging data indicates that the potentiometric gradient (and apparent groundwater flow direction) is to the southeast under an estimated hydraulic gradient of approximately 0.021 foot per foot (ft/ft) between monitoring wells MW-5 and W-7. This is consistent with previous events and groundwater contour maps for the December 2011, June 2012, February 2013 and June 2013 gauging events are included as **Figures 5** through **8**, respectively.

The static groundwater depth in the deep monitoring wells is at depths ranging from 25.47 to 40.69 feet below the TOC (**Table 4**). The potentiometric gradient (and apparent groundwater flow direction) in the bedrock is also to the southeast under an estimated hydraulic gradient of approximately 0.014 ft/ft (**Figure 9**).

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4.0 SUPPLEMENTAL INVESTIGATION ACTIVITIES AND METHODS

Supplemental investigation activities completed as part of the CAP development include the DPE feasibility testing, installation of additional groundwater monitoring wells, well abandonment, borehole geophysics, packer testing, and groundwater gauging and sampling. The subsections below describe the methods that were employed and provide references to various tables, figures and appendices where additional information is located. Certain results and findings may be briefly discussed in this section, but overall investigative results are presented in the **Section 5.0** of this report.

4.1 Dual Phase Extraction Feasibility Testing

Based on the results of the feasibility testing previously conducted on December 16, 2009 it was determined that two extended tests would be conducted at the Site in the form of a vacuum enhanced groundwater extraction (VEGE) and a DPE test to be performed using the newly installed monitoring well MW-15 as the extraction well. These tests would be conducted for a longer duration than previously conducted tests allowing for a better understanding of equilibrium conditions at the Site. The feasibility testing was conducted on September 13 and September 14, 2011. Due to difficulties in sustaining groundwater recovery with the submersible pump, the attempted VEGE test on monitoring well MW-15 was suspended. The test equipment was reconfigured to conduct a 6-hour DPE feasibility test on monitoring well MW-15 on September 13, 2011. On the morning of September 14, following application of high vacuum DPE to MW-15 during the previous day, another attempt was made to use a submersible pump to conduct VEGE feasibility testing at MW-15; however, groundwater recovery was inconsistent and could not be sustained above approximately 0.2 gpm without going dry even with the application of vacuum to the well head. After approximately 60 minutes of pumping followed by 100 minutes of VEGE, the VEGE test was terminated and the pilot test equipment was reconfigured to conduct a 6-hour DPE feasibility test on monitoring well MW-11. The procedures followed for DPE testing are summarized in the paragraphs below.

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The principal purpose of the DPE feasibility tests were to determine:

- The feasibility of a DPE system or variation thereof for recovering groundwater and soil vapors;
- The vacuum and corresponding soil vapor flow rates required to achieve optimum recovery;
- The radius of influence (ROI) resulting from application of vacuum and the corresponding soil vapor flow rate;
- The recovery rate of groundwater from the formation;
- The affected area of drawdown at the Site;
- The flux of petroleum constituents removed from the soil and groundwater; and
- The appropriate design parameters for sizing remedial equipment.

Monitoring well MW-15 was chosen as the extraction well based on its location within the source area and proximity to existing wells for monitoring DPE influence throughout the test. Upon difficulties completing the desired VEGE testing on well MW-15, monitoring well MW-11 was chosen as the extraction well for further DPE testing. Additionally, DPE testing in the northern portion of the Site had previously been conducted on monitoring well MW-2, and completing DPE tests on both MW-15 and MW-11 would allow for evaluation of heterogeneities in subsurface response to high-vacuum extraction to the south of the UST field. Feasibility testing was completed using a skid-mounted assembly consisting of a water sealed 10 horsepower explosion proof liquid ring pump (LRP), a 54 kilowatt generator, a 60 gallon cyclonic air/water separator, discharge transfer pump, a totalized flow meter, associated piping and gauges and a holding tank. Extracted air was discharged directly to the atmosphere without treatment. Extracted fluids from the air/water separator were transferred to the holding tank for off-site disposal (**Appendix E**).

An SVE step test was conducted on monitoring well MW-15 to determine the relationship between applied vacuum and soil vapor flow rate from the formation. During the SVE step test, the vacuum at the wellhead was allowed to stabilize, and the corresponding soil vapor flow rates were established. The vacuum was increased until groundwater was pulled into the system.

The DPE feasibility tests were performed by inserting a one inch drop tube below the groundwater interface and slowly lowering the drop tube to approximately 44 and 39 feet below top of casing in monitoring wells MW-15 and MW-11, respectively. Monitoring wells MW-1,

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MW-7, MW-8 and or MW -11 and MW-15 were monitored for vacuum influence and groundwater drawdown. The drop tube at the extraction wells was secured at the well head with sanitary seal and then attached to the vacuum side of the LRP. The sanitary seal was fitted with a sample port for monitoring interstitial vacuum at the well head.

During the DPE feasibility tests, the following parameters were monitored:

- Interstitial vacuum being applied to the formation with a digital manometer;
- Extracted air flow rate and temperature using a digital anemometer;
- VOC concentrations as measured with a photoionization detector (PID) calibrated to report total VOCs in parts per million (ppm_v) as benzene;
- Oxygen (O_2) and lower explosive limit (LEL) levels as measured with a multi-gas meter;
- Amount of groundwater recovered; and
- The well head vacuum and depth to groundwater recorded at the observation wells.

4.2 Monitoring Well Installation

On April 8 through 11, 2013, the installation of one on-site and one off-site deep monitoring well was completed. Bedrock monitoring well MW-17D was installed on-site in the vicinity of monitoring wells MW-1 and MW-7 to assess the vertical distribution of dissolved phase constituents in the vicinity of the former tank field. Bedrock monitoring well MW-18D was installed off-site in the VDOT right of way and cross-gradient to assess the lateral and vertical extent of dissolved phase constituents to the east of the Site and to aid in determination of the potentiometric surface for the bedrock.

The boreholes were initially advanced by air knife / vacuum excavation to an approximate depth of five feet below grade to verify no underground utilities were present in the boreholes. Following borehole clearance activities, a Schramm drill rig was used to advance each borehole via air hammer. At each location (**Figure 2**) drill cuttings were collected for field screening and geologic logging. Well construction details for each well are in **Table 1**.

The boreholes were sampled approximately every five feet by collecting cuttings from drilling activities as the borehole was advanced. The cuttings were screened in the field using a calibrated PID. Drill cuttings encountered during well installation were classified predominately as silty fine sand. Traces of micaceous schist were also observed in soils at various depths.

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The competence of the bedrock increased from approximately 63 feet below grade (MW-17D) to approximately 92 feet below grade (MW-18D). Potential bedrock fracture zones were also encountered and were recorded on the boring logs. The bedrock monitoring wells were finished with locking compression caps and flush mount protective watertight manhole covers. Monitoring well construction details are included in **Table 1**. Boring logs and well construction diagrams are included in **Appendix B**.

Following completion, the wells were developed via air lift technology until the water discharged was of minimal turbidity.

The waste manifests for the disposal of drill cuttings and the development water from monitoring well MW-18D are included in **Appendix E**.

4.3 Borehole Geophysics

On December 19 through 20, 2011, borehole geophysical surveys were completed on deep wells MW-6D, MW-12 and MW-16D. On April 29 through 30, 2013, borehole geophysical surveys were completed on deep wells MW-17D and MW-18D. The following tests were completed:

- 3-Arm Caliper, which mechanically measures the borehole diameter;
- Fluid Temperature;
- Fluid Conductivity;
- Natural gamma;
- Short and long normal resistivity;
- Single point resistance,
- Spontaneous potential;
- High Resolution Acoustic Borehole Televiewer for well MW-17D, which records a scaled image of the borehole wall allowing identification of fracture locations;
- Optical Borehole Televiewer for wells MW-6D, MW-12D, and MW-16D, which records a scaled image of the borehole wall allowing identification of features such as fractures and solution openings and semi-quantitative estimation of fracture orientation and thickness using visible light; and

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- Heat Pulse Flowmeter (HFPM), which records the rate of vertical water flow at selected depths within a borehole. Heat Pulse Flowmeter testing was completed under ambient conditions for the wells and under stressed conditions for well MW-17D.

During the geophysical survey of monitoring well MW-18D, the bottom of the well had been originally drilled to 136 feet below grade, but was constricted to a depth of 101 feet below grade. Following fluid temperature and conductivity logging, caliper logging was attempted and a constriction in the well bore was identified at 101 feet. The apparent constriction and difference in depths suggested that the borehole was collapsing and a video log was completed. The video log showed a zone of loose and severely plucked rubble from 98 to 100 feet, and a rock blocking the hole at 101 feet. The VADEQ was notified of this field condition and no further testing was completed on well MW-18D. However, the well remains usable for potentiometric gauging and for collecting groundwater samples that are representative of the open interval below the casing, as the potentiometric surface exists above the obstruction, and the obstruction permits fluid flow across it.

The borehole geophysical logging produced data that was used to assess the geologic structure and fabric and to select target intervals for packer testing of monitoring well MW-16D and MW-17D and vertically discrete sampling intervals of the open borehole monitoring wells. Complete results of the borehole geophysical program are included in **Appendix F**.

4.4 Groundwater Sampling

On February 25, and June 6-7, 2013, the depth to groundwater and total well depth were measured to calculate the volume of water in each of the on- and off-site shallow monitoring wells. The existing monitoring wells on the Shell service station (W-1 through W-7) to the east / southeast of the Site were sampled for the first time by Kleinfelder on June 6-7, 2013. The shallow wells were sampled using a conventional purge and sample technique. This technique consists of purging standing water from the well using a submersible pump, allowing the water level to recover, and collecting a sample with a dedicated bailer.

On February 25, 2013, and June 6 2013, the deep monitoring wells MW-6D, MW-12D, MW-16D and PW-1 were sampled for analysis of dissolved phase constituents in the bedrock. Deep monitoring well MW-6D was sampled via low flow methodology at three intervals and deep monitoring well MW-12D was sampled via low flow methodology at two intervals to screen for

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the lateral and vertical presence of MTBE in the bedrock which has been less than 3 µg/L in MW-6D and not detected in MW-12D. The groundwater sampling intervals at MW-12D were selected based on the approximate depths of apparent fractures in bedrock as identified during drilling activities. The selected sample intervals for bedrock well MW-6D were sampled as directed by VADEQ in a December 10, 2009 letter included within **Appendix A**. Deep monitoring wells MW-16D and PW-1, which both have shortened open borehole intervals in shallow bedrock, were each sampled at a single interval using low-flow technology to vertically assess and ongoing monitoring of source area MTBE concentrations.

On May 10, and June 6, 2013, deep monitoring well MW-18D was sampled. Deep monitoring well MW-18D was sampled with a submersible pump in which the pump intake was situated in the well casing to collect a groundwater sample to screen for the presence of MTBE. Water samples were collected after one and three purge volumes of the well for laboratory analysis in May 10, 2013 and a sample was collected after approximately two purge volumes on June 6, 2013. The blockage of the borehole prevented vertical interval sampling; however, the borehole and video survey identified a water producing fracture zone beneath the well casing. Groundwater analytical results associated with the conventional purging and sampling of this well are representative of the open portion of the borehole, including the water producing zone identified beneath the casing, as the obstruction in the borehole still permits vertical fluid flow in the borehole.

The groundwater samples for the February 2013 event were submitted to Lancaster Laboratories of Lancaster, Pennsylvania (Lancaster) for analysis of VOCs and fuel oxygenates using Environmental Protection Agency (EPA) Method 8260B and total petroleum hydrocarbon – gasoline range organics (TPH-GRO) using EPA Method 8015. The groundwater samples for the June 2013 event were submitted to Lancaster for analysis of benzene, toluene, ethylbenzene, and xylene (BTEX) and MTBE using EPA Method 8260B and TPH-GRO using EPA Method 8015. The monitoring well gauging and sampling data is presented in **Tables 3** and **4**, and hydrocarbon distribution and groundwater contour maps for the February and June 2013 sampling events are presented as **Figure 7** and **Figure 8**, respectively. The laboratory analytical reports are included within **Appendix G**.

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HydraSleeve™ Sampling

As approved by the VADEQ, HydraSleeve™ interval samplers were used during the investigation as a screening tool to collect discrete interval groundwater samples from deep monitoring well MW-17D on June 5, 2013. Determination of the depth for deployment of the samplers was based on potentially water bearing fractures or fracture zones identified through the borehole geophysical data.

HydraSleeve™ interval samplers were used to obtain discrete groundwater samples from target depths (approximately 1-2 foot portion of the water column). HydraSleeve™ samplers were deployed to the selected depths and left in the well and allowed to equilibrate overnight. To collect samples, the HydraSleeves™ are filled by pulling upward on the tethered line which opens a check valve and allows water to enter the sampler. The type of sampler (interval or composite) and the rate of retrieval of the sampler control the water column interval that is sampled. Once the sampler is full, the check value closes and the HydraSleeve™ is slowly pulled to the service. Groundwater from the HydraSleeve™ is then used to fill sample containers. Consequently, HydraSleeve™ samplers can be deployed into the water column without inadvertently capturing water in the device. When retrieved, the check valve grabs water from the discrete depth where water may be entering a borehole through a discrete fracture. HydraSleeves™ are adequate for vertical profiling in this way, but do not seal the borehole from vertical fluid migration.

Samples were submitted to Lancaster for analysis of VOCs and fuel oxygenates using EPA Method 8260B. Groundwater analytical results for monitoring well MW-17D are provided in **Table 5** and the laboratory analytical report is included within **Appendix G**.

4.5 Packer Testing

Packer tests were conducted on monitoring well MW-16D on February 29 through March 1, 2012, and on monitoring well MW-17D July 29, through August 7, 2013. Packer tests were conducted using a straddle packer configuration to isolate selected intervals within each borehole. The intervals were selected based upon the results of the geophysical surveys conducted on the boreholes. Intervals containing potential water bearing fractures or fracture zones were selected for packer testing. Packer tests were conducted on the following intervals:

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- MW-16D 83.5-96 feet below grade
- MW-16D 104-106.5 feet below grade
- MW-16D 119-131.5 feet below grade
- MW-17D 67-77 feet below grade
- MW-17D 79-89 feet below grade
- MW-17D 91-101 feet below grade
- MW-17D 114-124 feet below grade
- MW-17D 127-137 feet below grade
- MW-17D 144-150 feet below grade

Packer tests consisted of isolating 10-foot intervals of the selected open-hole bedrock monitoring wells with inflatable packers so that hydraulic measurements and water-quality samples could be collected under simulated dynamic conditions (i.e., limited duration pumping). Pressure transducers were placed in the zones above, below, and within the packer interval along with being placed in surrounding monitoring wells. Real-time data was collected in the field from these transducers and corrected for barometric pressure through the use of a barologger. Packer testing pressure transducer data are provided in **Appendix H**. Slug testing was completed on each packer interval, which involved displacing the water in the interval with a physical slug and measuring the hydraulic response. Slug testing results are included in **Appendix H**. Pumping tests were conducted on productive packer intervals, the results of which are included in **Appendix H**. Water quality and hydraulic parameters were monitored during the packer testing. Groundwater was purged from the packer assembly via a submersible pump, through a flow through cell to monitor water quality parameters. Flow was measured through a flow meter and a flow totalizer.

During the packer testing of monitoring well MW-16D, once water quality parameters had stabilized, a groundwater sample was collected for laboratory analysis of VOCs and fuel oxygenates using EPA Method 8260B. While water quality parameters were monitored during the testing of monitoring well MW-17D, groundwater samples were collected after one, two, and three packer interval volumes for productive packer intervals. For non-productive packer intervals, attempts were made to purge residual water from the packer interval by alternate methods. The interval was then allowed to recharge overnight and a sample was collected the following day. The results of the laboratory analysis are summarized in **Table 5** and the

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laboratory analytical reports are included in **Appendix G**. The various hydraulic and geochemical data collected throughout the packer testing process aid in determining:

- The relative yield of discrete intervals;
- The hydraulic conductivity for discrete intervals;
- Whether or not the packers adequately isolated the discrete section of the borehole for testing; and,
- The potential for vertical hydraulic interconnection outside the borehole.

The results of the hydraulic and geochemical data collected throughout the packer testing of wells MW-16D and MW-17D are discussed in **Section 5.0**.

4.6 Monitoring Well Abandonment

On September 19, 2013, monitoring well MW-8 was abandoned by a licensed well driller at the request of the Fairfax County Department of Transportation in order to accommodate a road improvement project. Prior to the abandonment, the depth to groundwater and total well depth were measured to calculate the volume of water in the monitoring well. Three well volumes were purged with a dedicated bailer, after which a groundwater sample was collected. The groundwater sample was then submitted to Lancaster for analysis of BTEX and MTBE using EPA Method 8260B. The monitoring well gauging and sampling data is presented in **Table 3** and the laboratory analytical report is included within **Appendix G**.

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5.0 INVESTIGATIVE RESULTS

This section summarizes the feasibility testing results and the investigation results that constitute the three component parts of the SCM: geology (structure and lithology), hydrogeology, and chemical distribution.

5.1 Feasibility Testing Results

The results of the DPE feasibility tests completed on wells MW-15 and MW-11 are presented in the following sections. The data collected during the tests was recorded on field test data sheets and is summarized in **Tables 1** through **4** (**Appendix I**). The DPE pilot test data is visually depicted on Charts in **Appendix I**.

5.1.1 DPE Pilot Test Results

During the step test of MW-15 a vacuum was applied ranging from 67 inches of water column (IWC) to 145 IWC. Resulting airflow rates ranged from 15.7 standard cubic feet per minute (scfm) at 67 IWC to 25.8 scfm at an applied vacuum of 295 IWC.

<u>Monitoring Well MW-15</u>

The DPE test was implemented for a total of 360 minutes at interstitial vacuums ranging from 9.1 to 12.9 inches of mercury (IHg). The soil vapor extraction rate ranged from approximately 2.6 to 15.4 scfm. Refer to **Appendix I** for a visual depiction of the relationship between applied vacuum vs. flow. During the test, influent VOC concentrations started at 1,989 ppm_v and stabilized at less than 150 ppm_v in the second half of the test. Refer to **Appendix I** for a visual depiction of VOC readings vs. time. Lower explosive limit levels were 0% during the test, while O_2 levels remained above 19% after 15 minutes of starting the test. Vacuum influence was not observed in the surrounding observation wells. Drawdown was observed in all the observation wells with a total drawdown of 0.31 feet in monitoring well MW-7.

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Monitoring Well MW-11

The DPE test was implemented for a total of 360 minutes at interstitial vacuums ranging from 4.1 to 4.5 IHg. The soil vapor extraction rate ranged from approximately 38.8 to 48.0 scfm. Refer to **Appendix I** for a visual depiction of the relationship between applied vacuum vs. flow. During the test, influent VOC concentrations ranged from approximately 143 to 609 ppm_v at an average soil vapor extraction rate of 43.2 scfm. Refer to **Appendix I** for a visual depiction of VOC readings vs. time. Lower explosive limit levels ranged from approximately 11% to 46%, while O_2 levels ranged from 6.2% to 10.3%. The vacuum influence was consistently observed in two observation wells, ranging from 7.76 to 7.93 IWC in MW-1 (18.5 feet from MW-11), and 0.30 to 0.46 IWC in MW-7 (35.0 feet from MW-11). Drawdown was observed in two of the four monitoring wells with a total drawdown of 0.10 feet in monitoring wells MW-1 and MW-7. Note that monitoring well MW-15 depth to water readings were affected by the attempted VGE test conducted earlier in the day and were not be included in this discussion.

5.1.2 DPE Soil Vapor ROI

The vacuum influence data observed immediately prior to the end of the DPE test for monitoring well MW-11 was analyzed using a semi-log plot of normalized vacuums (observed vacuum at monitoring well divided by interstitial vacuum at an extraction point) on the logarithmic scale and radial distance from the extraction well on the arithmetic scale. No vacuum influence was observed during the testing of monitoring well MW-15. Significant radial influence was determined to be the distance where 1% of the interstitial vacuum was observed or extrapolated by graph. The ROI results are summarized below:

- While measurable vacuum influence was observed in two wells located at distances of approximately 18.5 and 35.0 feet from monitoring well MW-11, normalized influence at monitoring well MW-7 was less than 1% of applied vacuum. Therefore, significant vacuum influence was only observed during testing in monitoring well MW-1.

- Based on the pilot test data for monitoring well MW-11, the radial influence is approximately 32 feet when applying a vacuum of approximately 4.2 IHg, with a corresponding soil vapor flow rate ranging from approximately 38.8 to 48.0 scfm (**Appendix I**).

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5.1.3 SVE Hydrocarbon Recovery

During the feasibility tests Tedlar® bag samples of extracted soil vapors were collected at 1, 2, 4 and 6 hours. The soil vapor samples were submitted to Lancaster for analysis of BTEX, Total Petroleum Hydrocarbons (TPH) C_1-C_4 (i.e. methane) and TPH C_5-C_{10} using modified EPA Method TO-3. The soil vapor data for the tests is summarized in **Table 5** (**Appendix I**) and the laboratory analytical report is included as **Appendix J**. Refer to **Appendix I** for a visual depiction of influent soil vapor analytical and field VOC concentrations over time. Soil vapor hydrocarbon recovery rates were calculated using the extraction airflow rate at the time of sampling and compound concentrations detected from the laboratory analysis. The MTBE recovery rate from monitoring well MW-15 was higher than that of monitoring well MW-11 while conversely the recovery rate of vapor phase hydrocarbons as measured by TPH C_5-C_{10} was significantly higher in monitoring well MW-11 than MW-15. The results are presented below:

- The recovered MTBE concentrations in the air stream from monitoring well MW-15 increased during the test from 500 milligrams per cubic meter (mg/m3) to 1,100 mg/m3 with corresponding recovery rates of 0.57 to 1.14 pounds per day (lbs/day). The recovered MTBE concentrations in the air stream from monitoring well MW-11 was constant during the test at 100 mg/m3 with a corresponding recovery rate of approximately 0.40 lbs/day.

- Similar to MTBE, the recovered TPH C_5-C_{10} concentrations in the air stream from monitoring well MW-15 increased during the test from 600 mg/m3 to 1,100 mg/m3 with corresponding recovery rates of 0.69 to 1.05 lb/day. The recovered TPH C_5-C_{10} concentrations in the air stream from monitoring well MW-11 increased to a high of 17,000 mg/m3 at 2-hours and decreased to concentrations detected at the start of the testing (9,500 mg/m3 at 6-hours). The TPH C_5-C_{10} recovery rates ranged from 37.67 lbs/day (6-hours) to 66.64 lbs/day (2-hours).

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5.1.4 DPE Groundwater ROI

The drawdown observed immediately prior to the end of each DPE test was analyzed using a semi-log plot of drawdown (observed in observation wells) on the arithmetic scale and radial distance from the extraction well on the logarithmic scale. This trend line, created by the observed drawdown measured in the observation wells at different distances, is extended (to the right) to approximate the effect of groundwater extraction at any distance from the extraction well. Therefore, the DPE groundwater effective ROI can be extrapolated graphically by extending the trend line to where zero drawdown would be observed. The data from monitoring well MW-8 was not included in this analysis of the DPE test on MW-15 as preferential drawdown was observed in this direction (north) as compared to closer observation wells which resulted in a conservative ROI of approximately 42 feet. For reasons stated earlier, the data from monitoring well MW-15 was not included in this analysis of ROI for monitoring well MW-11. The ROI for monitoring well MW-11 was extrapolated to greater than 60 feet; however, drawdown was not observed at a distance of 48 feet. The drawdown results for the test are depicted on Charts in **Appendix I**.

5.1.5 DPE Test Summary

Six hour DPE tests were completed separately on wells MW-15 and MW-11. The DPE tests results from these two wells were different and may be attributed to one or more variables including subsurface heterogeneities and preferential pathways in the structure (north / south) within the saprolite, difference in length of screen in the test wells, differences in open screen interval to vapor flow in observations wells, and the recent installation of monitoring well MW-15 prior to the test which may have had a “skin” on the borehole or incomplete well development. The feasibility testing results summary is below:

- Both tests identified the presence of vapor phase constituents and the ability to recover these constituents in the southern area of the Site. The recovered soil vapor from monitoring well MW-15 was characterized by higher MTBE and lower petroleum hydrocarbon recovery as evidenced by the lower PID readings, 0% LEL and the analytical results. Conversely, the recovered soil vapor from MW-11 was characterized by lower but still relatively high MTBE concentrations (100 mg/m3) and higher petroleum hydrocarbon recovery as evidenced by higher PID readings, sustained LEL readings and analytical data.

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- No vacuum influence was observed during the testing of monitoring well MW-15 while vacuum influence of approximately 32 feet was observed during the testing of monitoring well MW-11. The ROI observed during testing of MW-11 is consistent with the short term tests performed in December 2009.

- The groundwater yields during were relatively low at 0.11 and 0.3 gpm; respectively which is consistent with the short term tests performed in December 2009.

- The hydraulic radius of influence for each test was relatively consistent at approximately 42 feet (MW-15) and less than 48 feet (MW-11).

5.2 Borehole Geophysics and Packer Testing Results

On December 19 through 20, 2011, borehole geophysical surveys were completed on deep wells MW-6D, MW-12 and MW-16D; and on April 29 through 30, 2013 a borehole geophysical survey on deep well MW-17D. The December 2011 surveys included optical televiewer, 3-arm caliper, fluid temperature, fluid conductivity, natural gamma, short- and long-normal resistivity, single point resistance, spontaneous potential and ambient heat pulse flow meter logging. The April 2013 survey on bedrock monitoring well MW-17D included optical televiewer, 3-arm caliper, fluid temperature, fluid conductivity, natural gamma, short -and long-normal resistivity, single point resistance, spontaneous potential and ambient and stressed heat pulse flow meter logging. The geophysical logging was conducted to evaluate the water bearing zones within each well at depths ranging from each respective well's bottom of casing to its terminal depth. The geophysical reports are included as **Appendix F**.

The results of the geophysical logging, in conjunction with low flow purge and HydraSleeve™ sampling results of bedrock monitoring wells MW-6D, MW-12D, MW-17D and MW-18D, were used to select bedrock monitoring wells and intervals to be further assessed via packer testing. The results of packer tested conducted on the selected intervals are discussed below.

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MW-16D

The data observed during the packer testing of the shallow interval of MW-16D (83.5-96 foot packer interval) shows little connection with the zone below. The top packer was set inside the steel casing, and the data from the pressure transducer set to monitoring that zone indicates a competent seal between the packer and the casing. The data collected from the 104-116.5 packer interval indicates hydraulic connections between the packer interval and the borehole beneath, with limited to no connection to the zone above. Similarly, the 119-131.5 packer interval of monitoring well MW-16D indicates hydraulic connections between the packer interval and the interval below, but limited to no connections to the intervals above (**Appendix H, Charts 1** through **3**).

MW-17D 67-77 Foot Interval

An analysis of the pressure transducer data collected from the 67-77 foot below ground surface packer interval indicates an adequate seal between the packer and the borehole wall. Slight drawdown observed in the interval below the tested interval suggests a hydraulic connection between the fractures of this interval and the interval below. This packer interval also displays a relatively strong connection to the shallow portion of the aquifer as observed in the normalized drawdown of monitoring well MW-1. Less drawdown is observed in monitoring wells MW-7, MW-11, and MW-15 (**Appendix H, Chart 4**).

MW-17D 79-89 Foot Interval

The pressure transducer data collected from the packer testing of the 79-89 foot interval indicates an adequate seal between the packers and the borehole wall. Slight displacement (less than the packer interval itself) observed in the zones above and below the tested interval, as well as in the shallow monitoring wells, suggests connections between the intervals above and below, and the shallow portion of the aquifer in the vicinity of monitoring wells MW-1, MW-7, MW-11, and MW-15. As observed in the pressure transducer data collected during the 67-77 foot interval, drawdown of the greatest magnitude was measured in monitoring well MW-1. The drawdown observed in monitoring well MW-1 during the packer testing of this interval was the largest observed in the observation wells during the packer testing. Drawdown was also observed in wells MW-7, MW-11, and MW-15 (**Appendix H, Chart 5**).

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MW-17D 91-101 Foot Interval

The pressure transducer data collected from the packer testing of the 91-101 foot packer intervals indicates the presence of a hydraulic connection between the tested interval and those above and below. The nature of the connection of the between the packer interval and the interval above is unclear and may be a result of a poor seal between the packer and the borehole wall, or may be a result of hydraulic connection within the formation a short distance from the borehole. The muted hydraulic response of the interval below the tested interval suggests the packer between the tested interval and the interval below formed an adequate seal with the borehole wall. Similarly to the two previously described packer intervals, the most notable influence to the observation wells was observed in monitoring well MW-1, followed by MW-15, MW-7, and MW-11 (**Appendix H, Chart 6**).

MW-17D 114-124 Foot Interval

Pressure transducer data collected during the packer test of the 114-124 foot packer interval suggest limited connectivity between that interval and those above. The response observed in the borehole above the isolated interval indicates a competent seal between the packer and the borehole wall and limited hydraulic connection with the aquifer above. Similarly, limited drawdown is observed in the monitoring wells MW-1, MW-7, MW-11, and MW-15 indicating limited hydraulic connection between the 114-124 foot interval and the shallow portions of the aquifer (**Appendix H, Chart 7**).

MW-17D 127-137 Foot Interval

An analysis of the pressure transducer data collected during the packer test of the 127-137 foot packer interval suggests similar trends to the interval above. The packer test of this interval occurred in two iterations over a span of two days, with a sample for laboratory analysis collected on the third day after allowing the packer interval to recover overnight.

Pressure transducer data collected from the 127-137 foot interval on July 30, 2013, with limited to no connections to the interval above, or the shallow portion of the aquifer. This is supported by the lack of an observed response in the shallow monitoring wells MW-1, MW-7, MW-11, and MW-15. Following the purge effort, this interval was left to recover overnight. On the morning

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of July 31, 2013, prior to collecting a sample, the pressure to the inflated packers was inadvertently released, thereby breaking the seal between the packers and the interval above. This event is captured in the pressure transducer data from the shallow monitoring well MW-1 in which an abrupt decrease in relative water level is observed coincidently with the release of pressure and subsequent compromise of the seal between the packers and the borehole allowing shallow water above the upper packer (in hydraulic communication with MW-1) to drain into the void of the deeper packer interval. This further suggests that under natural conditions, the 127-137 foot interval is in limited connection with the shallow potion of the aquifer, as the interval had not filled with water overnight (**Appendix H, Charts 8** and **9**).

MW-17D 144-150 Foot Interval

The pressure transducer data collected during the testing of the 144-150 foot packer interval indicates conditions similar to that of the 114-124 and 127-137 foot packer intervals. While significant drawdown is observed in the tested interval, drawdown is not observed above the interval, or in the monitoring wells MW-1, MW-7, MW-11, and MW-15 (**Appendix H, Chart 10**).

Tests to assess the hydraulic properties of the packer intervals were conducted as part of the packer testing procedure. Slug tests were performed on the packer intervals of monitoring well MW-17D and pumping tests incorporating multiple monitoring wells were conducted on the 83.5-96 foot packer interval of monitoring well MW-16D.

Slug testing was performed on each packer interval selected for packer testing in monitoring well MW-17D. Analysis of the slug tests indicates that the hydraulic conductivity of the upper three zones (67-77, 79-89, and 91-101 foot packer intervals) ranges from 1.5 feet per day to 21 feet per day. Conversely, the slug tests indicate that the hydraulic conductivity for the lower three zones is 0.0043 feet per day (**Table 6** and **Appendix H**).

Analysis of the pumping test conducted in the 83.5-96 foot zone of MW-16D and utilizing monitoring wells MW-2 and MW-9 as observation wells are consistent with the transmissivity and conductivity values of the shallow zones in monitoring well MW-17D (**Table 6** and **Appendix H**).

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The head measurements collected during the upper three packer zones of monitoring well MW-17D were used to conservatively estimate the radius of influence exerted by pumping in these intervals. The maximum drawdown observed in each of the shallow monitoring wells was plotted linearly as a function of distance logarithmically. A linear best fit line was then used to approximate the radius of influence of each pumping zone. The drawdown observed in monitoring well MW-11 during the 91-101 foot interval was not used in the best fit estimation of the radius of influence for that interval (**Appendix H**).

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6.0 SITE CONCEPTUAL MODEL

A Site Characterization Report was submitted by ExxonMobil to the VADEQ on November 12, 2009. At that time, monitoring wells MW-1 through MW-11 and MW-6D had been installed at the Site. The SCM at that time presented four distinct geologic strata consisting of fill material and massive silty saprolite; structured or layered saprolite; weathered bedrock; and fractured competent bedrock. The current conceptual model recognizes these "layers" as being gradational with depth until less permeable competent bedrock is encountered. This is supported by geophysical logging conducted on the open boreholes at the Site, and analysis of hydrogeologic data. These data indicate a single saturated zone recognized as a uniform porous medium within the upper, weathered portions of the saprolite/bedrock characterized by diminishing permeability with depth.

Soil encountered at the Site is consistent with a residual soil that developed *in-situ* as a result of weathering processes, which degrade competent bedrock to soil over time. The weathering of the schist bedrock results in a continuum of lithology encountered vertically at the Site that progresses from developed soils near the ground surface through saprolite and weathered bedrock to competent bedrock at variable depths. A review of the boring logs collected to date indicates that saprolite of the underlying competent schist may be encountered at depths that are above the groundwater interface throughout much of the Site. In the boring logs from monitoring wells MW-1 through MW-3, MW-5, MW-6, MW-6D, MW-7 through MW-15, and MW-16D saprolite, or terms suggesting saprolite, were used to describe the lithology at depths that range between 5 and 30 feet below grade. The depth to competent bedrock encountered throughout the Site area is also variable, likely due to lateral variations in the depth and character of the weathering.

6.1 Source Release and Description

Investigation and monitoring of the Site groundwater has been ongoing since July, 2009 when monitoring wells were installed for a Phase II ESA in advance of divestment of the Site by ExxonMobil. The source of the release is suspected to be the former UST system based on the >100,000 µg/L concentration in wells MW-1, MW-2, and MW-8 near the tank field in 2009.

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Based on the on-site groundwater monitoring data, the source for groundwater impact beneath the Site is attributed to small volume releases of gasoline or gasoline vapor from the former UST system. Although the specific causes were not established, the nature and extent of the release(s) were determined on-site and remediation is proposed in **Section 9.0**. The Site soil, soil vapor and groundwater data and mass estimate (presented in **Section 6.3**) support a determination that a limited quantity of gasoline or gasoline vapor was released from the former UST system. The limited quantity of the release(s) is supported by the absence of liquid phase hydrocarbon (LPH) in soils and groundwater, the general absence of BTEX compounds in soil samples collected from the monitoring wells in conjunction with the presence of low level concentrations of VOCs in soil samples collected from beneath the former UST system, and the general absence of BTEX compounds in groundwater beneath the Site. Additionally, a decline of MTBE concentrations in groundwater outside the apparent source area has been observed following UST system repairs (2009) and the UST system removal (2012). Although the actual mechanisms of the release(s) have not been specifically identified, minor liquid or vapor releases are plausible.

6.2 Hydrogeologic Framework

The hydrogeologic framework for the Site was developed by analyzing and integrating descriptions of Site geology, potentiometric surface data, discrete interval packer sampling results, discrete interval slug testing results, pumping test results, and borehole geophysical data.

The inspection of Site boring logs and well construction records along with the assessment that a weathering continuum exists in subsurface in the vicinity of the Site provides the basis for the understanding of the water-bearing and transmitting features in the subsurface. Groundwater potentiometric surface elevation contour maps are included as **Figures 5-8**. These figures indicate that the apparent groundwater flow direction is to the southeast of the Site under a hydraulic gradient of 0.021 ft/ft. A groundwater potentiometric surface map was created based on measurements from open boreholes associated with deeper monitoring wells on and off-site (**Figure 9**). The potentiometric surface contours for the deeper bedrock zone indicate a groundwater potentiometric gradient to the southeast with a hydraulic gradient of 0.014 ft/ft.

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Open boreholes associated with deeper monitoring wells provide a composite potentiometric measurement that is representative of the overall potentiometric conditions for the deeper portions of the aquifer on a broader local to regional scale. The isolation of individual fractures is not consistent with the uniform porous medium conceptual model that the data support for the transmissive portion of the bedrock aquifer. In this porous medium model, the isolation of individual fractures may be of too fine a scale or even discontinuous relative to the aquifer as a whole resulting in anomalous or ambiguous results.

Charts showing the depth to water during the packer testing, as well as the normalized water level in the observation wells monitored during the packer testing of monitoring well MW-17D (MW-1, MW-7, MW-11, and MW-15) are presented in **Appendix H**. The normalized drawdown allows for the standardized comparison of influence observed in a single observation well through time, as well as the comparison to the drawdown observed in the remaining observation wells.

An analysis of the data collected by pressure transducers located in monitoring wells MW-16D and MW-17D above, below and within the packer test intervals, as well as pressure transducers situated in monitoring wells MW-1, MW-7, MW-11, and MW-15 during the packer testing of monitoring well MW-17D and depth to water measurements conducted during the packer testing of monitoring well MW-16D, indicate:

- The 67-77, 79-89, and 91-101 feet below grade packer intervals of monitoring well MW-17D are in hydraulic communication with the shallow portion of the aquifer monitored by MW-1, MW-7, MW-11, and MW-15.

- The 114-124, 127-137, and 144-150 packer intervals of monitoring well MW-17D have limited hydraulic connection with the shallow portions of the aquifer monitored by MW-1, MW-7, MW-11, and MW-15.

- Hydraulic communication between the 83.5-96 foot interval of monitoring well MW-16D and the intervals below is limited.

These observations suggest that the dominant water transmitting zone at the Site extends from the groundwater interface to approximate depths of between 96 and 114 feet below grade.

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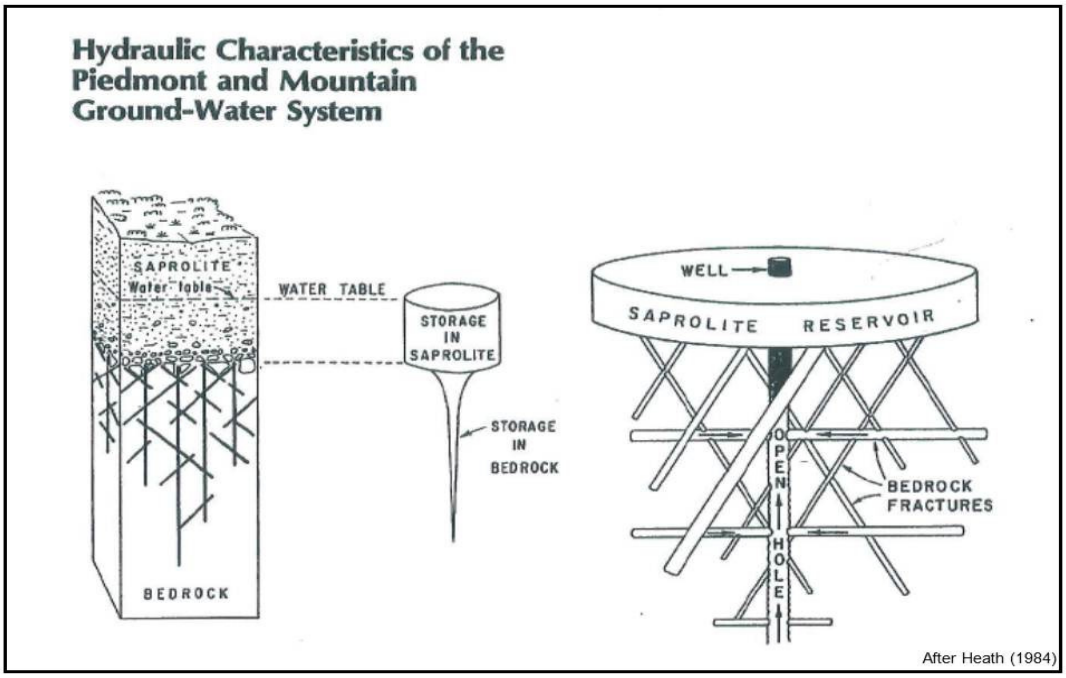
Pumping tests performed on the 83.5-96 foot zone of MW-16D. Analysis of the pumping test results of the 83.5-96 foot zone of MW-16D are consistent with the transmissivity and conductivity values of similar depth zones in monitoring well MW-17D (**Table 6**).

Slug tests performed on each packer interval selected for packer testing in monitoring well MW-17D indicate that the hydraulic conductivity of the upper three zones (67-77, 79-89, and 91-101 foot packer intervals) ranges from 1.5 feet per day to 21 feet per day. Conversely, the slug tests indicate that the hydraulic conductivity for the lower three zones is 0.0043 feet per day (**Table 6**). The average hydraulic conductivity for the shallow portion (water table) of the aquifer reported in the SCR was 0.122 feet per day (GES, 2009).

Heat pulse flow meter logging of monitoring well MW-17D indicates a similar trend as is suggested by the packer testing results. Stressed heat pulse flow results indicate that the borehole flow diminishes with depth, and that measureable borehole flow terminates at a depth between 140 and 150 feet. (**Appendix H, Chart 11**). Multiple lines of evidence provided by the results of the packer testing, slug tests and pumping tests suggest that the dominant water bearing zone at the Site extends from the water table to approximately 96 to 114 feet below ground surface. Below this interval, the yield / permeability of the formation diminish significantly. Additionally, the shallow (water table) and deep portions of the aquifer (bedrock) exhibit similar potentiometric surfaces and apparent groundwater flow directions. This model is consistent with the model presented by Heath (1984) conceptualizing the hydraulic



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characteristics of the Piedmont groundwater system. The diagram by Heath (1984) illustrates that the bulk of aquifer storage and transmissivity corresponds to the transition zone between the water table and the top of bedrock, and these aquifer characteristics diminish with depth into bedrock. The results of hydraulic tests conducted on monitoring wells MW-16D and MW-17D indicate that the relationship illustrated by Heath (1984) of diminishing storage and transmissivity as a function of depth is consistent with Site conditions.

6.3 Chemical Distribution

Groundwater monitoring analytical data indicates that the most likely source of the MTBE release is in the vicinity of the tank field. The highest MTBE detection at the time of the initial July 2009 assessment was in monitoring well MW-1 adjacent to the tank field the south. The second highest detection of MTBE is reported in monitoring well MW-2 adjacent to the tank field to the north (**Table 3** and **Figure 8**). Additional monitoring wells (MW-6S, and MW-7 through MW-11) were installed in September and October 2009. Of the newly installed wells sampled in October 2009, monitoring well MW-8, located to the east of the tank field, displayed the highest concentration of MTBE observed in Site monitoring wells at that time; however, the concentration of MTBE in this monitoring well exhibits an overall decreasing trend through time. The groundwater analytical data in the shallow monitoring wells collected in October 2009 and June 2013 were used to create isoconcentration contour maps of MTBE (**Figure 10**). Note that the August 2008 groundwater analytical data collected by others from the Shell station was used in the October 2009 isoconcentration map. A review of **Figure 10** indicates that the migration direction of the plume has been consistently to the southeast, but the concentration distribution has changed: the perimeter has contacted, the core concentration area has reduced, and there has been internal migration within the area of the plume.

The Shell service station is located east / southeast and downgradient of the Site. Existing wells on the Shell station were incorporated into the Site monitoring well network to assess shallow groundwater flow direction and extent of MTBE. Similar to the Site, the Shell station has been in operation since the late 1960s. The wells on the Shell station were installed between the mid-1990s and 2003 and petroleum constituents indicative of release(s) of gasoline have been documented on the Shell station since that time. Some degree of MTBE in groundwater at the Shell station is a pre-existing condition (see 2003 – 2008 results in **Table 3**) and the detection of MTBE on this property cannot solely be attributed to the migration from the former Exxon.

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The highest reported concentrations of MTBE in groundwater are consistently found in monitoring wells MW-1, MW-2, MW-7, MW-8 (abandoned), MW-11, MW-13 through MW-15, MW-16D, and MW-17D. The concentration reported from groundwater samples collected from monitoring well MW-1 are generally an order of magnitude greater than those reported from other Site monitoring wells for contemporaneous samples. The exception to this trend are the concentrations reported from groundwater samples collected from monitoring well MW-2, which reports values of MTBE that range from a 3,500 µg/L (June 2013) to 160,000 µg/L (September 2011) over the course of monitoring.

The hydrogeologic framework of the Site geology dictates the distribution of MTBE at the Site. In efforts to understand the distribution of MTBE at the Site, discrete interval groundwater sampling, including packer testing, HydraSleeve™, and discrete interval low flow methodologies, were employed in deep monitoring wells at the Site. The results of the low flow and HydraSleeve™ sampling identify the aerial extent of MTBE in the deep portion of the aquifer, and indicate that in wells in which MTBE is present, vertical mixing of borehole water occurred. Analytical results of groundwater samples collected during packer testing, in the context of the relationship of aquifer transmissivity and depth, yield insight to the vertical distribution of MTBE at the Site.

Discrete interval low flow sampling of monitoring wells MW-6D, MW-12, and MW-18 indicate the absence of MTBE in the vicinities of these monitoring wells in the transmissive portion of the aquifer. Discrete interval low flow sampling of MW-16D and PW-1, as well as HydraSleeve™ sampling conducted on monitoring well MW-17D, indicate a relatively even distribution of MTBE throughout the borehole water column in each of these wells:

- PW-1 sampling conducted on September 2, 2011
    - 65 feet below top of casing, 1,800 µg/L MTBE
    - 85 feet below top of casing, 1,600 µg/L MTBE
    - 105 feet below top of casing, 1,400 µg/L MTBE

- MW-16D sampling conducted on December 22, 2011
    - 89 feet below top of casing, 2,600 µg/L MTBE
    - 110 feet below top of casing, 2,600 µg/L MTBE
    - 125 feet below top of casing, 2,500 µg/L MTBE

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- MW-17D HydraSleeve™ sampling conducted on June 5, 2013
    - 77 feet below top of casing, 6,600 µg/L MTBE
    - 93 feet below top of casing, 6,600 µg/L MTBE
    - 120 feet below top of casing, 6,300 µg/L MTBE
    - 146 feet below top of casing, 7,400 µg/L MTBE

Analytical results of groundwater samples collected during the packer testing of monitoring well MW-17D support the assertion that low flow and HydraSleeve™ samples are indicative of borehole fluid mixing.

Discrete interval samples collected from the 67-77, 79-89, and 91-101 foot packer intervals of monitoring well MW-17D exhibit a decreasing trend of one order of magnitude with each subsequent interval. The MTBE values from the lower intervals are attributed to borehole mixing due to an incomplete or insufficient purge of the packer interval and not the vertical extent of MTBE in the bedrock. The incomplete purge was due to lack of groundwater recharge to the deeper packer intervals, a consequence of minimal transmissivity/permeability at this depth.

In addition to MTBE and minor amounts of other petroleum constituents, the chlorinated ethenes cis-1,2-DCE, PCE, and TCE were detected in the representative sample collected from the 91-101 foot packer interval. Additionally, cis-1,2-DCE was reported in the representative sample collect from the 79-89 foot packer interval. The concentration trend observed between these two packer intervals suggest that the chlorinated ethenes detected at the Site is widespread and pervasive. The presence of chlorinated ethenes reported in groundwater samples from monitoring wells and area potable wells with no reported concentrations of MTBE further suggest that the source of the chlorinated ethenes is other than the Site.

The packer testing results of groundwater samples collected from monitoring well MW-17D are consistent with the hydrogeologic framework of the Site in that the more transmissive zones of the aquifer, those located a depths less than approximately 110 feet below ground surface, dominate the Site hydrogeology. The observed decreasing concentration of MTBE with depth suggests that MTBE is vertically delineated in the vicinity of MW-17D. The understanding that the Site hydrogeology is characterized by two distinct zones and the vertical delineation of MTBE in the vicinity of monitoring well MW-17D indicate that that the majority of MTBE impact is

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limited to the shallow, more productive zone of the aquifer. Further assessment of these deep bedrock intervals is proposed in **Section 15.0**.

At the request of the VADEQ, an estimate of the remaining MTBE in the source has been completed. The mass of vapor and adsorbed phase MTBE was not calculated as these phases are typically negligible when compared to the mass in the dissolved phase due to the physical properties of MTBE, absence of a continued source (i.e. UST system) at the Site, and soil data that indicates MTBE is not present in the vadose zone above 0.056 mg/kg (**Table 2**). Based on the June 2013 isoconcentration contour map, the core area in which MTBE is interpreted to be >100,000 µg/L, which is considered to be the remaining source area, is approximately 205 square feet (ft^2) (A). This area is roughly centered on monitoring wells MW-1 and MW-17D and is constrained to the south, north, and northeast by monitoring wells MW-7, MW-11, and MW-15, respectively. The vertical extent of MTBE in this area is interpreted to be saturated thickness (b) from the water table (approximately 32 feet in MW-1, on June 6, 2013) to the bottom of the 67-77 foot packer interval. The volume of water in the source area is the product of the total saturated volume and the measured porosity (n) of 43%. The mass of MTBE remaining in this volume of water was estimated using a uniform concentration (C_{MTBE}) of 150,000 µg/L (MW-1, June 6, 2013).

$$Mass_{MTBE} = A_{Source} \times b \times n \times C_{MTBE}$$

Based on these assumptions, the mass of dissolved phase MTBE remaining in the source area is estimated to be approximately 16 kilograms (kg).

The core dissolved phase MTBE mass estimate presented above has been prepared at the request of the VADEQ to guide remediation planning. The estimated dissolved phase MTBE mass is considered an order of magnitude approximation, based on interpretation of a discrete number of analytical samples, interpolation of areas from multiple lines of investigatory data, and assumptions. The intended purpose of this estimate is to inform remediation alternatives evaluations and upon completion of additional characterization activities to aid in development of estimated cleanup time and cost projections.

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6.4 Site Conceptual Model Summary

The source for groundwater impact beneath the Site is attributed to small-volume releases of gasoline or vapor from the former UST system and this determination is supported by multiple lines of evidence. Although the actual mechanisms by which MTBE was released have not been specifically identified, minor liquid and/or vapor releases are plausible.

The dissolved-phase MTBE plume is essentially limited to the southern portion of the intersection with Georgetown Pike and Walker Road beneath commercial properties, which include the inactive Fairfax facility (Site) and the Shell service station (**Figure 10**). Comparison of the October 2009 to the June 2013 MTBE isoconcentration contour maps (**Figure 10**) indicates that the perimeter of the plume has contracted. Additionally, the area of source concentration (plume core) (>100,000 µg/L) has diminished, which is attributed to removal of the USTs, the discontinued use of PW-1 as a supply well, and the natural advection and attenuation within the limits of the plume.

The Site exists at the upper reaches of a topographic valley that trends in a south-southeast direction (**Figure 1**). This valley may influence groundwater flow to the southeast; however, the water table is not projected to intercept the land surface of the valley within 2,000 feet of the Site. This projection in conjunction with the localized distribution of the MTBE plume as depicted on **Figure 10** indicates that the discharge of groundwater containing MTBE to surface water is not expected.

Fate and transport analysis of MTBE in groundwater was conducted in conjunction with the empirical evaluation described above to evaluate plume stability, its internal migration dynamics, and estimate the potential maximum extent of dissolved-phase MTBE due to historic releases associated with the former service station located at 9901 Georgetown Pike. The fate and transport evaluation is limited to analytical modeling and represents an approximation to be considered in the context of historic, recent, and future sampling of the groundwater monitoring network, which provides empirical information with regard to plume extent, migration, and internal variation.

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Results of the fate and transport modeling (**Appendix K**) indicate that the plume may not have reached steady state conditions; however, MTBE is not expected to migrate beyond the downgradient shopping plaza at concentrations greater than 0.004 milligrams per liter (mg/L) (4 µg/L). Comparison of the dissolved-phase MTBE distribution maps from October 2009 to June 2013 (**Figure 10**) indicates that the plume perimeter has contracted, suggesting the fate and transport model is conservative. Downgradient monitoring wells are also situated to intercept dissolved-phase migration beyond its current limits should MTBE migration continue.

Vertical migration is limited by diminishing permeability (less weathering and fewer fractures) with depth. Site-specific hydraulic profiling data indicate diminished permeability with depth starting at 96 feet below grade. This is consistent with discrete interval MTBE analytical results that indicate order of magnitude decreases in MTBE approximately every 10 feet in the interval from 66 to 101 feet below grade. These site-specific hydraulic and chemical testing results are consistent with the regional hydrogeologic framework described by Heath (1984).

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7.0 RISK ASSESSMENT

The VADEQ in a letter dated December 10, 2009 requested an updated risk assessment based on the results of newly installed wells. An exposure assessment and interpretation of the data collected as part of this investigation is presented in the following sections.

7.1 Current and Future Site and Surrounding Property Usage

The Site is an inactive retail service station located in a commercial and residential area. A service station operated at the Site from approximately 1969 to August 2012 when the UST system was removed. The Site was acquired by Fairfax from ExxonMobil in February 2010. It is our understanding there is a proposal to lease the Site for redevelopment as a bank branch and a zoning application for a drive-in financial institution has been submitted to the Fairfax County Planning Commission. The Fairfax County Inspection Database Online (FIDO) identified an application was processed for Permit # 201300070 - Special Exception Development Plat Analysis for Application # SE.

A review of the Fairfax Comprehensive Plan for the Upper Potomac and Hickory Planning Districts which encompass Great Falls was reviewed for proposed changes in future land use. There is a recommendation in the plan to "*Replace the existing mini-library on Georgetown Pike with a community library near the intersection of Georgetown Pike and Walker Road*". No significant plans for development or land use changes in the vicinity were identified in the Fairfax Comprehensive Plan.

The FIDO system was reviewed for existing and proposed plans for development and potential changes in zoning within 1,500 feet of the Site. There are applications for preliminary sewage disposal, interior alterations, electrical upgrades and ventilation equipment installation for multiple properties. Applications for the installation of potable wells were not identified within 1,500 feet of the Site. Since no permits were found for alterations or zoning changes for the area of the Site, it is assumed that the future area land use will remain similar to current conditions.

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7.2 Identification of Potential Exposure Pathways and Receptors

Exposure is defined as the contact of an organism (receptor) with a chemical or physical agent. Therefore, an exposure pathway or a potential risk is considered complete if the following components are present:

- Source and receiving medium
- Transporting mechanism or medium
- Exposure point with a receptor
- Exposure route (ingestion, inhalation, direct contact) at the exposure point

The following list presents potential human and environmental receptors that may be exposed to the chemicals of concern through potentially complete exposure pathways:

- Future on-site commercial employees;
- Off-site commercial workers;
- Off-site residents;
- Construction workers; and
- Environmental impact to nearby streams

Although on- and off-Site customers and visitors are potential human receptors to the Site and surrounding commercial areas, a customer and visitor exposure would be much more limited than an employee and further evaluation is not considered warranted.

7.3 On-Site Potentially Complete Pathways

The Site is currently an inactive service station with no UST system. There is an application pending for a zoning change to allow the development of a drive-in financial institution on the Site. The future use of the Site is restricted through the Special Warranty Deed dated February 1, 2010 and registered with Fairfax County. An overview of the Special Warranty Deed indicates that the use of the Site is restricted for 30 years from residences of any type, places of worship, bed and breakfast facilities, hospitals, nursing home, child care, recreational, agricultural or educational use. No potable wells and underground storage or utility space with the exception of vapor tight utility conduits are permitted and any new building foundation must have an impervious liner to act as an effective vapor barrier.

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An evaluation of the on-site exposure pathways under the current use and anticipated future use scenarios for commercial and construction workers is presented below:

- The Site is serviced with municipal water and the current and future ingestion of groundwater exposure pathway is incomplete.

- Due to the depth of impacted soil and groundwater identified at the Site (**Tables 2** and **3**), the exposure pathway for soil ingestion, dermal contact and inhalation and incidental contact with groundwater pathways for commercial and construction workers are considered incomplete.

- The station building is vacant and the exposure pathway for indoor air inhalation of vapors for commercial workers is incomplete.

- The exposure pathway for indoor air inhalation of vapors for future commercial workers is considered incomplete as a vapor barrier is required for any future development.

7.4 Off-Site Potentially Complete Pathways

An evaluation of the off-site exposure pathways under the current use and anticipated future use scenarios for commercial workers, construction workers, and residents is presented below:

- The commercial properties in the vicinity of the Site are connected to the municipal water service and the current and future ingestion of groundwater exposure pathway is incomplete (**Figure 3**).

- Due to the depth of groundwater identified off-site (**Table 3**), the exposure pathway for soil ingestion, dermal contact and incidental contact with groundwater pathways for commercial and construction workers are considered incomplete.

- The Great Falls Crossroads building is located hydraulically crossgradient to the Site and the building contains a one level below grade parking structure and an elevator near the center of the structure. The parking structure is accessed by vehicles from the west side of the building through slotted metal access doors. Sumps were not visually identified in the parking structure and the depth is estimated to be 10 feet below grade

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along Walker Road. The depth of the elevator shaft in the building is not known; however, typical elevator shaft depths may be up to 8 feet depending on the elevator model. Conservatively, the elevator shaft in the Great Falls Crossroads building may extend to a depth of 18 feet below grade. The depth to groundwater in monitoring well MW-10, which is adjacent to the building, is consistently greater than 27 feet below grade; therefore, the one story below grade parking does not intercept the groundwater interface. MTBE has been detected at concentrations below 10 µg/L in monitoring well MW-10 on this property (**Table 3**) and the 10 µg/L and 100 µg/L MTBE isoconcentration contour lines extend beneath a portion of the Great Falls Crossroads building and below grade parking area (**Figure 10**). These dissolved phase MTBE concentrations are below the VADEQ Tier III vapor intrusion based screening criteria for groundwater of 1,910 µg/L (Table 2.10); therefore, the risk for the indoor air inhalation of vapors pathway for commercial workers in this building is below VADEQ guidelines. As the MTBE concentration is below the Tier III groundwater screening criteria, then no further vapor intrusion evaluation is necessary (VADEQ, 2008).

- The Great Falls Center is located hydraulically downgradient of the Site and MTBE has been detected in groundwater beneath the Shell service station. Dissolved phase MTBE is not detected in wells W-5 and W-7 adjacent to the nearest building (**Figure 8**) above the VADEQ Tier III vapor intrusion based screening criteria for groundwater (Table 2.10); therefore, the risk for the indoor air inhalation of vapors pathway for commercial workers in this building is below VADEQ guidelines and no further vapor intrusion evaluation is considered warranted at this time. Dissolved phase BTEX constituents have been historically detected in monitoring well W-5 which is located adjacent to the former USTs on the Shell station (**Table 3** and **Figure 8**). The dissolved phase BTEX constituents on the Shell station have not been considered in this pathway evaluation as these constituents are not associated with the MTBE release from the Site.

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- Residential properties with private potable wells are located within 1,500 feet of the Site. These properties have been regularly sampled by the VADEQ since late 2009 and petroleum constituents have not been detected (**Appendix D**). Therefore, the risk for the ingestion of groundwater pathway is currently below the VADEQ guidelines. The ingestion of groundwater containing MTBE is a potentially complete pathway in the future for residential properties downgradient (southeast) of the Site. These properties are located at a distance beyond 1,500 feet from the Site. Further characterization activities are proposed in **Section 15.0** to refine the SCM and delineate dissolved phase MTBE.

The subsurface utilities in the area of the Site are located at depths less than five feet below grade. Based upon the measured depth to utilities and the depth to groundwater as observed in the monitoring wells (greater than 30 feet below grade), the utilities located at or adjacent to the Site are not considered potential receptors.

As presented in the SCM, the Site exists at the upper reaches of a topographic valley which trends in a south-southeast direction (**Figure 1**). This valley may influence groundwater flow to the southeast; however, the water table is not projected to intercept the land surface of the valley within 2,000 feet of the Site. This projection in conjunction with the localized distribution of the MTBE plume as depicted on **Figure 10** indicates that the discharge of groundwater containing MTBE to surface water is not expected. Further evaluation of this pathway is not considered warranted at this time.

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8.0 REMEDIATION ASSESSMENT

Based on the information presented in the SCM and risk assessment, remediation is warranted to address petroleum constituents in the subsurface. Specifically, remedial action is proposed to reduce dissolved phase MTBE concentrations in order to establish a stable to decreasing plume to reduce the risk of exposure through potentially complete off-site pathways.

The objectives of the remediation program will be MTBE mass removal in order to establish a stable to decreasing dissolved phase plume, as well as limiting the potential for off-site migration of these dissolved phase petroleum constituents. In order to achieve such reductions in groundwater concentrations, the remedial efforts will be focused on the removal of adsorbed phase and vapor phase MTBE above the groundwater interface in the vicinity of the former UST field to reduce MTBE flux to the dissolved phase, as well as removal of dissolved phase MTBE from the saturated zone.

The objective of the remediation assessment is to identify, evaluate, and select an appropriate and cost-effective remedial technology that may be implemented at this Site. The following sections present the identification, evaluation, and selection of a remedial action alternative for this Site using the data that has been collected through investigation activities.

8.1 Remediation Alternatives

This section presents an initial screening of four potential remedial action alternatives to address the petroleum constituents detected at the Site:

1. Soil Vapor Extraction (SVE)
2. Air Sparging and Soil Vapor Extraction (AS/SVE);
3. Dual Phase Extraction (DPE)
4. Groundwater Pump and Treat (GWP&T)
5. Monitored Natural Attenuation (MNA)

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These alternatives have been selected for presentation and discussion herein based on the following criteria:

- The alternatives are reasonably likely to achieve the remediation objectives;
- Professional expertise is readily available to implement the alternatives;
- The alternatives are proven to be effective in remediation of MTBE impact to soil and groundwater;
- The alternatives will result in the reuse, recycling, destruction, detoxification, treatment, or any combination thereof, of the MTBE present at the Site; and
- The alternatives can be implemented in a manner that will not pose a significant risk of harm to health, safety, public welfare, or the environment.

8.1.1 Soil Vapor Extraction

Soil vapor extraction has been proven effective in reducing concentrations of VOCs in the vadose or unsaturated portion of soils impacted with petroleum constituents. This technique is generally more effective in the remediation of the lighter, more volatile petroleum products such as gasoline. An important factor in determining the feasibility of SVE is the permeability of the impacted soils. Since the primary remedial process of SVE is the volatilization of adsorbed phase VOCs on vadose soil grains, the effectiveness of SVE is directly proportional to the amount of air, which is moved through the affected pore spaces of the soil. Therefore, as with most in-situ technologies, SVE is most effective in soils with higher permeability such as sands and gravels, and less effective in soils of low permeability such as silts, clays, and glacial till.

While SVE may be highly effective at remediating VOCs in the vadose soils in the source area of a volatile petroleum release (and thereby eliminating a potential secondary source of impact to groundwater) the technology has not been proven to be effective in reducing concentrations of VOCs already dissolved in groundwater or adsorbed onto soil grains in the saturated zone. Therefore SVE is often combined with other techniques, such as groundwater extraction or air sparging, to treat both adsorbed phase and dissolved phase VOCs in the saturated zone, as well as vadose zone impacts.

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8.1.2 Air Sparging and Soil Vapor Extraction

Air sparging (AS), which involves the injection of air into the saturated zone, is typically utilized in the remediation of the lighter, more volatile petroleum constituents such as those found in gasoline. The mechanism employed during AS is the in-situ volatilization of VOCs dissolved in groundwater and adsorbed onto soil in the saturated zone of the affected aquifer. AS is often combined with SVE in order to contain, recover, and treat the VOCs generated during sparging.

The feasibility of AS is also dependent on the permeability and homogeneity of the target saturated soils. The effectiveness of AS is less certain at sites with soils of low or variable permeability (e.g. soils comprised predominantly of silt and clay or containing layers of silt and clay). Sparging has been shown to be most effective in relatively homogenous, coarse-grained soil materials (e.g. sands and gravels).

While AS has historically been utilized as a means of in-situ volatilization of VOCs in groundwater and soil, there is evidence that the introduction of oxygen into the saturated zone enhances the natural biodegradation of petroleum constituents. Because of this, the injection of air into the saturated zone at relatively low rates has been employed at some sites in order to stimulate bioactivity while minimizing the volatilization (and subsequent treatment) of VOCs. This approach is sometimes referred to as “Biosparging.” Sparging may also be effective in reducing the concentrations of adsorbed-phase petroleum constituents in saturated soils and in the capillary fringe, thereby eliminating what is typically a secondary source of VOCs in groundwater.

Air sparge systems typically exhibit a limited zone of effective airflow distribution within lower permeability soils, as are present at the Site. Additionally, the heterogeneity of the soil, saprolite and weathered bedrock would limit sparge effectiveness and impede air flow distribution horizontally and vertically within the saturated zone of the Site. For these reasons, AS does not appear to be a viable remedial approach and AS/SVE remediation was not selected for the Site.

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8.1.3 Dual Phase Extraction

Dual phase extraction is a remedial technique which involves the extraction of soil vapor and groundwater simultaneously through the use of high-vacuum pump or blower systems. This technique is utilized to maximize extraction rates of both vapor and liquids, especially in soils of low permeability.

If effective, DPE may remove petroleum–impacted groundwater and vapor while exposing the affected vadose and capillary fringe zones to airflow, enhancing volatilization and natural biodegradation.

Dual phase extraction is most effective in the remediation of relatively volatile petroleum concentrations (e.g. gasoline), which are present in soils of relatively low permeability (e.g., silt, clay or saprolite). The use of DPE creates a larger total fluid hydraulic and pressure gradient between the well and formation than by groundwater pumping alone, thereby increasing air and groundwater flow toward the well while minimizing the physical drawdown of groundwater elevation and smearing of petroleum hydrocarbons onto the soil grains. In low permeability environments, this enhanced gradient from the applied vacuum exceeds the effects of pumping alone.

For these reasons DPE was selected as a remedial technology for feasibility testing as presented in **Section 5**. DPE was demonstrated to be effective in recovering vapor phase MTBE and hydrocarbon and exhibiting vacuum influence as well as drawdown influence in certain surrounding wells. However, DPE was not effective in recovering dissolved phase MTBE due to minimal groundwater recovery. Dual phase extraction is generally focused on groundwater recovery from depths of less than 50 feet; therefore, installation of significantly deeper DPE wells to increase groundwater recovery is not a viable option at the Site.

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8.1.4 Groundwater Pump and Treat

Implementation of a GWP&T system was considered as a remedial alternative for the Site. This option involves the use of submersible pumps to extract groundwater from the subsurface for treatment. The groundwater removed from the extraction well draws down the water column in a well, creating a head differential and a gradient towards the extraction well.

This technology may be effective in establishing hydraulic influence to reduce the potential for offsite migration of dissolved phase constituents, as well as recovering dissolved phase hydrocarbons. Soil vapor extraction can be applied concurrently at the extraction wells to increase the pressure gradient towards the extraction wells, potentially increasing groundwater extraction rates, as well as allowing for vapor phase hydrocarbon recovery and treatment. GWP&T is typically more effective for dissolved phase mass removal of MTBE than for other gasoline constituents due to MTBE's chemical characteristics including relatively high solubility and low sorption.

For these reasons, GWP&T was selected as a remedial technology for feasibility testing in combination with SVE, i.e. vacuum-enhanced groundwater extraction (VEGE) as presented in **Section 5.0**. The VEGE tests were focused on vapor and groundwater recovery from the shallow portion of the aquifer using wells installed 40 and 45 feet below grade. VEGE in the shallow aquifer was not effective in producing sustained groundwater recovery and was therefore limited in dissolved phase constituent capture and recovery. However, subsequent characterization activities, including installation and testing of monitoring wells MW-16D and MW-17D indicate that groundwater recovery rates of approximately 2-5 gpm were sustained during packer testing while pumping from deeper intervals with MTBE concentrations. Remedial groundwater extraction from greater depth consistent with the 67 to 77 foot interval of monitoring well MW-17D would target a zone of relatively uniform hydraulic conductivity and dissolved-phase impact and likely allow for more effective fluid extraction from a single water-bearing zone of uniform concentrations. Groundwater extraction at this depth in turn limits the potential for drawing elevated MTBE concentrations to deeper zones because extraction would occur above deeper zones where lesser concentrations have been identified. Therefore, GWP&T from greater depth consistent with the 67 to 77 foot interval of monitoring well MW-17D is proposed for further evaluation and collection of design parameters for implementation in concert with SVE as the selected remediation technology, as discussed further in the following sections.

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8.1.5 Monitored Natural Attenuation

As a constituent migrates, several natural processes act to attenuate it. These processes are physical, chemical, and biological in nature and include mechanisms of dispersion, diffusion, adsorption, dilution, and biodegradation. These natural attenuation processes are defined as follows:

- **Dispersion:** This process is the result of heterogeneities in the aquifer medium that causes variation in flow paths and velocities, causing the solute mass to spread out and to be diluted. The net effect of dispersion is that the solute exists within a larger volume, but at a lesser concentration.

- **Diffusion:** A solute moves through the aqueous medium in response to chemical concentration gradients by this molecular-scale process. The effect of this process is to spread out and dilute the solute. Diffusion typically has minor or even negligible effects in most field situations, depending on the scale of the plume and physical characteristics of the aquifer.

- **Adsorption:** Adsorption is the result of the migrating solute interacting with and partitioning onto the aquifer matrix, particularly the fraction of organic carbon (FOC). This results in the retardation of the migrating constituent plume. The net effect of the adsorption is solute specific and depends on the affinity of the organic constituents for adsorption onto organic carbon (i.e., KOC).

- **Dilution:** This is the process whereby the concentration of the solute is decreasing by mixing with “fresh” water.

- **Biodegradation:** Biodegradation is the destruction of the solute by microbial processes. This process is particularly important because it is the only natural attenuation process that destroys constituent mass, thus yielding a stable or shrinking dissolved phase plume.

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Decreasing constituent concentrations with time (i.e. time series), in conjunction with a stable or receding dissolved plume (i.e. spatial), are primary lines of evidence for natural attenuation processes. The dissolved plume will typically expand downgradient from the source until it reaches equilibrium where the rate of constituents contributed from the source is balanced with the rate of natural attenuation. Natural attenuation is evident if a plume is stable while groundwater continues to move. A shrinking plume results when the source area mass is depleted to the point that the rate of natural attenuation exceeds dissolution from the source input.

Assessment of the changes in the Site's geochemical environment and evidence of transformation products of degradation constitutes a secondary line of evidence. A significant aspect of demonstrating microbial degradation of dissolved phase constituents is the observation of electron acceptor utilization and the production of metabolic by-products. Electron acceptor utilization is indicated by diminished concentrations of electron acceptors (i.e., dissolved oxygen, nitrate, and sulfate) in groundwater zones with relatively elevated constituent concentrations relative to background concentrations. In addition, the accumulation of by-products associated with these metabolic redox reactions in these zones is also indicative of microbial degradation of dissolved phase constituents.

Microorganisms obtain energy to grow by transferring electrons from an electron donor to an electron acceptor. An electron acceptor is a compound that receives or accepts an electron during cellular respiration. The microorganism through its cellular structure collects the energy for its use. The process starts with the transfer of an electron from an electron donor. During this process (electron transport chain) the electron acceptor is reduced and the electron donor is oxidized. Examples of electron acceptors are as follows:

- **Dissolved Oxygen:** Dissolved oxygen is the most thermodynamically favored electron acceptor used in the degradation of fuel hydrocarbons. Anaerobic bacteria generally cannot function at dissolved oxygen concentrations greater than about 0.5 mg/L (USAFCEE, 1995).

- **Oxidation/Reduction Potential:** The oxidation/reduction (redox) potential of groundwater (ORP) is a measure of electron activity and is an indicator of the relative tendency of a solution to accept or transfer electrons. The redox potential of groundwater generally ranges from -400 millivolts (mV) to 800 mV.

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- **Nitrate:** After dissolved oxygen has been depleted, nitrate may be used as an electron acceptor for anaerobic biodegradation via denitirification and nitrate reduction. In redox reactions, denitirification is favored over nitrate reduction because microorganisms generate more energy through denitrification (USAFCEE, 1995).

- **Ferrous Iron:** Ferrous iron is an indication of reducing conditions and microbial activity in some cases. Available ferric iron (III) on soil surfaces can serve as an electron acceptor and be reduced to ferrous iron (II), which is soluble in water (USAFCEE, 1995).

- **Sulfate:** After dissolved oxygen, nitrate, and bioavailable iron (III) have been depleted, sulfate may be used as an electron acceptor for anaerobic biodegradation. During microbial metabolism, sulfate is reduced to sulfide, which subsequently forms metal sulfide precipitates (USAFCEE, 1995).

- **Methane:** Methanogenesis is most likely to occur in the source area due to the high organic carbon content. During methanogenesis, carbon dioxide is used as an electron acceptor, and methane is produced. Methanogenesis generally occurs after oxygen, nitrate, ferric iron, and sulfate have been depleted. Detection of methane in groundwater is an indication of very low redox potential of groundwater (USAFCEE, 1995).

MTBE and its intermediate degradation product, tert-butyl alcohol (TBA), have been reported to biodegrade in both *in-situ* and *ex-situ* studies, under a range of aerobic and anaerobic geochemical conditions and examples of MTBE biodegradation are geographically widespread (Bradley et al., 2001). While evidence exists that natural attenuation processes are occurring at the Site, which aids in limiting dissolved phase plume migration, remediation involving physical source removal or reduction is warranted to be protective of potential receptors and accelerate the rate of natural attenuation. Therefore, MNA alone is not considered a viable remedial approach for the Site.

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9.0 PROPOSED CORRECTIVE ACTION PLAN SUMMARY

Of the remedial alternatives described in **Section 8**, SVE with GWP&T (from similar depths which yielded 2 gpm and greater during packer testing on monitoring wells MW-16D and MW-17D) has the most potential to achieve the remedial objectives of MTBE mass removal and hydraulic control of dissolved phase MTBE. Based on this selected approach, a temporary SVE system will be installed upon approval of the CAP as presented in **Section 9.1** and a conceptual remediation system design for the GWP&T is presented in **Section 9.2**. Prior to completing final design and procurement of the proposed remediation system, a pre-design aquifer test will be conducted to confirm both sustained groundwater yield during extended pumping, and hydraulic influence at existing monitoring wells.

9.1 Temporary SVE System

Following approval of the CAP, approval of local permitting agencies, and receipt of electrical service, a temporary SVE system will be installed at the Site. The remediation system that will be utilized at the Site as the temporary SVE system is owned by Kleinfelder and is described in **Section 9.1.3**. An application for electrical service for the temporary SVE system was submitted to Dominion Virginia Power on November 11, 2013. The temporary SVE system will be removed from the Site upon delivery of the permanent remediation system and prior to the construction of the proposed bank branch at the Site.

9.1.1 SVE Well Layout

Five dedicated SVE wells and one existing monitoring well (MW-14) are proposed to provide for vapor extraction coverage in the areas of elevated MTBE soil concentrations and vapor phase recovery during feasibility testing. The proposed SVE well locations were selected using the design vacuum ROI of 32 feet, based on the results of the DPE test at monitoring well MW-11. The locations of the proposed SVE wells and the estimated vacuum radius of influence are depicted on **Figure 11**. Proposed SVE wells SVE-1, SVE-3, and SVE-5 will be constructed with 4-inch diameter PVC casing and screened from 15 to 35 feet below grade; while SVE-2 will be screened from 15 to 45 feet below grade and SVE-4 will be screened from 20 to 35 feet below grade to reduce potential for short circuiting near the former UST field backfill. Proposed SVE-2 will also be used as a monitoring well to replace the abandoned monitoring well MW-8.

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9.1.2 SVE Well Installation

Prior to intrusive activities, Kleinfelder will contact Miss Utility to mark underground utilities and Kleinfelder will verify that the utilities are marked prior to the start of field activities.

The well boreholes will be advanced using a hollow stem auger drill rig. Drill cuttings will be collected at regular intervals for field screening and geologic logging. Soil samples from select intervals may be collected for laboratory analysis to further define the vertical extent of MTBE distribution in the area targeted for remediation.

Following borehole advancement, the SVE wells will be constructed using 4-inch diameter schedule 40 PVC riser and 0.020-inch machine slotted PVC screen fitted with an end cap. A clean No. 2 moiré sand pack will be installed in the annular space between the borehole and the well screen and casing from the bottom of the boring to approximately two feet above the top of the screen. Approximately four feet of bentonite clay will be placed on top of the sand pack and hydrated to form a seal above the sand. After allowing the bentonite to set, the remaining portion of the annular space will be grouted with Portland cement blended with powdered bentonite grout to approximately six inches below the top of casing. Each well will be completed with a lockable expansion-grip cap and covered with a bolt down, steel traffic vault set in a concrete pad.

The drill cuttings will either be stockpiled on and under plastic sheeting or containerized in 55-gallon steel DOT drums and transported for off-site disposal. Following installation, proposed SVE-2 will be developed until the water being discharged is of minimal turbidity and no longer visually cloudy. The vertical elevations of the top of casing for each well will be surveyed into the existing monitoring well network using standard survey equipment and tied into a known benchmark.

9.1.3 SVE System Equipment

The remediation system that will be utilized for the temporary SVE system has been secured and the equipment is housed within an 8 feet wide by 18 feet long wood building on a steel frame. The proposed location of the temporary SVE system is depicted on **Figure 11** and is subject to approval from local permitting agencies. The interior of the building is rated for Class 1, Division 2 hazardous locations as defined by the National Electric Code. The building

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includes a heater, exhaust fan, and lighting; all rated for hazardous locations. The SVE equipment consists of a vacuum blower capable of producing up to approximately 20 IHg vacuum at each wellhead and up to 250 scfm total air flow with an air/water separator, sample ports, and air flow, temperature, and pressure gauges. The piping from each well will be independently valved to allow for extraction from any or all of the wells at a given time. Each piping leg will contain a sample collection port to monitor applied vacuum, flow, and individual wellhead influent vapor concentrations to the system.

System controls and Critical Safety Devices (CSDs) are integrated into a primary control panel mounted on the exterior of the building. The primary CSD for SVE operation of the remediation system is a liquid level failsafe on the air/water separator. The SVE system is plumbed and wired such that shut down of any individual component due to failsafe activation will result in shut down of the remaining components for the system. In addition, the control panel is equipped with a telemetry system, which allows for remote monitoring of the system's operational status. In the event of a system alarm condition, the telemetry unit will notify system operators of the alarm conditions and operating parameters.

9.1.4 Remediation System Piping/Trenches

Two-inch diameter PVC piping for the temporary SVE system will be installed within trenches to connect each SVE well to the temporary remediation system. Concrete pavement will be saw-cut prior to trenching. The piping will be installed on a bed of masonry sand and covered by 4-inches of masonry sand. The trenches will be backfilled with select native material, free of cobbles and organic material, compacted in six-inch lifts or with self-compacting gravel (#57 stone) if native soils are not suitable for compaction. The piping trenches and tank field area (currently gravel cover) will be restored with pavement. The piping from the wells will lead to and be manifolded together at the remediation system.

9.2 Pre-Design Aquifer Test

A pumping test is proposed to confirm aquifer characteristics and design criteria for the proposed GWP&T system, including groundwater recovery rate and drawdown radius of influence for capture zone analysis. Proposed groundwater recovery well RW-1 **(Figure 12**) will be used as the pumping well during the aquifer test.

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9.2.1 Recovery Well Installation

Proposed recovery well RW-1 will be installed via air rotary drilling techniques in a 10-inch diameter 100 foot deep borehole. The well will be constructed with 6-inch diameter PVC screen and casing and completed within a flushmount manhole. The screen will extend from above the groundwater interface to approximately 100 feet below grade.

9.2.2 Aquifer Test

A pumping test will be conducted on proposed recovery well RW-1 for a maximum duration of 72 hours. Groundwater recovery will be accomplished using a submersible variable speed electric pump capable of greater than 5 gpm. The pump will initially be set to achieve water level drawdown within RW-1 to approximately 77 feet below ground surface to correspond with the 67 to 77 foot interval at MW-17D, which is the greatest depths where >100,000 µg/L MTBE concentrations were detected during packer testing.

Transducers will be installed in recovery well RW-1 and surrounding shallow and deep on-site and off-site monitoring wells to measure aquifer response during and immediately following pumping. At least one recovered groundwater sample will be collected during each 24-hour period of the test for analysis of full list VOCs including MTBE, TPH-GRO, and inorganic parameters to be used for treatment system design.

Prior to the test, a Virginia Pollution Discharge Elimination System (VPDES) permit will be obtained to allow for treatment and discharge of recovered groundwater during the test. Additional treatment train and effluent sample(s) will be collected as required for compliance with the VPDES permit. The temporary groundwater treatment equipment to be used during the test will include an influent equalization tank, transfer pump, portable liquid phase granular activated carbon (LGAC) vessels, a flow totalizer and sample ports prior to discharge of treated water to the storm drain on the adjacent property.

9.3 Conceptual Remediation System Design

Following completion of the pre-design aquifer test, the design for the permanent remediation system will be finalized and presented to the VADEQ. Understanding that additional characterization activities are proposed in **Section 15.0**, the permanent remediation system will

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be designed to have the capability and capacity to address MTBE at depth and off-site, if needed. Based on the remediation investigation activities conducted to date and the remedial alternatives assessment presented in the previous sections, a conceptual design for the permanent remediation system is presented in the following sections.

9.3.1 Groundwater Recovery Well Layout

The groundwater recovery well layout and construction details will be determined following completion of the pre-design aquifer test.

9.3.2 Remediation System Equipment

Following completion of the pre-design aquifer test, the permanent remediation system for GWP&T will be designed. The equipment for the permanent remediation system will be housed within a building or a container depending on the size of the groundwater treatment system (e.g. 20 or 50 gpm). It is anticipated that the permanent remediation system will be a minimum of 8 feet wide by 30 feet long. Certain areas of the permanent remediation system such as the exterior control panel and piping stub ups / connections will be located within a fenced enclosure for security. The proposed location of the permanent remediation system on the western property boundary is depicted on **Figure 12** and is subject to approval from local permitting agencies.

The following section provides a summary of the typical or like-kind equipment proposed for the system as well as individual equipment features. Construction of the proposed remediation system equipment will be competitively bid to three qualified vendors. The interior of the remediation system will be rated for Class 1, Division 2 hazardous locations (as defined by the National Electric Code). The remediation system will include the groundwater recovery and treatment equipment, a heater, exhaust fan(s), and lighting. The remediation system will include a floor sump at the low-end of the building near the water treatment system with an alarm that will be interlocked with the system components. The floor sump will prevent unauthorized discharge from the system by shutting down the system if the alarm is activated.

If the proposed remediation endpoint for the SVE system has not been achieved prior to the anticipated installation date of the permanent remediation system, SVE equipment will be included in the system. The SVE system equipment will consist of a vacuum blower capable of

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producing up to approximately 10 IHg vacuum at each wellhead and approximately 200 scfm air flow with a phase separator, sample ports, and air flow, temperature, and pressure gauges. The make and model of the vacuum pump will be dependent on the manufacturer. The piping from each well will be independently valved to allow for extraction from any or all of the wells at a given time. Each piping leg will contain a sample collection port to monitor applied vacuum, flow, and individual wellhead influent vapor concentrations to the system.

The GWP&T system will consist of submersible pumps, hoses and appurtenances required to meet the design criteria which will be confirmed following pre-design aquifer testing. Above-grade groundwater treatment equipment type and sizing will also be confirmed and may include an air stripper, bag filters, liquid phase GAC units, sample ports, a totalizing flow meter, as well as the needed equalization tank(s) and transfer pumps to process water through the treatment system prior to discharge to the storm drain system on 746 Walker Road (pending access agreement amendment).

System controls and CSDs will be integrated into a primary control panel mounted on the exterior of the remediation system. The CSDs will be dependent upon the design and equipment utilized in the final design and may include for example a high pressure failsafe on the liquid treatment system, and liquid level failsafe on the air/water separator, air stripper sump, and floor sump. The SVE (if necessary) and GWP&T systems will be plumbed and wired independently such that shut down of any individual component due to failsafe activation will result in shut down of the remaining components for the affected system. In addition, the control panel will be equipped with a telemetry system, which allows for remote monitoring of the system's operational status. In the event of a system alarm condition, the telemetry unit will notify system operators of the alarm conditions and operating parameters.

9.3.3 Remediation System Piping/Trenches

Remediation piping will be installed within trenches to connect each SVE (if necessary) and groundwater recovery well to the remediation system. The layout of the groundwater recovery wells will be determined following completion of the pre-design test and a compatible trenching layout with the proposed bank branch will be developed. Concrete pavement will be saw-cut prior to trenching. All piping will be installed on a bed of masonry sand and covered by 4-inches of masonry sand. The trenches will be backfilled with select native material, free of cobbles and organic material, compacted in six-inch lifts or with self-compacting gravel (#57 stone) if native

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soils are not suitable for compaction. All piping from the wells will lead to and be manifolded within the fenced enclosure for the remediation system.

9.4 Permitting

The following permits and approvals are anticipated to be required to implement the remediation proposed for at this Site.

Permits/Approval	Issuing Agency/Authority
- Zoning Evaluation	Fairfax County
- Building Permit	Fairfax County
- Fencing Permit	Fairfax County
- Electrical Permit	Fairfax County
-VPDES	VADEQ
- Air Permit Exemption	VADEQ

The anticipated permits are based on the conceptual design and the final determination of required permits will be made pending approval of this CAP and final design specifications.

9.5 Management and Disposal of Remediation Construction/ Process Wastes

9.5.1 Soil

During system installation activities, Kleinfelder, on behalf of Fairfax, will perform on-site inspections and manage the excavated soil in accordance with Virginia solid waste management regulations.

9.5.2 Vapor Effluent

Based on feasibility testing results, the recovered soil vapors from the SVE wells are below the VADEQ air permit exemption limits and the air stream will be discharged directly to the atmosphere without treatment. A request for an air permit exemption for the temporary SVE system will be submitted to the VADEQ Northern Regional Office. The vapor effluent will be monitored with a PID and monthly air bag samples to document hydrocarbon recovery and confirm that air treatment is not necessary. If an air stripper is incorporated into the design of

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the groundwater treatment system, a separate request for an air permit exemption for this equipment will be submitted to the VADEQ Northern Regional Office.

9.5.3 Discharge Effluent

Pending final system design, the fluids recovered by the recovery wells will be transferred to the groundwater treatment system via a transfer pump and treated through an air stripper and three liquid phase GAC units in series. The groundwater treatment piping will be fitted with sample ports to allow influent and effluent sampling. A VPDES permit will be obtained and treated groundwater will be discharged to the storm water sewer along the west side of the property. An amendment to the existing access agreement with the adjacent property owner (746 Walker Road) will be required to install the discharge line to this storm sewer.

9.5.4 Spent Carbon

Liquid phase carbon may be replaced with the appropriate regenerated carbon at select intervals to maintain treatment efficiency. Liquid phase carbon will be recycled and managed in accordance with relevant guidance documents.

9.6 Baseline Natural Attenuation Parameters

Prior to the start-up of the remedial system, groundwater samples will be collected in order to establish a baseline of natural attenuation parameters. The natural attenuation parameters include dissolved oxygen, ORP, pH, conductivity, nitrate, ferrous iron, sulfate, and methane. The establishment of baseline natural attenuation parameters will allow for future assessment of the effectiveness of natural attenuation at the Site.

9.7 System Operation and Maintenance

Following start-up of the remedial systems, operation and maintenance (O&M) visits for the first three months will be performed approximately daily for the first week of operation and weekly thereafter. Extended O&M visits will be performed (at a minimum) twice per month after the first quarter of operation; adjustments to this schedule may be proposed. Quarterly sampling and analysis will be conducted to evaluate the treatment system's efficiency and to evaluate overall system effectiveness. Samples will be collected for laboratory analysis in accordance with the applicable permits.

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9.8 Reporting Schedule

Quarterly monitoring reports are proposed for submittal to the VADEQ by the last day of the month following the end of each quarter. The quarterly reports will include a summary of the data collected from the period, including:

- Groundwater gauging and analytical results;
- System influent analytical data;
- System flow rates, recovery, and treatment efficiency calculations;
- O&M analyses when applicable; and
- An evaluation of the system's effectiveness and progress towards remedial endpoints.

O&M analyses and system effectiveness will include the following calculations:

- System uptime during the operation period
- Groundwater recovery flow rates;
- Dissolved phase hydrocarbon recovery rates;
- Vapor phase flow rates and hydrocarbon recovery rates; and
- Cumulative dissolved and vapor phase hydrocarbon mass recovery.

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10.0 PROPOSED REMEDIAL ENDPOINTS

Remedial activities will be considered complete when defined remedial endpoints are achieved for liquid, adsorbed, dissolved, and vapor phase hydrocarbons. Risk based endpoints that are protective of human health and the environment will be established for dissolved phase hydrocarbons once sufficient information has been collected following additional characterization activities and will be presented to the VADEQ in a CAP Addendum. The following sections discuss the proposed remedial endpoints.

10.1 Liquid Phase Hydrocarbon Endpoint

Liquid phase hydrocarbon (LPH) has not been detected in the wells. The endpoint will be an LPH thickness of <0.01 feet. Compliance with this endpoint has been achieved.

10.2 Adsorbed Phase Hydrocarbon Endpoint

The current and future exposure pathways associated with soil are considered incomplete. The adsorbed phase concentrations of MTBE, which are located at and below the groundwater interface, are a source for dissolved phase concentrations. A specific adsorbed phase hydrocarbon endpoint will not be established, but will instead be linked to the endpoints for dissolved and vapor phase hydrocarbons.

10.3 Dissolved Phase Hydrocarbon Endpoint

Private potable wells are located to the east / southeast of the Site and the MTBE plume has not been fully defined in the deep portion of the aquifer. A dissolved phase endpoint for MTBE will be established upon the completion of characterization activities in a CAP Addendum. The recommendations for further characterization activities are presented in **Section 15.0**.

10.4 Vapor Phase Hydrocarbon Endpoint

A vapor barrier is required for any future building constructed on-site and the exposure pathway for indoor air inhalation of vapors for on-site commercial workers is considered incomplete, therefore, the establishment of an on-site risk based vapor phase hydrocarbon endpoint is not warranted. The off-site risk based vapor phase hydrocarbon endpoint for commercial workers

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will solely be for MTBE as the detection of petroleum constituents such as BTEX in off-site well(s) (i.e. W-5) are not related to the release from the Site. The off-site MTBE risk based vapor phase hydrocarbon endpoint for commercial workers will be linked to the VADEQ Tier III vapor intrusion based screening criteria for groundwater (Table 2.10). If MTBE is detected above this groundwater screening level adjacent to or below a building, a vapor intrusion investigation will be completed in accordance with the procedures outlined in the Virginia Voluntary Remediation Program Vapor Intrusion Screening Fact Sheet (2008).

Petroleum hydrocarbon (TPH C_5-C_{10}) and MTBE vapors were recovered during the feasibility tests and will be addressed by the proposed SVE system. The establishment of asymptotic vapor phase hydrocarbon recovery rates is proposed as the remediation endpoint for shutdown of the proposed SVE system.

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11.0 POST OPERATIONAL MONITORING SCHEDULE

Pending the VADEQ approval of remediation system temporary shutdown, monitoring will begin for a minimum period of one year. Post operational monitoring will consist of quarterly groundwater sampling of select wells during this trial shutdown period. Post operational monitoring will include a rebound study that will monitor constituents of concern including TBA and of geochemical indicators associated with natural attenuation in order to determine if additional corrective actions or natural attenuation monitoring are necessary. If it is determined that the remediation endpoints have been achieved at the end of the post operational monitoring period, Kleinfelder, on behalf of Fairfax, will request no further action (NFA) and permanent removal of remediation equipment.

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12.0 PROJECTED COSTS TO ACHIEVE ENDPOINTS

Based on our knowledge and experience of similar cases, the projected costs for endpoint achievement are anticipated to range from approximately $615,000 to $825,000 over an estimated four to six year timeframe. The actual costs may vary based on multiple factors, including, but not limited to, system performance, duration of system operation, duration of post-operational monitoring period, Site constraints affecting system installation, variability in the subsurface conditions and the data from additional investigation activities proposed in **Section 15.0** and dissolved phase remediation endpoints to be established in a CAP Addendum. The projected costs presented below are to be considered estimates only:

- Additional investigation and testing - $75,000
- CAP Addendum / Model - $10,000
- Pre-design testing, design & vendor selection - $25,000
- System equipment procurement - $100,000
- System permitting and electrical service - $20,000
- System well installation (including oversight and waste disposal) - $35,000
- System trenching (including oversight and waste disposal) - $80,000
- System utilities - $1,500/month
- System O&M - $2,500/month
- Quarterly monitoring, reporting & management - $10,000
- Site Closure and Well Abandonment - $50,000

Pending CAP approval and the completion of the proposed pre-design and characterization activities, the system design will be finalized and procurement of the permanent remediation system will be competitively bid for purchase in accordance with the Virginia Petroleum Storage Tank Fund Reimbursement Guidance Manual. A lease versus purchase analysis will not be completed for the permanent remediation system because the expected run time is greater than 12 months.

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13.0 ESTIMATED TIMEFRAME TO ACHIEVE ENDPOINTS

As presented in **Section 10.0**, a dissolved phase endpoint for MTBE will be established following the completion of additional site characterization activities. In addition, the data that will be obtained during the proposed pre-design aquifer testing (**Section 9.0**) will be used to determine the capture zone and operational parameters of the proposed recovery wells. The dissolved phase MTBE endpoint and data obtained from the pre-design aquifer testing have a significant impact on the estimated duration to operate the proposed GWP&T remediation system.

Based on flow rates and radii of influence observed during feasibility testing, it is estimated that at approximately one to two years of SVE system operation will be needed to achieve at least 2,000 pore volume exchanges, which is a general guideline to achieve asymptotic conditions. Actual time to complete the necessary number of pore volume exchanges will vary depending upon the effective porosity of the unsaturated soils targeted for remediation, the actual volume of impacted soils, dewatering of the smear zone, and the total flow rate of the SVE system.

The proposed remediation systems will be operated using performance data such as groundwater and dissolved and vapor phase recovery rates and groundwater monitoring data versus the established remediation endpoints. Using this performance data, decisions and recommendations can be made to either continue system operation, shut down the system(s) to initiate rebound monitoring, or to evaluate supplemental remedial actions to accelerate reductions in dissolved phase concentrations. The remediation system would remain on-site during the proposed rebound monitoring period in the event that rebound occurs and additional remediation system operation is necessary. Post-remediation monitoring will be conducted for a minimum of one year following termination of active remediation to confirm ongoing natural attenuation and maintenance of CAP endpoints. The timeframe to achieve the remediation endpoints may be re-evaluated following corrective action implementation if the selected remediation technique is not considered effective.

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14.0 PUBLIC NOTIFICATION

In accordance with public participation requirements of the VADEQ Storage Tank Program Technical Manual section 5.7.3.1.2, owners or operators of USTs are required to provide notice to the public for all releases of petroleum where a CAP is mandated by the regulatory agency. The VADEQ recommends that public notice be initiated during CAP development to enable interested members of the public constituency to review the report concurrently with VADEQ personnel. Accordingly, a copy of the CAP was provided to the GFCA and Kleinfelder, on behalf of Fairfax, arranged for publication of the public notice for the CAP in the Great Falls Connections – Legal Notices section. A copy of the aforementioned publication will be submitted to the VADEQ under separate cover.

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15.0 CONCLUSIONS AND RECOMMENDATIONS

Kleinfelder has been retained by Fairfax Petroleum Realty, LLC to prepare a CAP for the Inactive Fairfax Facility #26140 located at 9901 Georgetown Pike, Great Falls, Virginia. The following section provides the conclusions of this CAP, as well recommendations for further activities.

- The Site is located in a mixed use commercial and residential area. Municipal water service is located within the immediate vicinity of the Site; however, certain residential properties utilize private potable wells within approximately 1,500 feet of the Site. These properties have been regularly sampled by the VADEQ since late 2009 and petroleum constituents have not been detected.

- Utilizing additional investigation results detailed in **Section 5.0**, an updated SCM was developed for the Site. The SCM presented a hydrogeologic framework of the Site that the more transmissive zones of the aquifer, those located at depths less than approximately 110 feet below ground surface, dominate the Site hydrogeology. This results in a porous medium (a hydraulic continuum) across various material types that abruptly terminates with lower permeability corresponding to competent bedrock at depth. The Site hydrogeology and the vertical delineation of MTBE in the vicinity of monitoring well MW-17D indicate that that the majority of MTBE impact is limited to the shallow, more productive zone of the aquifer.

- The potentiometric surface observed at the Site indicates a hydraulic gradient to the southeast / east in both the shallow and deep zones. Delineation of dissolved phase constituents in the shallow portion of the aquifer is considered complete to the north (MW-9), south / southwest (MW-6S and MW-10), east (W-3, W-4, W-5 and W-7) and west (MW-5) of the Site. Delineation of the dissolved phase constituents in the deep portion of the aquifer is considered complete to the southwest (MW-6S), north / northeast (MW-12D), and east (MW-18D) of the Site. Further site characterization of dissolved phase constituents in these directions is not considered warranted. Additional site characterization is proposed in the recommendations below to the southeast / east, north and south of the Site.

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- Current and future exposure pathways for on and off-site commercial workers and construction workers are considered either incomplete or the risk is below VADEQ guidelines. Private potable wells within 1,500 feet of the Site have been sampled regularly by the VADEQ since late 2009 and petroleum constituents have not been detected above the laboratory method detection limits. Therefore, the risk for the ingestion of groundwater pathway is currently below the VADEQ guidelines.

- A remedial approach using SVE and GWP&T has been proposed as the remedy to address dissolved phase constituents at the Site. Following approval of the CAP, a temporary SVE system will be installed at the Site. The temporary SVE system will be removed prior to construction of the proposed bank branch at the Site. A pre-design aquifer test is proposed prior to the design and implementation of GWP&T remediation.

- A dissolved phase MTBE endpoint has not been established. This endpoint will be established in a CAP Addendum following the completion of additional characterization proposed below.

Based on SCM and proposed corrective action plan, the following recommendations are provided:

- Additional monitoring wells are proposed to delineate dissolved phase MTBE to the southeast, north and south of the Site. Subject to VADEQ approval, Fairfax will seek access to these properties to install the proposed wells and the assistance of the VADEQ is anticipated. The data collected from these wells may also be used to facilitate calibration of a fate and transport modeling in order to establish the risk based endpoint for dissolved phase MTBE. The proposed well locations are discussed below and depicted on **Figure 13**.

    - One deep monitoring well (MW-19D) is proposed to the north of the Site on the Great Falls Professional Building to vertically and horizontally delineate MTBE in this crossgradient direction. This deep monitoring well is proposed to be completed such that the screened interval is situated to assess the transition zone anticipated to be approximately 80-100 feet below grade as seen in on-site wells MW-16D and PW-1.

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- One deep monitoring well (MW-20D), one intermediate depth monitoring well (MW-21) in the transition zone above bedrock, and one shallow monitoring well (MW-22) are proposed to delineate the extent of MTBE vertically and horizontally in the downgradient direction on the Great Falls Shopping Center.

- The existing monitoring well MW-10 is screened from 10 – 40 feet below grade; however, an intermediate depth monitoring well (MW-23D) is proposed to be installed to the south (crossgradient) on the Bank of America property. The proposed construction of this monitoring well will target an interval similar to the construction of supply wells in the area and is therefore considered protective of supply wells crossgradient and south of the Site. Available completion records for 11 wells to the south of the Site were reviewed and the median open interval of supply wells is from 24 to 57 feet below grade. The proposed monitoring well MW-23D will be installed with a screened interval from 50 – 60 feet below grade.

- A modified quarterly and annual monitoring schedule will be implemented for select monitoring wells. Monitoring wells that typically display MTBE concentrations of 20 µg/L or less are to be monitored annually with the exception of key delineation wells on the Shell property. Monitoring wells with MTBE concentrations that generally above 20 µg/L are recommended to be monitored quarterly. The MTBE concentration of 20 – 40 µg/L is recognized as the common taste and odor threshold (EPA, 1997). The wells will be sampled via low flow methodology and the proposed monitoring schedule and laboratory analyses using EPA Method 8260 are provided as **Table 7**.

- Groundwater samples collected via packer testing indicate a decreasing concentration profile with depth at monitoring well MW-17D. It is recommended that a discrete interval sampling technology or construction be installed in the deep monitoring well, MW-17D and the proposed monitoring well MW-20D in order to vertically delineate and/or monitor the deep portion of the aquifer in the vicinity of the source area and the downgradient direction. As requested by the VADEQ in their November 1, 2013 letter, similar discrete interval sampling technology or construction should be installed in wells with none or trace MTBE levels (MW-6D, MW-12D, and MW-18D) as well. Based on the MTBE results from proposed MW-19D between the Site and MW-12D, the abandonment of MW-12D may be proposed.

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- The vapor intrusion pathway is incomplete on-site and the locations of the vapor points interfere with the proposed redevelopment of the Site. The vapor monitoring points VP-1, VP-2S, VP-2D, and VP-3 will be abandoned.

- Subject to VADEQ approval, bottled water service will be discontinued to the remaining two residences where laboratory analysis of water samples from their potable wells indicates that petroleum constituents have not been detected for the past three years.

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16.0 CAP IMPLEMENTATION SCHEDULE

As requested by the VADEQ, a timeline with projected milestones for the implementation of the CAP is included as **Figure 14**. The timeline includes the major project milestones and associated estimated time of completion associated with the temporary SVE system, pre-design aquifer test, and proposed additional site characterization activities leading to the CAP Addendum. The timeline for the installation and operation of the temporary SVE system is dependent on timely zoning / permit approvals and the availability of an electrical service. The proposed additional site characterization activities and ultimately the CAP Addendum to establish a dissolved phase MTBE endpoint is wholly dependent upon the grant of off-site access to Fairfax. The timeline presented has allocated 60 days to secure off-site access; however, delays may be incurred as the result of negotiation of reasonable access terms and conditions with the property owners. The VADEQ will be contacted if there are significant changes to the proposed implementation schedule.

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17.0 REFERENCES

Bradley, P.M., F.H. Chapelle, and J.E. Landmeyer. Effect of Redox Conditions on MTBE Biodegradation in Surface Water Sediments. Environmental Science and Technology, vol. 35, no. 23, 2001, pp. 4643-4647.

Drake, A. A., Jr., and Lee, K. Y., (1989), Geologic map of the Vienna Quadrangle, Fairfax County, Virginia, and Montgomery County, Maryland: U. S. Geological Survey, Geologic Quadrangle Map GQ-1670, scale 1:24,000

Drake, A. A., Jr., Southworth, S., and Lee, K. Y., (1999), Geologic map of the Seneca Quadrangle, Montgomery County, Maryland, and Fairfax and Counties, Virginia: U. S. Geological Survey, Geologic Quadrangle Map GQ-1802, scale 1:24,000

Earth Resolutions, Inc. (2009), Phase II Environmental Site Assessment Report: ExxonMobil Station #2-6140, 9901 Georgetown Pike, Great Falls, Virginia

EPA (1997), Fact Sheet, Drinking Water Advisory: Consumer Acceptability Advice and Health Effects Analysis on Methyl Tertiary-Butyl Ether (MTBE): U. S. Environmental Protection Agency

Groundwater and Environmental Services, Inc. (2009), Site Characterization Report: ExxonMobil Station #2-6140, 9901 Georgetown Pike, Great Falls, Virginia

Groundwater and Environmental Services, Inc. (2010), Remediation Feasibility Report: ExxonMobil Station #2-6140, 9901 Georgetown Pike, Great Falls, Virginia

Heath, R. C. (1984) Ground-Water Regions of the United States: U. S. Geological Survey, Geological Survey Water-Supply Paper 2242

Kleinfelder East, Inc. (2010a), Post Site Characterization Monitoring Report: Fairfax Facility #26140, 9901 Georgetown Pike, Great Falls, Virginia

Kleinfelder East, Inc. (2010b), Post Site Characterization Monitoring Report: Fairfax Facility #26140, 9901 Georgetown Pike, Great Falls, Virginia

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Kleinfelder East, Inc. (2011b), Post Site Characterization Monitoring Report: Fairfax Facility #26140, 9901 Georgetown Pike, Great Falls, Virginia

Kleinfelder East, Inc. (2011c), Post Site Characterization Monitoring Report: Fairfax Facility #26140, 9901 Georgetown Pike, Great Falls, Virginia

Kleinfelder East, Inc. (2012), Post Site Characterization Monitoring Report: Fairfax Facility #26140, 9901 Georgetown Pike, Great Falls, Virginia

Virginia Department of Environmental Quality (2008), Virginia Voluntary Remediation Program Vapor Intrusion Screening Fact Sheet

Wiedemeiner, Todd (1995), Technical Protocol for Implementing Intrinsic Remediation with Long-Term Monitoring for Natural Attenuation of Fuel Contamination Dissolved in Groundwater, United States Air Force Center for Environmental Excellence (AFCEE)

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18.0 LIMITATIONS

This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. Our conclusions, opinions and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no other representation, guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

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Figures

0 350 700 1,400 Feet

N

LEGEND

APPROXIMATE SITE LOCATION

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FILE NAME:	26140_RAM_022210.mxd

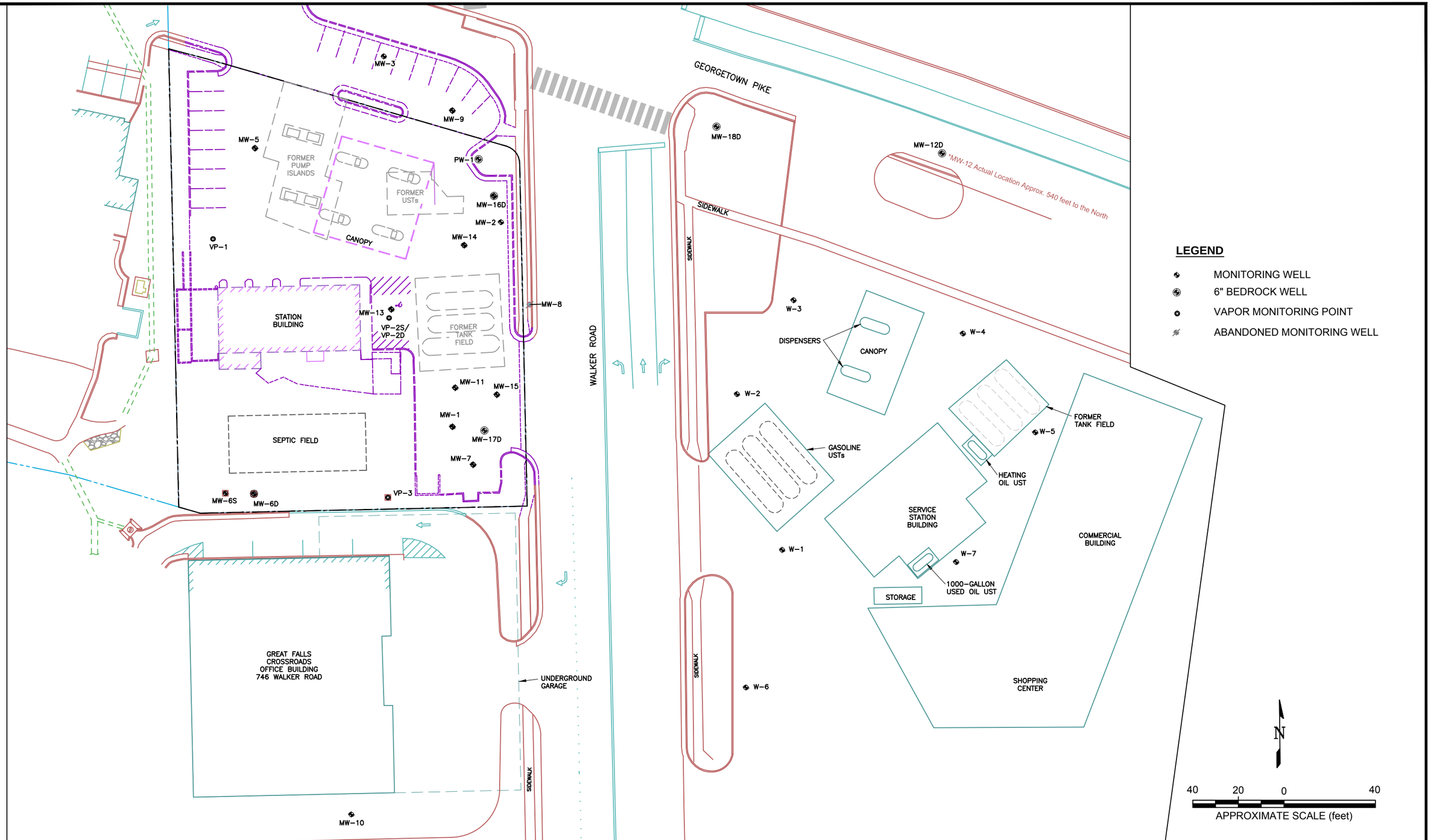
REGIONAL AREA MAP

INACTIVE FAIRFAX FACILITY # 26140
9901 GEORGETOWN PIKE
GREAT FALLS, VIRGINIA

FIGURE

1

G:\Projects\26140_Great_Falls\GIS\26140_RAM_022210.mxd



LEGEND

- MONITORING WELL
- 6" BEDROCK WELL
- VAPOR MONITORING POINT
- ABANDONED MONITORING WELL

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FILE NAME: 26140_SP_103113.dwg	

SITE PLAN

INACTIVE FAIRFAX FACILITY #26140
9901 GEORGETOWN PIKE
GREAT FALLS, VIRGINIA

FIGURE 2

PLOTTED: 21 Nov 2013, 12:54pm, pdan
LAYOUT: Fig 2
CAD FILE: C:\Users\pdan\appdata\local\temp\AcPublish_5764\
XRef: X-Exst-S107520
ATTACHED IMAGES:
ATTACHED XREFS:
ALBUQUERQUE, NM

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0 175 350 700 Feet

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LOCAL AREA MAP

INACTIVE FAIRFAX FACILITY # 26140
9901 GEORGETOWN PIKE
GREAT FALLS, VIRGINIA

FIGURE
3

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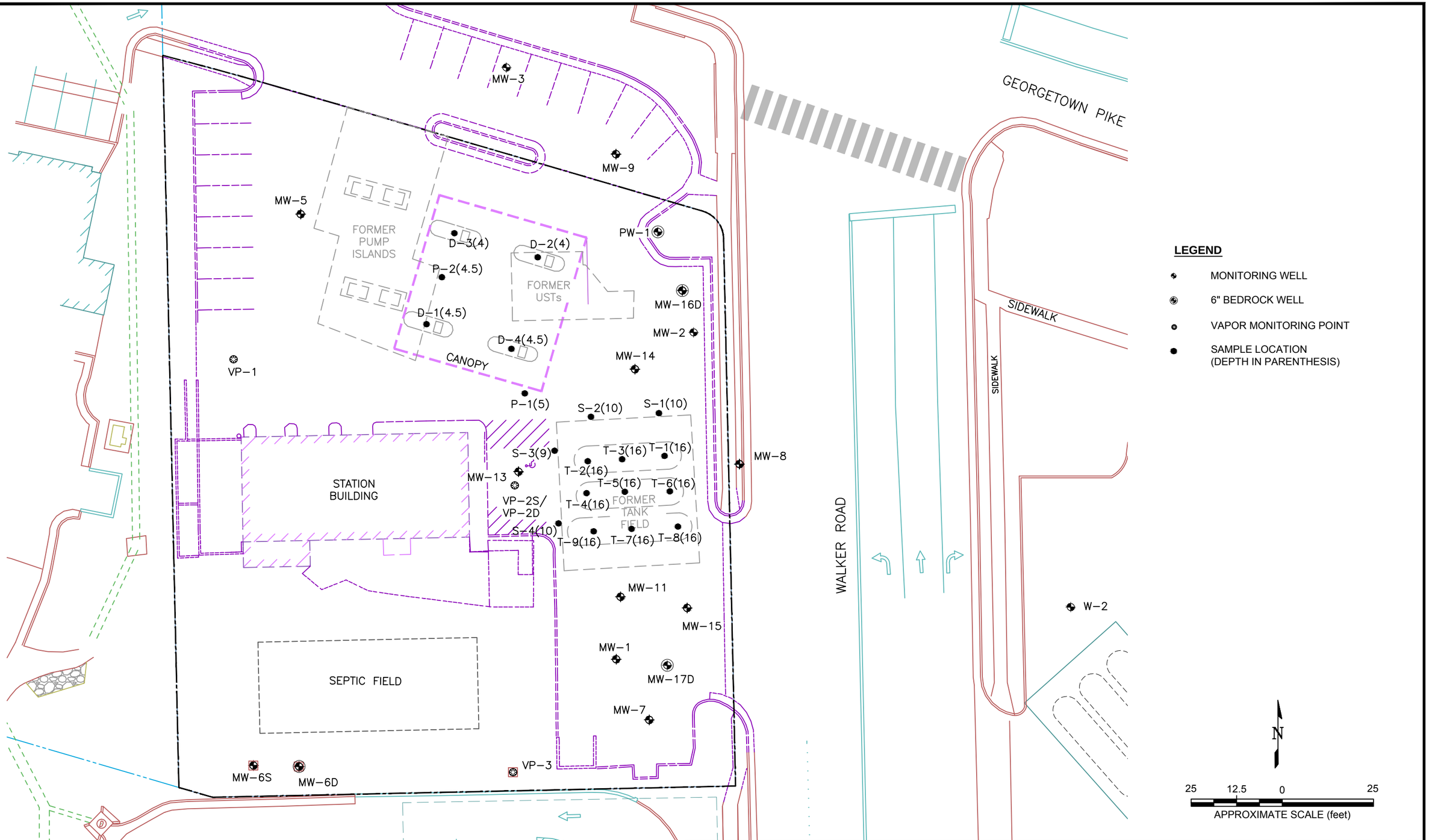

LEGEND

- MONITORING WELL
- 6" BEDROCK WELL
- VAPOR MONITORING POINT
- SAMPLE LOCATION (DEPTH IN PARENTHESIS)

PLOTTED: 21 Nov 2013, 12:37pm, pdan

LAYOUT: Fig 4

CAD FILE: C:\Users\pdan\appdata\local\temp\AcPublish_5764\

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ATTACHED XREFS: XRef: X-Exst-S107520
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NOTE: BASE PLAN PROVIDED BY BOHLER ENGINEERING.

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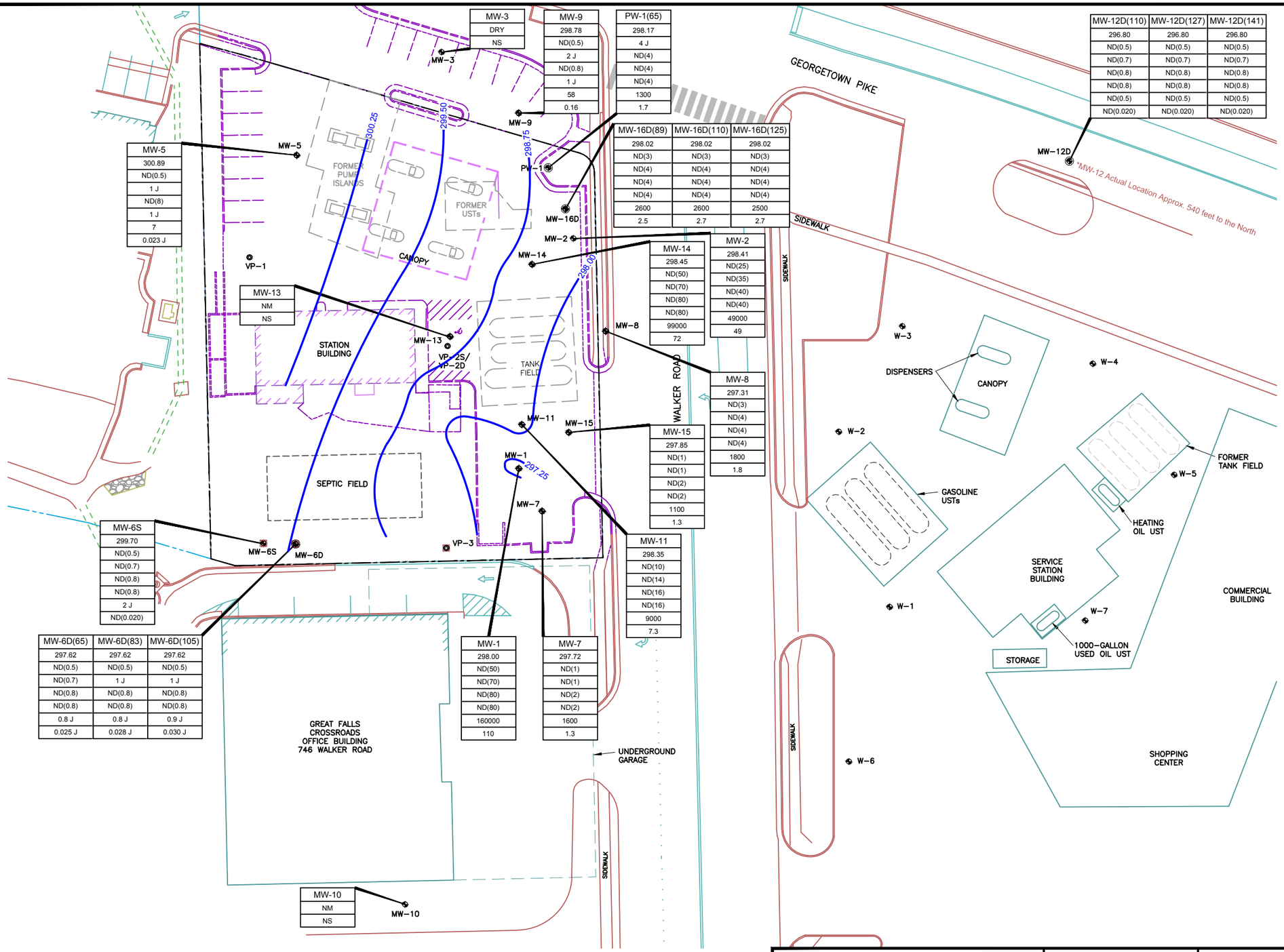
UST SYSTEM REMOVAL
SOIL SAMPLING MAP
AUGUST 29, 2012

INACTIVE FAIRFAX FACILITY #26140
9901 GEORGETOWN PIKE
GREAT FALLS, VIRGINIA

FIGURE
4



MW-3
DRY
NS

MW-9
298.78
ND(0.5)
2 J
ND(0.8)
1 J
58
0.16

PW-1(65)
298.17
4 J
ND(4)
ND(4)
ND(4)
1300
1.7

MW-12D(110)	MW-12D(127)	MW-12D(141)
296.80	296.80	296.80
ND(0.5)	ND(0.5)	ND(0.5)
ND(0.7)	ND(0.7)	ND(0.7)
ND(0.8)	ND(0.8)	ND(0.8)
ND(0.8)	ND(0.8)	ND(0.8)
ND(0.5)	ND(0.5)	ND(0.5)
ND(0.020)	ND(0.020)	ND(0.020)

MW-16D(89)	MW-16D(110)	MW-16D(125)
298.02	298.02	298.02
ND(3)	ND(3)	ND(3)
ND(4)	ND(4)	ND(4)
ND(4)	ND(4)	ND(4)
ND(4)	ND(4)	ND(4)
2600	2600	2500
2.5	2.7	2.7

MW-5
300.89
ND(0.5)
1 J
ND(8)
1 J
7
0.023 J

MW-14
298.45
ND(50)
ND(70)
ND(80)
ND(80)
99000
72

MW-2
298.41
ND(25)
ND(35)
ND(40)
ND(40)
49000
49

MW-13
NM
NS

MW-8
297.31
ND(3)
ND(4)
ND(4)
ND(4)
1800
1.8

MW-15
297.85
ND(1)
ND(1)
ND(2)
ND(2)
1100
1.3

MW-11
298.35
ND(10)
ND(14)
ND(16)
ND(16)
9000
7.3

MW-6S
299.70
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
2 J
ND(0.020)

MW-6D(65)	MW-6D(83)	MW-6D(105)
297.62	297.62	297.62
ND(0.5)	ND(0.5)	ND(0.5)
ND(0.7)	1 J	1 J
ND(0.8)	ND(0.8)	ND(0.8)
ND(0.8)	ND(0.8)	ND(0.8)
0.8 J	0.8 J	0.9 J
0.025 J	0.028 J	0.030 J

MW-1
298.00
ND(50)
ND(70)
ND(80)
ND(80)
160000
110

MW-7
297.72
ND(1)
ND(1)
ND(2)
ND(2)
1600
1.3

MW-10
NM
NS

LEGEND

- MONITORING WELL
- 6" BEDROCK WELL
- VAPOR MONITORING POINT
- GROUNDWATER CONTOUR CONTOUR INTERVAL =0.75 FEET
- GROUNDWATER FLOW DIRECTION

MW-1	WELL IDENTIFICATION
298.00	GROUNDWATER ELEVATION
ND(50)	BENZENE (µg/L)
ND(70)	TOLUENE (µg/L)
ND(80)	ETHYLBENZENE ((µg/L)
ND(80)	TOTAL XYLENES (µg/L)
160000	MTBE (µg/L)
110	TPH-GRO (mg/L)

µg/L = MICROGRAMS PER LITER
mg/L = MILLIGRAMS PER LITER
J = ESTIMATED VALUE
ND = NOT DETECTED (REPORTING LIMIT)
NS = NOT SAMPLED
NSVD = NOT SURVEYED
MTBE = METHYL TERT BUTYL ETHER
TPH = TOTAL PETROLEUM HYDROCARBONS
GRO = GASOLINE RANGE ORGANICS

NOTES:
MW-6D, MW-12D, MW-16D, AND PW-1 WERE NOT USED TO CALCULATE GROUNDWATER CONTOURS.

MW-10 AND MW-13 WERE NOT SAMPLED.

MW-6D, MW-12D, AND MW-16D WERE SAMPLED AT DIFFERENT INTERVALS. (FEET BELOW SURFACE IN PARENTHESIS).

MW-6D, MW-12D, AND MW-16D WERE SAMPLED ON DECEMBER 22, 2011.

N

40 20 0 40
APPROXIMATE SCALE (feet)

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HYDROCARBON DISTRIBUTION/ GROUNDWATER CONTOUR MAP DECEMBER 29, 2011

INACTIVE FAIRFAX FACILITY #26140
9901 GEORGETOWN PIKE
GREAT FALLS, VIRGINIA

FIGURE
5

PLOTTED: 21 Nov 2013, 12:53pm, pdan
LAYOUT: Fig 5
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XRef: X-Exst-S107520
ATTACHED IMAGES:
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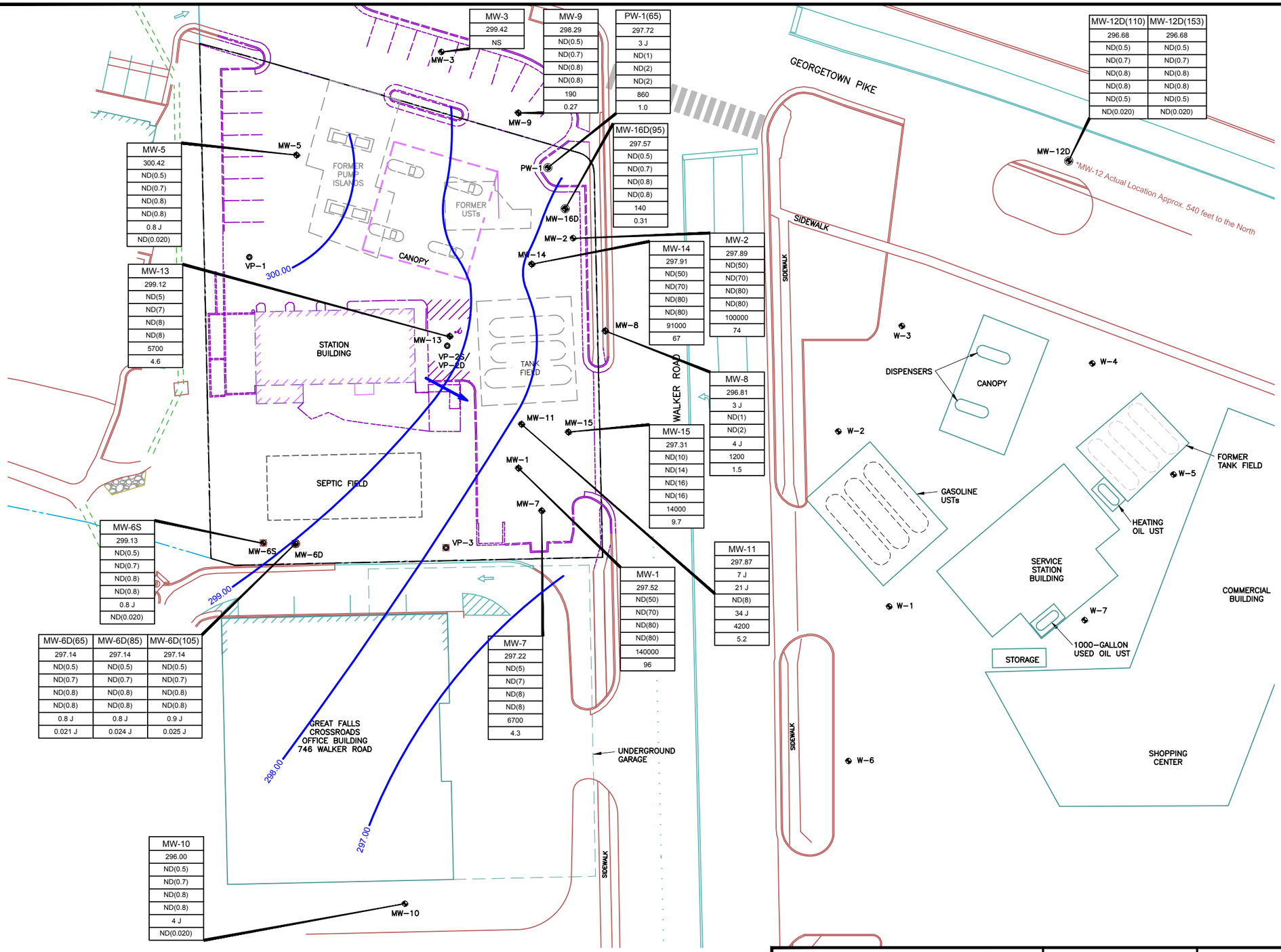
ALBUQUERQUE, NM



MW-3
299.42
NS

MW-9
298.29
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
190
0.27

PW-1(65)
297.72
3 J
ND(1)
ND(2)
ND(2)
860
1.0

MW-12D(110)	MW-12D(153)
296.68	296.68
ND(0.5)	ND(0.5)
ND(0.7)	ND(0.7)
ND(0.8)	ND(0.8)
ND(0.8)	ND(0.8)
ND(0.5)	ND(0.5)
ND(0.020)	ND(0.020)

MW-5
300.42
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
0.8 J
ND(0.020)

MW-16D(95)
297.57
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
140
0.31

MW-14
297.91
ND(50)
ND(70)
ND(80)
ND(80)
91000
67

MW-2
297.89
ND(50)
ND(70)
ND(80)
ND(80)
100000
74

MW-13
299.12
ND(5)
ND(7)
ND(8)
ND(8)
5700
4.6

MW-8
296.81
3 J
ND(1)
ND(2)
4 J
1200
1.5

MW-15
297.31
ND(10)
ND(14)
ND(16)
ND(16)
14000
9.7

MW-11
297.87
7 J
21 J
ND(8)
34 J
4200
5.2

MW-6S
299.13
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
0.8 J
ND(0.020)

MW-1
297.52
ND(50)
ND(70)
ND(80)
ND(80)
140000
96

MW-6D(65)	MW-6D(85)	MW-6D(105)
297.14	297.14	297.14
ND(0.5)	ND(0.5)	ND(0.5)
ND(0.7)	ND(0.7)	ND(0.7)
ND(0.8)	ND(0.8)	ND(0.8)
ND(0.8)	ND(0.8)	ND(0.8)
0.8 J	0.8 J	0.9 J
0.021 J	0.024 J	0.025 J

MW-7
297.22
ND(5)
ND(7)
ND(8)
ND(8)
6700
4.3

MW-10
296.00
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
4 J
ND(0.020)

LEGEND

- MONITORING WELL
- 6" BEDROCK WELL
- VAPOR MONITORING POINT
- GROUNDWATER CONTOUR — CONTOUR INTERVAL = 1.00 FEET
- GROUNDWATER FLOW DIRECTION

MW-11	WELL IDENTIFICATION
297.87	GROUNDWATER ELEVATION
7 J	BENZENE (µg/L)
21 J	TOLUENE (µg/L)
ND(8)	ETHYLBENZENE ((µg/L)
34 J	TOTAL XYLENES (µg/L)
4200	MTBE (µg/L)
5.2	TPH-GRO (mg/L)

µg/L = MICROGRAMS PER LITER
mg/L = MILLIGRAMS PER LITER
J = ESTIMATED VALUE
ND = NOT DETECTED (REPORTING LIMIT)
NS = NOT SAMPLED
MTBE = METHYL TERT BUTYL ETHER
TPH = TOTAL PETROLEUM HYDROCARBONS
GRO = GASOLINE RANGE ORGANICS

NOTES:
MW-6D, MW-12D, MW-16D, AND PW-1 WERE NOT USED TO CALCULATE GROUNDWATER CONTOURS.

MW-6D, MW-12D, AND MW-16D WERE SAMPLED AT DIFFERENT INTERVALS. (FEET BELOW SURFACE IN PARENTHESIS).

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HYDROCARBON DISTRIBUTION/
GROUNDWATER CONTOUR MAP
JUNE 1, 2012

INACTIVE FAIRFAX FACILITY #26140
9901 GEORGETOWN PIKE
GREAT FALLS, VIRGINIA

FIGURE
6

PLOTTED: 21 Nov 2013, 12:52pm, pdan
LAYOUT: Fig 6
CAD FILE: C:\Users\pdan\appdata\local\temp\AcPublish_5764\
XREF: X-Exst-S107520
ATTACHED IMAGES:
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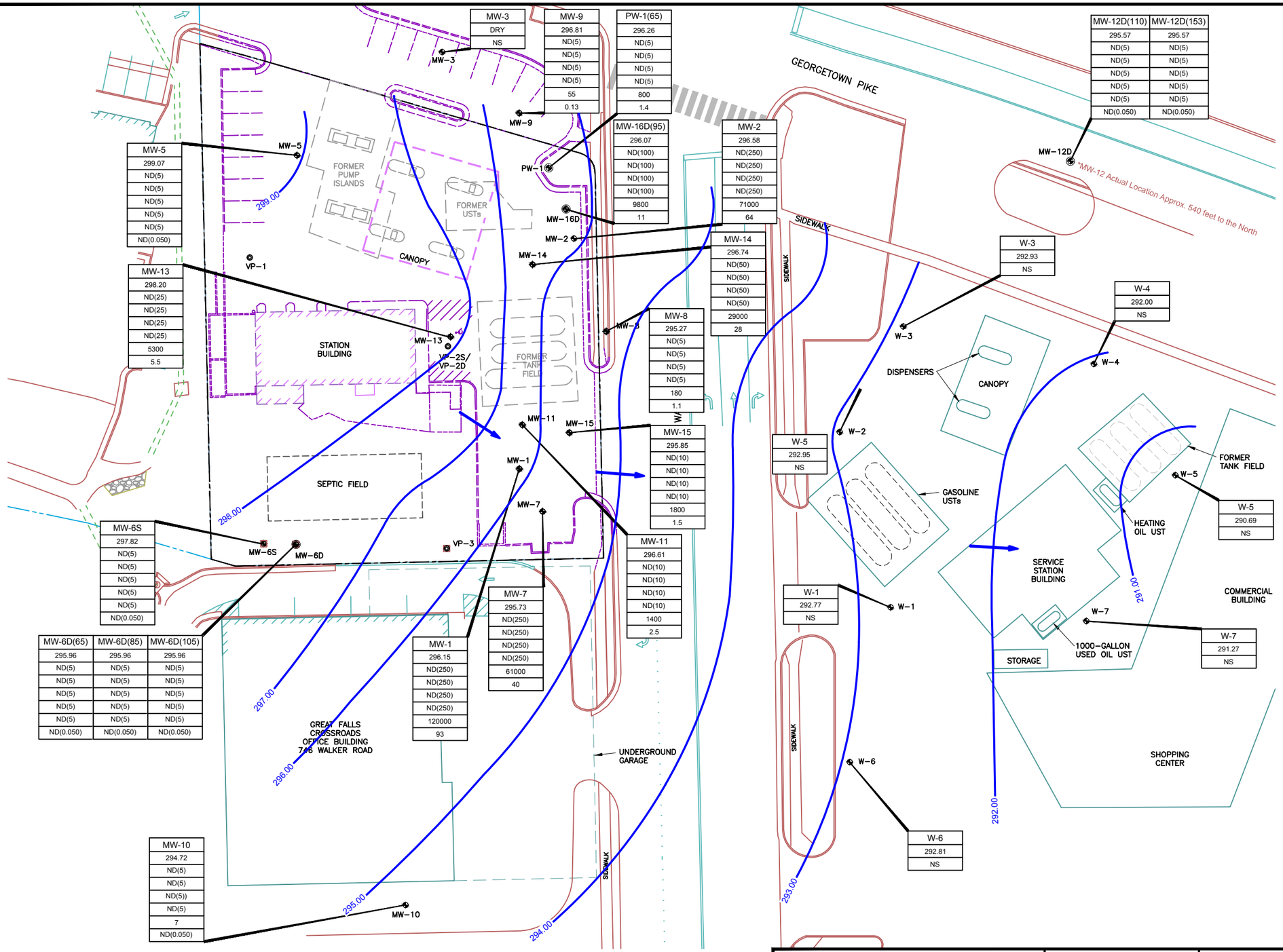
ALBUQUERQUE, NM



LEGEND

- MONITORING WELL
- 6" BEDROCK WELL
- VAPOR MONITORING POINT
- GROUNDWATER CONTOUR CONTOUR INTERVAL =1.00 FEET
- GROUNDWATER FLOW DIRECTION

MW-11	WELL IDENTIFICATION
296.61	GROUNDWATER ELEVATION
ND(10)	BENZENE (µg/L)
ND(10)	TOLUENE (µg/L)
ND(10)	ETHYLBENZENE ((µg/L)
ND(10)	TOTAL XYLENES (µg/L)
1400	MTBE (µg/L)
2.5	TPH-GRO (mg/L)

µg/L = MICROGRAMS PER LITER
mg/L = MILLIGRAMS PER LITER
J = ESTIMATED VALUE
ND = NOT DETECTED (REPORTING LIMIT)
NS = NOT SAMPLED
MTBE = METHYL TERT BUTYL ETHER
TPH = TOTAL PETROLEUM HYDROCARBONS
GRO = GASOLINE RANGE ORGANICS

NOTES:
MW-6D, MW-12D, MW-16D, AND PW-1 WERE NOT USED TO CALCULATE GROUNDWATER CONTOURS.

MW-6D AND MW-12D WERE SAMPLED AT DIFFERENT INTERVALS. (FEET BELOW SURFACE IN PARENTHESIS).

N

40 20 0 40
APPROXIMATE SCALE (feet)

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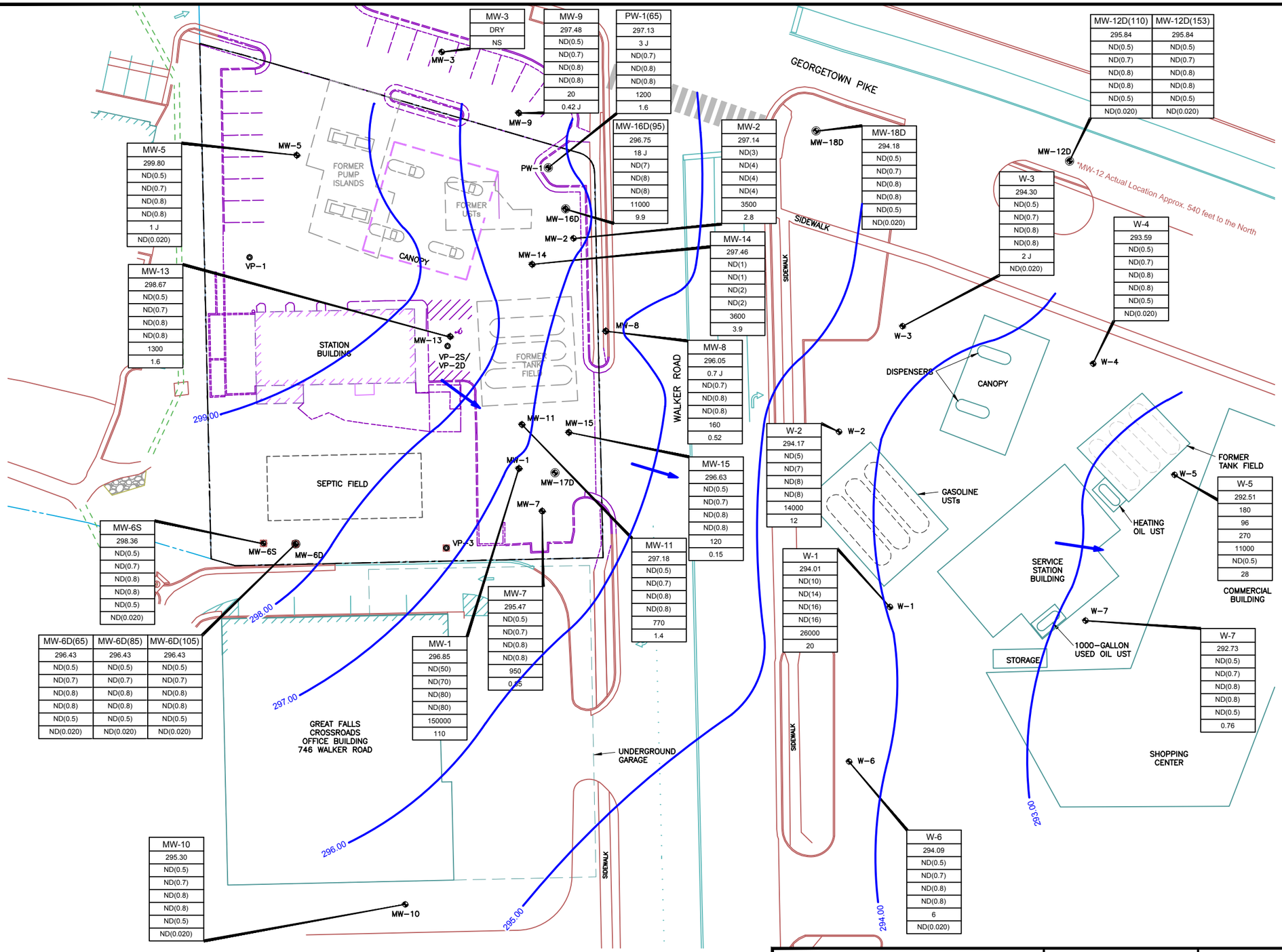
FILE NAME:	26140_SP_103113.dwg

HYDROCARBON DISTRIBUTION/
GROUNDWATER CONTOUR MAP
FEBRUARY 25, 2013

INACTIVE FAIRFAX FACILITY #26140
9901 GEORGETOWN PIKE
GREAT FALLS, VIRGINIA

FIGURE
7

PLOTTED: 21 Nov 2013, 12:51pm, pdan
LAYOUT: Fig 7
CAD FILE: C:\Users\pdan\appdata\local\temp\AcPublish_5764\
XRef: X-Exst-S107520
ATTACHED IMAGES:
ATTACHED XREFS:
ALBUQUERQUE, NM



MW-3
DRY
NS

MW-9
297.48
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
20
0.42 J

PW-1(65)
297.13
3 J
ND(0.7)
ND(0.8)
ND(0.8)
1200
1.6

MW-12D(110)	MW-12D(153)
295.84	295.84
ND(0.5)	ND(0.5)
ND(0.7)	ND(0.7)
ND(0.8)	ND(0.8)
ND(0.8)	ND(0.8)
ND(0.5)	ND(0.5)
ND(0.020)	ND(0.020)

MW-5
299.80
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
1 J
ND(0.020)

MW-16D(95)
296.75
18 J
ND(7)
ND(8)
ND(8)
11000
9.9

MW-2
297.14
ND(3)
ND(4)
ND(4)
ND(4)
3500
2.8

MW-18D
294.18
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
ND(0.5)
ND(0.020)

W-3
294.30
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
2 J
ND(0.020)

W-4
293.59
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
ND(0.5)
ND(0.020)

MW-14
297.46
ND(1)
ND(1)
ND(2)
ND(2)
3600
3.9

MW-13
298.67
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
1300
1.6

MW-8
296.05
0.7 J
ND(0.7)
ND(0.8)
ND(0.8)
160
0.52

MW-15
296.63
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
120
0.15

W-2
294.17
ND(5)
ND(7)
ND(8)
ND(8)
14000
12

W-5
292.51
180
96
270
11000
ND(0.5)
28

MW-11
297.18
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
770
1.4

W-1
294.01
ND(10)
ND(14)
ND(16)
ND(16)
26000
20

MW-6S
298.36
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
ND(0.5)
ND(0.020)

MW-7
295.47
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
950
0.85

MW-1
296.85
ND(50)
ND(70)
ND(80)
ND(80)
150000
110

W-7
292.73
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
ND(0.5)
0.76

MW-6D(65)	MW-6D(85)	MW-6D(105)
296.43	296.43	296.43
ND(0.5)	ND(0.5)	ND(0.5)
ND(0.7)	ND(0.7)	ND(0.7)
ND(0.8)	ND(0.8)	ND(0.8)
ND(0.8)	ND(0.8)	ND(0.8)
ND(0.5)	ND(0.5)	ND(0.5)
ND(0.020)	ND(0.020)	ND(0.020)

W-6
294.09
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
6
ND(0.020)

MW-10
295.30
ND(0.5)
ND(0.7)
ND(0.8)
ND(0.8)
ND(0.5)
ND(0.020)

LEGEND

- MONITORING WELL
- 6" BEDROCK WELL
- VAPOR MONITORING POINT
- GROUNDWATER CONTOUR CONTOUR INTERVAL = 1.00 FEET
- GROUNDWATER FLOW DIRECTION

MW-11	WELL IDENTIFICATION
297.18	GROUNDWATER ELEVATION
ND(0.5)	BENZENE (µg/L)
ND(0.7)	TOLUENE (µg/L)
ND(0.8)	ETHYLBENZENE ((µg/L)
ND(0.8)	TOTAL XYLENES (µg/L)
770	MTBE (µg/L)
1.4	TPH-GRO (mg/L)

µg/L = MICROGRAMS PER LITER
mg/L = MILLIGRAMS PER LITER
J = ESTIMATED VALUE
ND = NOT DETECTED (REPORTING LIMIT)
MTBE = METHYL TERT BUTYL ETHER
TPH = TOTAL PETROLEUM HYDROCARBONS
GRO = GASOLINE RANGE ORGANICS

NOTES:
MW-6D, MW-12D, MW-16D, AND PW-1 WERE NOT USED TO CALCULATE GROUNDWATER CONTOURS.

MW-6D AND MW-12D WERE SAMPLED AT DIFFERENT INTERVALS. (FEET BELOW SURFACE IN PARENTHESIS).

INSUFFICIENT WATER TO COLLECT SAMPLE FROM MW-3.

N

40 20 0 40
APPROXIMATE SCALE (feet)

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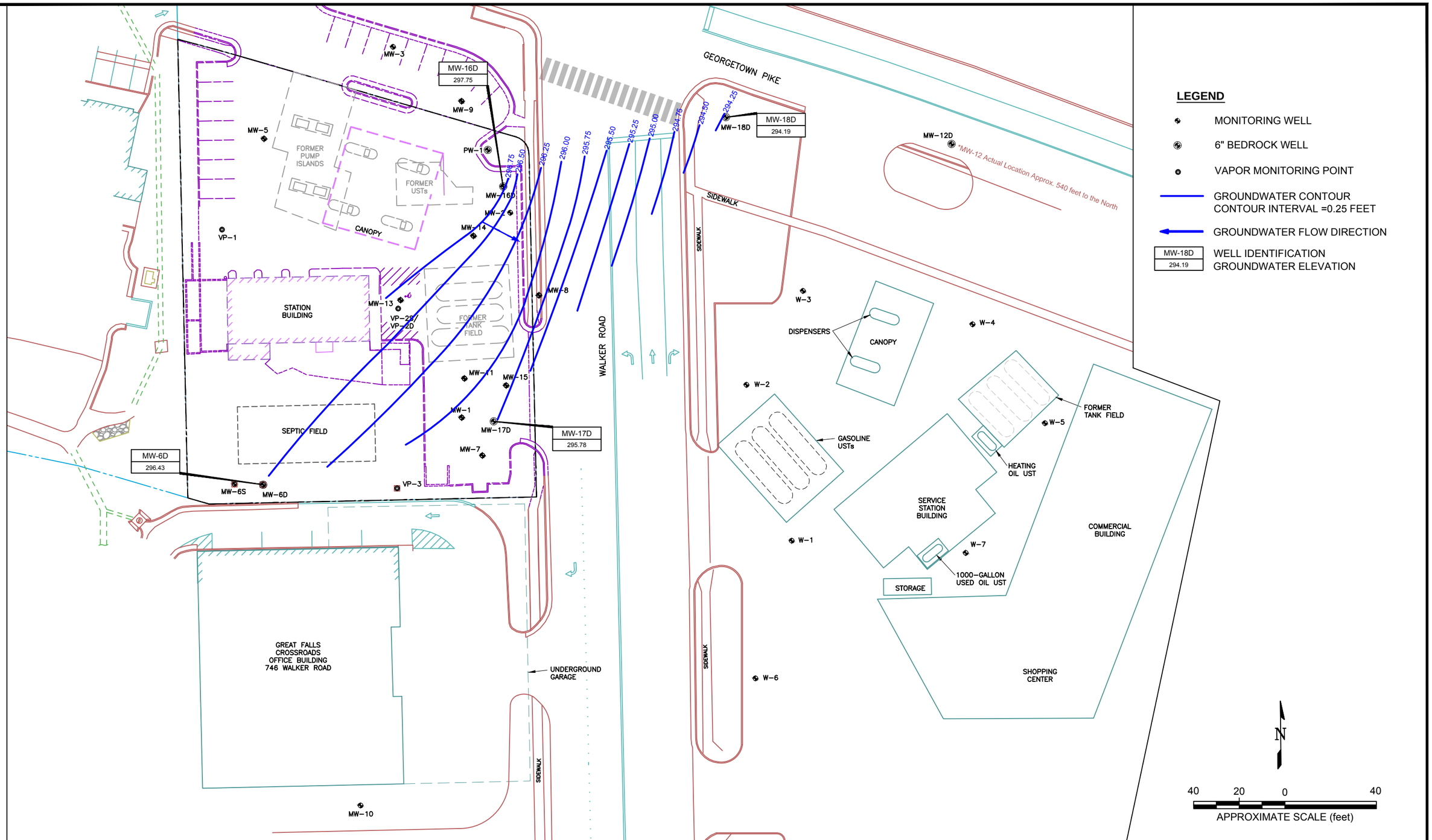
FILE NAME: 26140_SP_103113.dwg	

HYDROCARBON DISTRIBUTION/ GROUNDWATER CONTOUR MAP JUNE 6-7, 2013

INACTIVE FAIRFAX FACILITY #26140
9901 GEORGETOWN PIKE
GREAT FALLS, VIRGINIA

FIGURE
8

PLOTTED: 21 Nov 2013, 12:48pm, pdan
LAYOUT: Fig 8
CAD FILE: C:\Users\pdan\appdata\local\temp\AcPublish_5764\
XRef: X-Exst-S107520
ATTACHED IMAGES:
ATTACHED XREFS:
ALBUQUERQUE, NM



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DEEP MONITORING WELL
POTENTIOMETRIC SURFACE MAP
JUNE 6-7, 2013

INACTIVE FAIRFAX FACILITY #26140
9901 GEORGETOWN PIKE
GREAT FALLS, VIRGINIA

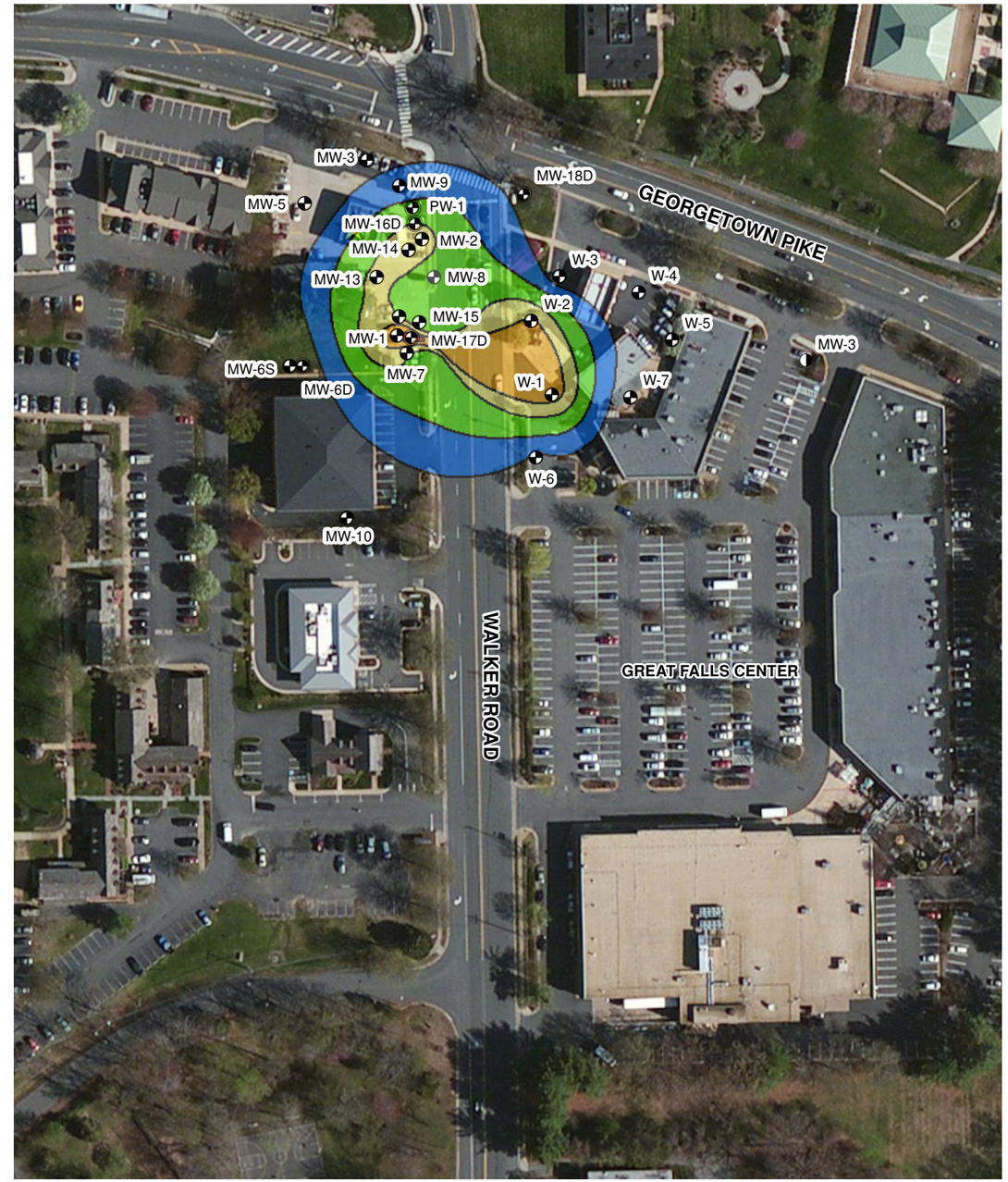
FIGURE
9

PLOTTED: 21 Nov 2013, 12:48pm, pdan
LAYOUT: Fig 9
CAD FILE: C:\Users\pdan\appdata\local\temp\AcPublish_5764\
XRef: X-Exst-S107520
ATTACHED IMAGES:
ATTACHED XREFS:
ALBUQUERQUE, NM

October 2009

Note: MTBE concentrations utilized from wells W-1 through W-7 were collected 8/5/2008.

June 2013



LEGEND

- Site Location
- Suspected or Existing Monitoring Well Associated with Former PC94-1568
- Abandoned Monitoring Well
- Monitoring Well
- 6" Bedrock Well
- MTBE Log_{10} Isoconcentration Contour (Dashed where inferred)
- 100,000 µg/L
- 10,000 µg/L
- 1,000 µg/L
- 100 µg/L
- 10 µg/L

NOTES:
MTBE = Methyl Tert Butyl Ehter
µg/L = micrograms per liter

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Source: Aerial Image - Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

0 65 130 260 Feet

N

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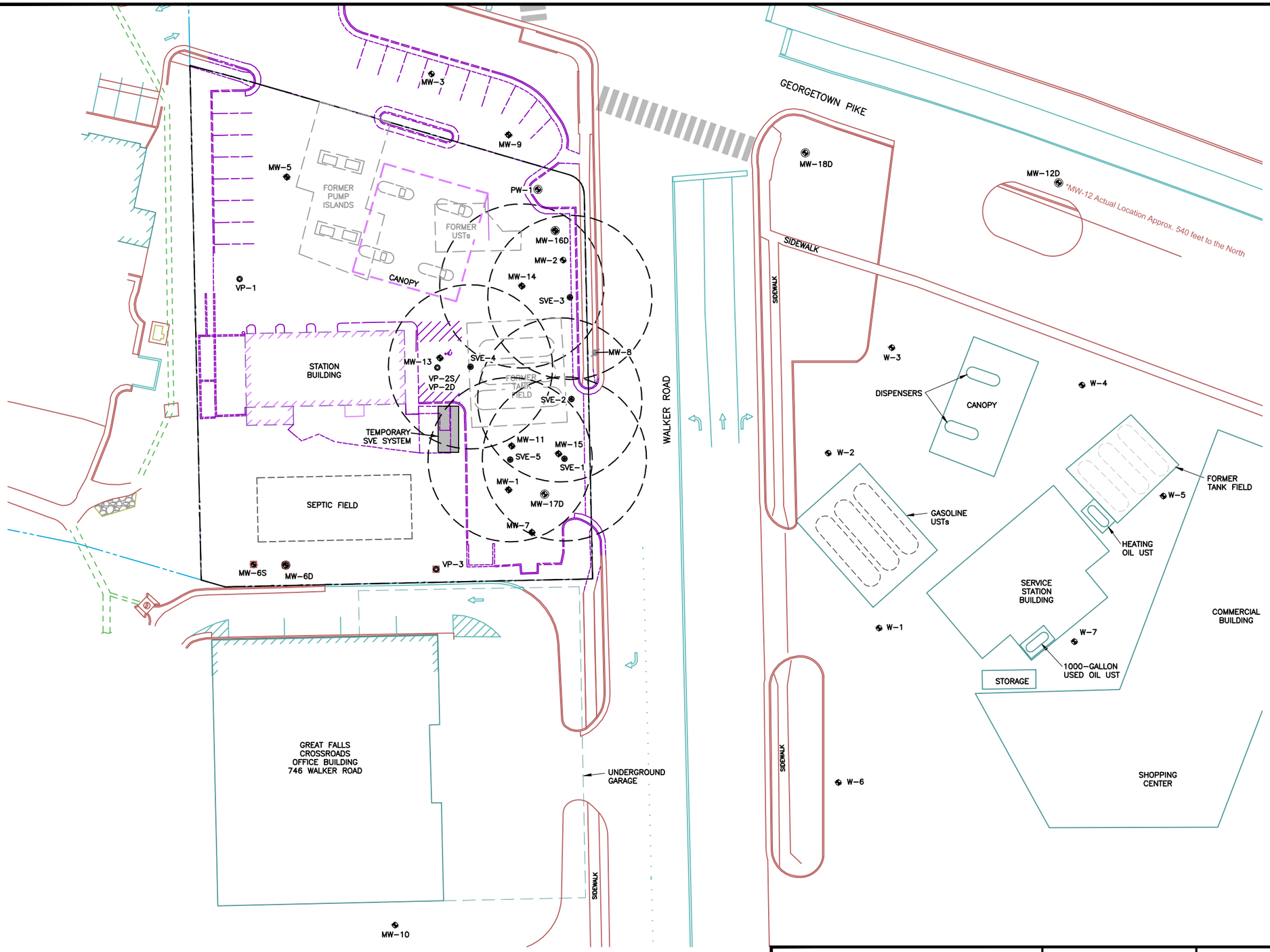
FILE NAME:	26140_PMW_L.mxd

OCTOBER 2009 AND JUNE 2013 MTBE ISOCONCENTRATION MAP

INACTIVE FAIRFAX FACILITY #26140
9901 GEORGETOWN PIKE
GREAT FALLS, VIRGINIA

FIGURE
10



LEGEND

- MONITORING WELL
- 6" BEDROCK WELL
- VAPOR MONITORING POINT
- ABANDONED MONITORING WELL
- PROPOSED SVE WELL
- VACUUM RADIUS OF INFLUENCE (32 ft)

PROPOSED SVE WELLS		
WELL ID	DIAMETER	SCREEN (FT BGS)
SVE-1	4"	15 - 35'
SVE-2	4"	20 - 45'
SVE-3	4"	15 - 35'
SVE-4	4"	20 - 35'
SVE-5	4"	15 - 35'
MW-14	4"	25 - 45'

NOTE: FT BGS = FEET BELOW GROUND SURFACE

N

40 20 0 40

APPROXIMATE SCALE (feet)

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PROPOSED SVE WELLS AND RADIUS OF INFLUENCE

INACTIVE FAIRFAX FACILITY #26140
9901 GEORGETOWN PIKE
GREAT FALLS, VIRGINIA

FIGURE 11

PLOTTED: 21 Nov 2013, 12:48pm, pdan
LAYOUT: Fig 11
CAD FILE: C:\Users\pdan\appdata\local\temp\AcPublish_5764\
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ATTACHED XREFS: XRef: X-Exst-S107520
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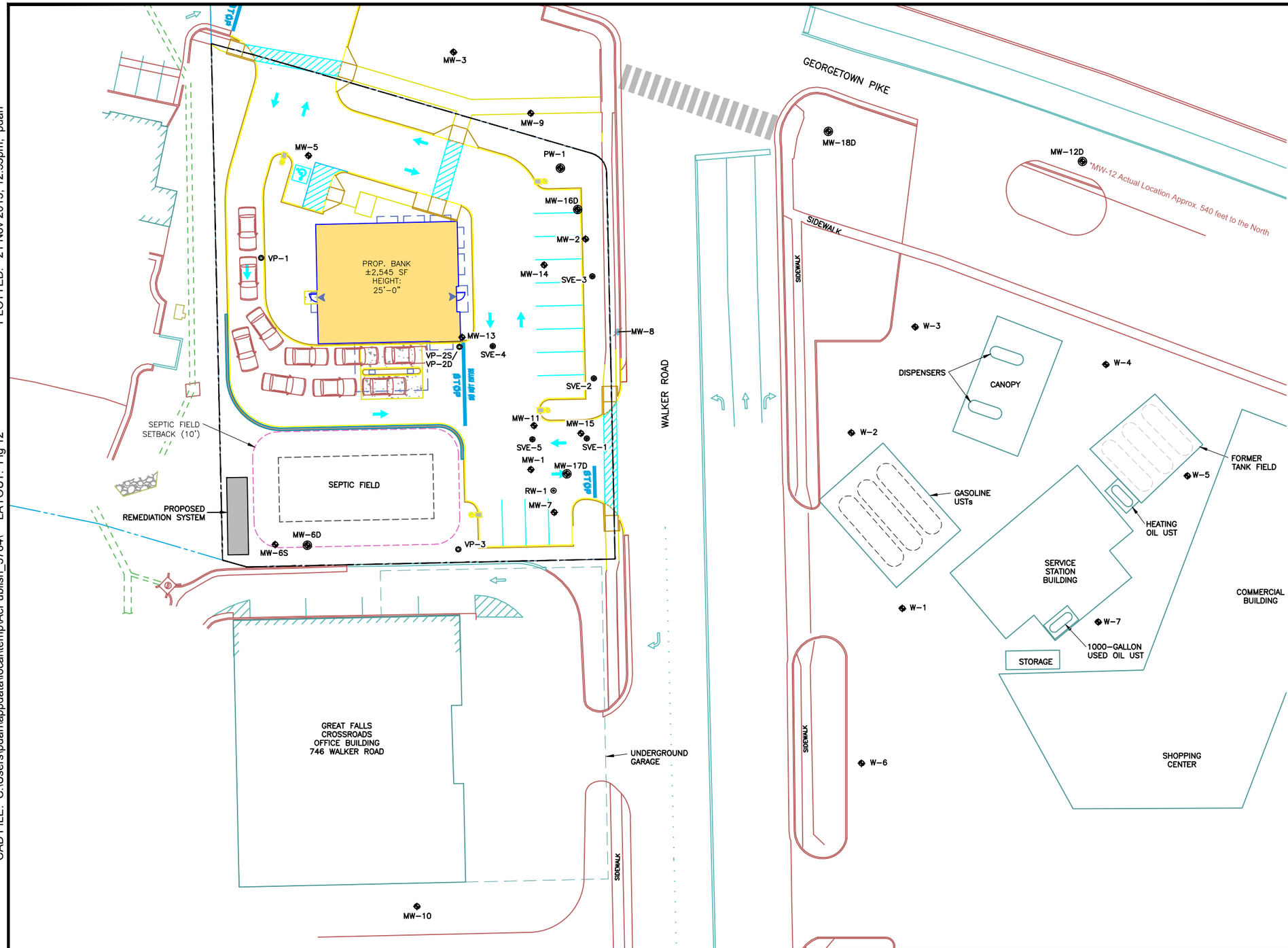

LEGEND

- MONITORING WELL
- 6" BEDROCK WELL
- VAPOR MONITORING POINT
- ABANDONED MONITORING WELL
- PROPOSED REMEDIAL WELL RW-1
- PROPOSED SVE WELL
- PROPOSED REMEDIATION SYSTEM

NOTE:
VAPOR MONITORING POINTS WILL BE ABANDONED PRIOR TO CONSTRUCTION

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NOTE: BASE PLAN PROVIDED BY BOHLER ENGINEERING.

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FILE NAME:	26140_PR.dwg

PROPOSED REMEDIATION SYSTEM LAYOUT

INACTIVE FAIRFAX FACILITY #26140
9901 GEORGETOWN PIKE
GREAT FALLS, VIRGINIA

FIGURE
12

PLOTTED: 21 Nov 2013, 12:55pm, pdan
LAYOUT: Fig 12
ATTACHED IMAGES:
ATTACHED XREFS: XRef: X-Exst-S107520: XRef: X-Prop-S10750_1
ALBUQUERQUE, NM CAD FILE: C:\Users\pdan\appdata\local\temp\AcPublish_5764\

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PROPOSED MONITORING WELL LOCATION PLAN

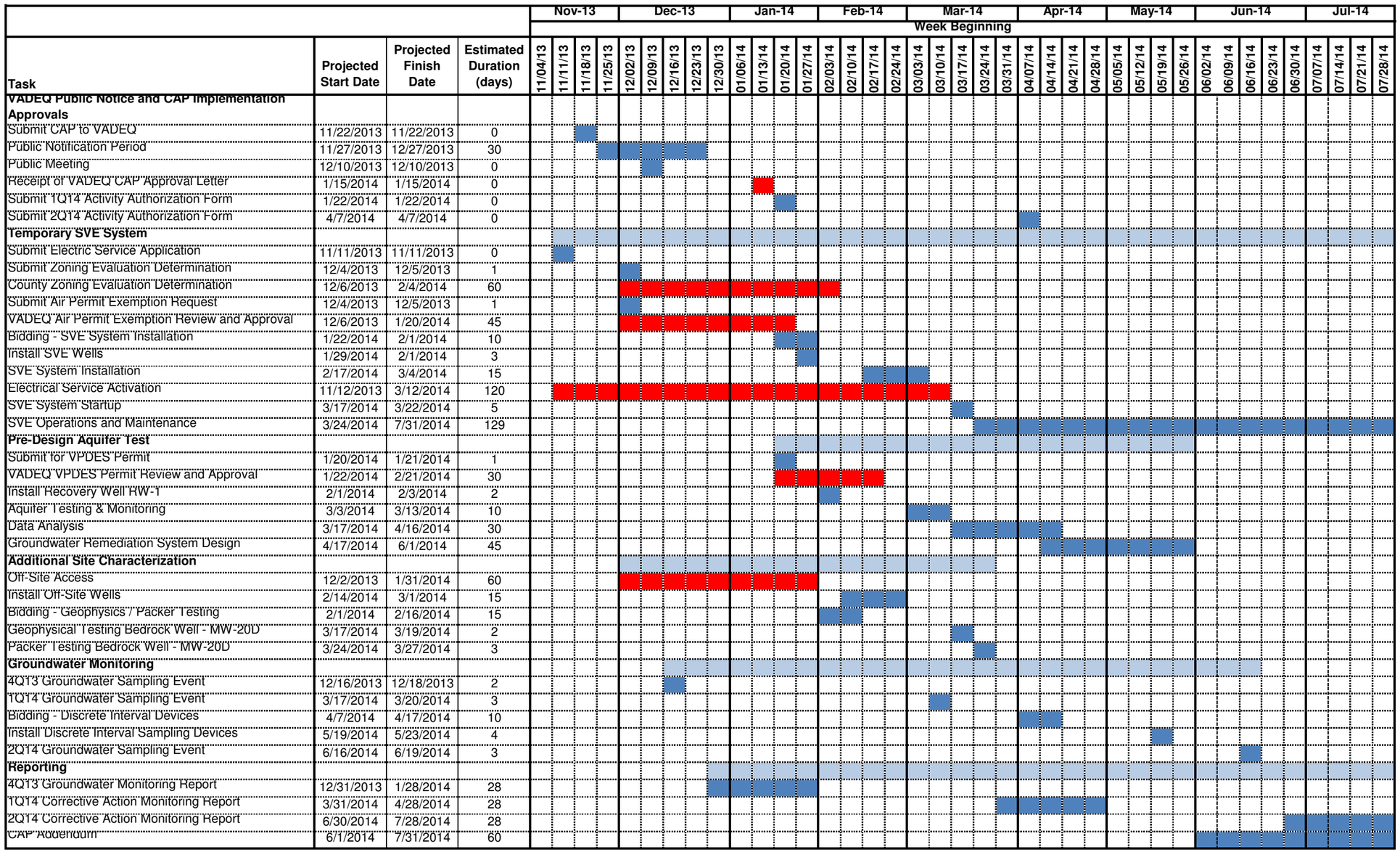
INACTIVE FAIRFAX FACILITY #26140
9901 GEORGETOWN PIKE
GREAT FALLS, VIRGINIA

FIGURE
13

Figure 14
CAP Implementation Schedule

Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia

Task	Projected Start Date	Projected Finish Date	Estimated Duration (days)
VADEQ Public Notice and CAP Implementation Approvals			
Submit CAP to VADEQ	11/22/2013	11/22/2013	0
Public Notification Period	11/27/2013	12/27/2013	30
Public Meeting	12/10/2013	12/10/2013	0
Receipt of VADEQ CAP Approval Letter	1/15/2014	1/15/2014	0
Submit 1Q14 Activity Authorization Form	1/22/2014	1/22/2014	0
Submit 2Q14 Activity Authorization Form	4/7/2014	4/7/2014	0
Temporary SVE System			
Submit Electric Service Application	11/11/2013	11/11/2013	0
Submit Zoning Evaluation Determination	12/4/2013	12/5/2013	1
County Zoning Evaluation Determination	12/6/2013	2/4/2014	60
Submit Air Permit Exemption Request	12/4/2013	12/5/2013	1
VADEQ Air Permit Exemption Review and Approval	12/6/2013	1/20/2014	45
Bidding - SVE System Installation	1/22/2014	2/1/2014	10
Install SVE Wells	1/29/2014	2/1/2014	3
SVE System Installation	2/17/2014	3/4/2014	15
Electrical Service Activation	11/12/2013	3/12/2014	120
SVE System Startup	3/17/2014	3/22/2014	5
SVE Operations and Maintenance	3/24/2014	7/31/2014	129
Pre-Design Aquifer Test			
Submit for VPDES Permit	1/20/2014	1/21/2014	1
VADEQ VPDES Permit Review and Approval	1/22/2014	2/21/2014	30
Install Recovery Well RW-1	2/1/2014	2/3/2014	2
Aquifer Testing & Monitoring	3/3/2014	3/13/2014	10
Data Analysis	3/17/2014	4/16/2014	30
Groundwater Remediation System Design	4/17/2014	6/1/2014	45
Additional Site Characterization			
Off-Site Access	12/2/2013	1/31/2014	60
Install Off-Site Wells	2/14/2014	3/1/2014	15
Bidding - Geophysics / Packer Testing	2/1/2014	2/16/2014	15
Geophysical Testing Bedrock Well - MW-20D	3/17/2014	3/19/2014	2
Packer Testing Bedrock Well - MW-20D	3/24/2014	3/27/2014	3
Groundwater Monitoring			
4Q13 Groundwater Sampling Event	12/16/2013	12/18/2013	2
1Q14 Groundwater Sampling Event	3/17/2014	3/20/2014	3
Bidding - Discrete Interval Devices	4/7/2014	4/17/2014	10
Install Discrete Interval Sampling Devices	5/19/2014	5/23/2014	4
2Q14 Groundwater Sampling Event	6/16/2014	6/19/2014	3
Reporting			
4Q13 Groundwater Monitoring Report	12/31/2013	1/28/2014	28
1Q14 Corrective Action Monitoring Report	3/31/2014	4/28/2014	28
2Q14 Corrective Action Monitoring Report	6/30/2014	7/28/2014	28
CAP Addendum	6/1/2014	7/31/2014	60



Legend:
Estimated duration of task
Estimated duration of subtask
Activity contingent upon approval by others

Tables

TABLE 1
Monitoring Well Construction Details

Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, VA

Monitoring Well	Installation Date	Well Type	Well Diameter (inch)	Top of Casing Elevation (feet)	Riser / Casing Length (feet)	Screen Length / Open Interval (feet)	Total Borehole Depth (feet below grade)	Screen / Open Interval (feet below grade)	Comments
MW-1	7/20/2009	Monitoring	2	328.99	20	17	37	20-37	
MW-2	7/21/2009	Monitoring	2	332.05	25	15	42	25-40	
MW-3	7/22/2009	Monitoring	2	333.98	25	10	35	25-35	
MW-5	7/22/2009	Monitoring	2	332.35	30	10	42	30-40	
MW-6S	9/11/2009	Monitoring	4	321.85	20	15	35	20-35	
MW-6D	9/11/2009	Deep Monitoring	6	323.09	70	50	120	70-120	Open borehole after 70 feet
MW-7	10/16/2009	Monitoring	2	327.96	15	25	40	15-40	
MW-8	10/8/2009	Monitoring	2	330.54	25	20	45	25-45	Abandoned 9/19/2013
MW-9	10/9/2009	Monitoring	2	333.46	25	20	45	25-45	
MW-10	10/12/2009	Monitoring	2	324.17	10	30	40	10-40	
MW-11	10/14/2009	Monitoring	2	329.64	10	30	40	10-40	
MW-12D	1/11/2011	Deep Monitoring	6	326.43	100	60	160	100-160	Open borehole after 100 feet
MW-13	8/18/2011	Monitoring	4	332.00	25	20	45	25-45	
MW-14	8/18/2011	Monitoring	4	331.81	25	20	45	25-45	
MW-15	8/18/2011	Monitoring	4	328.95	25	20	45	25-45	
MW-16D	11/22/2011	Monitoring	6	332.90	85	25	110	85-110	Open borehole after 85 feet.
MW-17D	4/9/2013	Deep Monitoring	6	328.99	68	82	150	68-150	Open borehole after 68 feet.
MW-18D	11/22/2011	Deep Monitoring	6	334.88	97	58	136	92-150	Open borehole after 92 feet. Borehole blocked by rock at 101 feet during testing on 4/30/13.
PW-1	Unknown	Deep Monitoring	6	328.95	55	20	75	55 - 75	Former potable well. Partially abandoned in November 2011. Original well depth was approximately 116 feet.

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1340 Charwood Road, Suite I, Hanover, MD

Table 2
Soil Analytical Data
Inactive Fairfax Facility # 26140
9901 Georgetown Pike
Great Falls, VA

Monitoring Well	Sample Interval (ft)	Date	Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Xylene (total) mg/kg	Methyl Tert Butyl Ether mg/kg	Tert Butyl Alcohol mg/kg	tert-Amyl Methyl Ether mg/kg	Di-Isopropyl Ether mg/kg	ETBE mg/kg	TPH-GRO mg/kg	TPH-DRO mg/kg
MW-1	35	7/21/2009	ND (0.022)	ND (0.012)	ND (0.0074)	ND (0.012)	7.06	NA	NA	NA	NA	5.81 J	ND (12)
MW-2	35	7/21/2009	ND (0.034)	ND (0.018)	ND (0.011)	ND (0.019)	14.2	NA	NA	NA	NA	8.45	ND (13)
MW-3	30	7/22/2009	ND (0.047)	ND (0.025)	ND (0.015)	ND (0.026)	ND (0.023)	NA	NA	NA	NA	ND (7.0)	ND (17)
MW-5	40	7/22/2009	ND (0.030)	ND (0.016)	ND (0.010)	ND (0.017)	ND (0.015)	NA	NA	NA	NA	ND (4.5)	ND (14)
MW-6S	22 - 24	9/11/2009	ND (0.0045)	NS (0.0039)	ND (0.0049)	ND (0.0062)	ND (0.0038)	NA	NA	NA	NA	NA	NA
MW-7	28 - 30	10/6/2009	ND (0.00040)	ND (0.00034)	ND (0.00043)	ND (0.00055)	0.0031	ND (0.017)	ND (0.00050)	ND (0.00025)	ND (0.00082)	NA	NA
MW-8	36 - 38	10/8/2009	ND (0.00049)	ND (0.00042)	ND (0.00053)	ND (000067)	3.00	6.24	0.0134	0.0089	ND (0.001)	NA	NA
MW-9	12 - 14	10/9/2009	ND (0.022)	ND (0.019)	ND (0.024)	ND(0.031)	ND (0.018)	ND (0.940)	ND (0.028)	ND (0.014)	ND (0.046)	NA	NA
MW-10	8 - 10	10/12/2009	ND (0.00042)	ND (0.00036)	ND (0.00046)	ND (0.00058)	ND (0.00035)	ND (0.018)	ND (0.00053)	ND (0.00026)	ND (0.00087)	NA	NA
MW-11	32 - 34	10/14/2009	ND (0.001)	ND (0.0089)	ND (0.0011)	ND (0.0014)	9.60	39	0.0212	0.0017 J	ND (0.0021)	18.4	ND (3.7)
	38 - 40	10/14/2009	ND (0.0056)	ND (0.0048)	ND (0.0061)	ND (0.0078)	1.94	8.77	0.00074 J	0.0024 J	ND (0.0012)	ND (1.6)	ND (3.8)
MW-12	45	1/11/2011	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	NA	NA	NA	NA	ND (1.2)	ND (13)
MW-13	27-29	8/23/2011	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	36	NA	NA	NA	NA	13	NA
MW-14	29-31	8/23/2011	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	7.7	NA	NA	NA	NA	2.3	NA
MW-15	33-35	8/23/2011	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	0.69	NA	NA	NA	NA	ND (0.9)	NA
S-1	10	8/29/2012	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.11)	ND (0.006)	ND (0.006)	ND (0.006)	ND (1.1)	NA
S-2	10	8/29/2012	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.12)	ND (0.006)	ND (0.006)	ND (0.006)	ND (1.2)	NA
S-3	9	8/29/2012	ND (0.007)	ND (0.007)	ND (0.007)	ND (0.007)	0.012	ND (0.14)	ND (0.007)	ND (0.007)	ND (0.007)	ND (1.3)	NA
S-4	10	8/29/2012	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.12)	ND (0.006)	ND (0.006)	ND (0.006)	ND(1.2)	NA
T-1	16	8/29/2012	0.018	0.22	0.019	0.13	0.009	ND (0.12)	ND (0.006)	ND (0.006)	ND (0.006)	2.7	NA
T-2	16	8/29/2012	ND (0.007)	0.059	ND (0.007)	0.074	0.030	0.25	ND (0.007)	0.008	ND (0.007)	ND (1.5)	NA
T-3	16	8/29/2012	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	0.028	0.72	ND (0.006)	ND (0.006)	ND (0.006)	ND (1.3)	NA
T-4	16	8/29/2012	0.013	0.034	ND (0.006)	0.16	0.056	1.4	0.011	ND (0.006)	ND (0.006)	2.2	NA
T-5	16	8/29/2012	ND (0.006)	0.008	ND (0.006)	0.025	0.013	0.63	ND (0.006)	ND (0.006)	ND (0.006)	7.4	NA
T-6	16	8/29/2012	0.016	0.084	0.008	0.11	0.019	0.73	ND (0.006)	ND (0.006)	ND (0.006)	4.5	NA
T-7	16	8/29/2012	0.037	0.04	0.014	0.19	0.028	2.6 E	0.007	ND (0.007)	ND (0.007)	21	NA
T-8	16	8/29/2012	ND (0.28)	ND (0.28)	ND (0.28)	0.51	ND (0.28)	ND (5.6)	ND (0.28)	ND (0.28)	ND (0.28)	34	NA
T-9	16	8/29/2012	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.11)	ND (0.005)	ND (0.005)	ND (0.005)	ND (1.4)	NA
P-1	5	8/29/2012	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND(0.12)	ND (0.006)	ND (0.006)	ND (0.006)	ND (1.3)	NA
P-2	4.5	8/29/2012	ND (0.27)	ND (0.27)	0.52	0.39	ND (0.27)	ND (5.4)	ND (0.27)	ND (0.27)	ND (0.27)	59	NA
D-1	4.5	8/29/2012	ND (0.007)	0.013	ND (0.007)	ND (0.007)	ND (0.007)	ND (0.15)	ND (0.007)	ND (0.007)	ND (0.007)	ND (1.0)	NA
D-2	4	8/29/2012	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.10)	ND (0.005)	ND (0.005)	ND (0.005)	ND (1.0)	NA
D-3	4	8/29/2012	0.012	0.079	ND (0.005)	0.009	0.009	ND (0.11)	ND (0.005)	ND (0.005)	ND (0.005)	ND (1.2)	NA
D-4	4.5	8/29/2012	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.11)	ND (0.005)	ND (0.005)	ND (0.005)	ND (1)	NA

NOTES
mg/Kg = Milligrams per Kilogram
ft = Feet
TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics
TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics
J = Indicates an estimated value
NA - Not analyzed
ND (0.006) - Not detected (laboratory reporting limit)
E - Concentration exceeds the calibration range of the instrument

TABLE 3

Groundwater Monitoring & Analytical Data - Shallow Wells
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia

August 5, 2008 through June 7, 2013

		Gauging Data					Analytical Data														
Sample ID	Date	Top of Casing Elevation	Depth to Water (feet)	Depth to Hydro-carbon (feet)	Hydro-carbon Thickness (feet)	Corrected GW Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Methyl Tertiary Butyl Ether (µg/L)	TPH-GRO (mg/L)	1,2-Dichloroethane (µg/L)	cis-1,2-Dichloroethylene (µg/L)	Isopropyl ether (µg/L)	Naphthalene (µg/L)	tert-Amyl methyl ether (µg/L)	tert-Butyl alcohol (µg/L)	Tetrachloroethylene (µg/L)	Trichloroethylene (µg/L)	Comments
MW-1	7/24/2009	100.00	30.45	ND	ND	69.55	13.3	<1.0	0.53	24	193000	105	NA	NA	NA	NA	NA	NA	NA	NA	
	8/18/2009	NM	NM	NM	NM	NM	ND(200)	ND(200)	ND(200)	ND(200)	138000	65.7	NA	NA	NA	NA	NA	NA	NA	NA	
	10/15/2009	328.99	31.88	ND	ND	297.11	ND(200)	ND(200)	ND(200)	ND(200)	139000	125	ND(200)	ND(200)	4070	NA	2130	47000	ND(200)	ND(200)	
	6/22/2010	328.99	28.65	ND	ND	300.34	ND(5)	ND(7)	ND(8)	ND(8)	13000	14	NA	NA	NA	NA	NA	NA	NA	NA	
	9/30/2010	328.99	31.11	ND	ND	297.88	ND(50)	ND(70)	ND(80)	110	240000	170	NA	NA	NA	NA	NA	NA	NA	NA	
	12/16/2010	328.99	30.93	ND	ND	298.06	ND(100)	ND(140)	ND(160)	ND(160)	220000	150	NA	NA	NA	NA	NA	NA	NA	NA	
	2/17/2011	328.99	31.46	ND	ND	297.53	ND(250)	ND(350)	ND(400)	ND(400)	190000	170	NA	NA	NA	NA	NA	NA	NA	NA	
	5/24/2011	328.99	30.24	ND	ND	298.75	ND(50)	ND(70)	ND(80)	ND(80)	140000	120	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	328.99	32.92	ND	ND	296.07	ND(50)	ND(70)	ND(80)	ND(80)	160000	120	NA	NA	NA	NA	NA	NA	NA	NA	
	12/29/2011	328.99	30.99	ND	ND	298.00	ND(50)	ND(70)	ND(80)	ND(80)	160000	110	NA	NA	NA	NA	NA	NA	NA	NA	
	6/1/2012	328.99	31.47	ND	ND	297.52	ND(50)	ND(70)	ND(80)	ND(80)	140000	96	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	328.99	32.84	ND	ND	296.15	ND(250)	ND(250)	ND(250)	ND(250)	120000	93	ND(250)	ND(250)	3700	ND(250)	1700	15000	ND(250)	ND(250)	
	6/6/2013	328.99	32.14	ND	ND	296.85	ND(50)	ND(70)	ND(80)	ND(80)	150000	110	NA	NA	NA	NA	NA	NA	NA	NA	
MW-2	7/24/2009	102.90	33.19	ND	ND	69.71	70.2	8.0	1.0	131	107000	59	NA	NA	NA	NA	NA	NA	NA	NA	
	8/18/2009	NM	NM	NM	NM	NM	ND(100)	ND(100)	ND(100)	ND(100)	87100	53.9	NA	NA	NA	NA	NA	NA	NA	NA	
	10/15/2009	332.05	34.41	ND	ND	297.64	ND(200)	ND(200)	ND(200)	ND(200)	122000	117	ND(200)	ND(200)	6130	NA	2420	ND(5000)	ND(200)	ND(200)	
	7/1/2010	332.05	31.63	ND	ND	300.42	ND(100)	91.3	ND(100)	ND(100)	52400	42.7	NA	NA	NA	NA	NA	NA	NA	NA	
	9/30/2010	332.05	32.96	ND	ND	299.09	ND(25)	ND(35)	ND(40)	ND(40)	37000	27	NA	NA	NA	NA	NA	NA	NA	NA	
	12/16/2010	332.05	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	Well inaccessible
	2/17/2011	332.05	34.15	ND	ND	297.90	ND(100)	ND(140)	ND(160)	ND(160)	140000	120	NA	NA	NA	NA	NA	NA	NA	NA	
	5/24/2011	332.05	32.92	ND	ND	299.13	ND(25)	ND(35)	ND(40)	ND(40)	54000	49	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	332.05	35.53	ND	ND	296.52	ND(50)	ND(70)	ND(80)	ND(80)	160000	130	NA	NA	NA	NA	NA	NA	NA	NA	
	12/29/2011	332.05	33.64	ND	ND	298.41	ND(25)	ND(35)	ND(40)	ND(40)	49000	49	NA	NA	NA	NA	NA	NA	NA	NA	
	6/1/2012	332.05	34.16	ND	ND	297.89	ND(50)	ND(70)	ND(80)	ND(80)	100000	74	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	332.05	35.47	ND	ND	296.58	ND(250)	ND(250)	ND(250)	ND(250)	71000	64	ND(250)	ND(250)	1900	ND(250)	1100	4600	ND(250)	ND(250)	
	6/6/2013	332.05	34.91	ND	ND	297.14	ND(3)	ND(4)	ND(4)	ND(4)	3500	2.8	NA	NA	NA	NA	NA	NA	NA	NA	
MW-3	7/24/2009	104.99	33.67	ND	ND	71.32	<0.50	<1.0	<1.0	ND	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	10/15/2009	333.98	34.51	ND	ND	299.47	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	Insufficent volume to sample
	7/1/2010	333.98	32.39	ND	ND	301.59	ND(2)	ND(2)	ND(2)	ND(2)	1.9	0.499	NA	NA	NA	NA	NA	NA	NA	NA	
	9/30/2010	333.98	DRY	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	12/16/2010	333.98	DRY	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	2/17/2011	333.98	DRY	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	5/24/2011	333.98	33.63	ND	ND	300.35	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	2 J	0.28	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	333.98	DRY	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	12/29/2011	333.98	DRY	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	6/1/2012	333.98	34.56	ND	ND	299.42	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	Insufficent volume to sample
	2/25/2013	333.98	DRY	DRY	DRY	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

Kleinfelder
1340 Charwood Road, Suite I, Hanover, MD

TABLE 3

Groundwater Monitoring & Analytical Data - Shallow Wells
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia

August 5, 2008 through June 7, 2013

		Gauging Data					Analytical Data														
Sample ID	Date	Top of Casing Elevation	Depth to Water (feet)	Depth to Hydro-carbon (feet)	Hydro-carbon Thickness (feet)	Corrected GW Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Methyl Tertiary Butyl Ether (µg/L)	TPH-GRO (mg/L)	1,2-Dichloroethane (µg/L)	cis-1,2-Dichloroethylene (µg/L)	Isopropyl ether (µg/L)	Naphthalene (µg/L)	tert-Amyl methyl ether (µg/L)	tert-Butyl alcohol (µg/L)	Tetrachloroethylene (µg/L)	Trichloroethylene (µg/L)	Comments
MW-5	7/24/2009	103.43	30.72	ND	ND	72.71	<0.50	<1.0	<1.0	ND	1.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	8/18/2009	NM	NM	NM	NM	NM	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	0.48	ND(0.20)	NA	NA	NA	NA	NA	NA	NA	NA	
	10/15/2009	332.35	32.51	ND	ND	299.84	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	11.4	ND(0.20)	ND(1.0)	ND(1.0)	0.46	NA	ND(5.0)	ND(25)	1.9	ND(1.0)	
	6/22/2010	332.35	29.40	ND	ND	302.95	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1 J	ND(0.02)	NA	NA	NA	NA	NA	NA	NA	NA	
	9/30/2010	332.35	32.30	ND	ND	300.05	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1	ND(0.02)	NA	NA	NA	NA	NA	NA	NA	NA	
	12/16/2010	332.35	32.12	ND	ND	300.23	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	12	ND(0.02)	NA	NA	NA	NA	NA	NA	NA	NA	
	2/17/2011	332.35	32.31	ND	ND	300.04	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	2 J	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	5/24/2011	332.35	30.84	ND	ND	301.51	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	0.9 J	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	332.35	33.39	ND	ND	298.96	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	0.9 J	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	12/29/2011	332.35	31.36	ND	ND	300.99	ND(0.5)	1 J	ND(0.8)	1 J	7	0.023 J	NA	NA	NA	NA	NA	NA	NA	NA	
	6/1/2012	332.35	31.93	ND	ND	300.42	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	0.8 J	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	332.35	33.28	ND	ND	299.07	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(0.050)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(80)	10	ND(5)	
	6/6/2013	332.35	32.55	ND	ND	299.80	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1 J	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
MW-6S	9/24/2009	NM	NM	NM	NM	NM	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	2.8	NA	ND(1.0)	13.8	2.1	NA	ND(5.0)	ND(25)	2.1	0.38	
	10/15/2009	321.85	23.35	ND	ND	298.50	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	2.8	ND(0.20)	ND(1.0)	9.2	1.3	NA	ND(5.0)	ND(25)	2.3	0.62	
	6/22/2010	321.85	20.22	ND	ND	301.63	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	2	ND(0.02)	NA	NA	NA	NA	NA	NA	NA	NA	
	9/30/2010	321.85	23.00	ND	ND	298.85	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	0.9	ND(0.02)	NA	NA	NA	NA	NA	NA	NA	NA	
	12/16/2010	321.85	22.82	ND	ND	299.03	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1	ND(0.02)	NA	NA	NA	NA	NA	NA	NA	NA	
	2/17/2011	321.85	23.02	ND	ND	298.83	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1 J	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	5/24/2011	321.85	21.66	ND	ND	300.19	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1 J	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	321.85	24.04	ND	ND	297.81	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1 J	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	12/29/2011	321.85	22.15	ND	ND	299.70	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	2 J	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	6/1/2012	321.85	22.72	ND	ND	299.13	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	0.8 J	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	321.85	24.03	ND	ND	297.82	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(0.050)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(80)	ND(5)	ND(5)	
	6/6/2013	321.85	23.49	ND	ND	298.36	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
MW-7	10/15/2009	327.96	31.21	ND	ND	296.75	2.7	ND(10)	ND(10)	ND(10)	10600	10.5	ND(10)	ND(10)	232	NA	217	2650	ND(10)	ND(10)	
	6/22/2010	327.96	28.00	ND	ND	299.96	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	87	0.23	NA	NA	NA	NA	NA	NA	NA	NA	
	9/30/2010	327.96	30.24	ND	ND	297.72	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.02)	NA	NA	NA	NA	NA	NA	NA	NA	
	12/16/2010	327.96	30.15	ND	ND	297.81	2	ND(1)	ND(2)	ND(2)	2100	1.8	NA	NA	NA	NA	NA	NA	NA	NA	
	2/17/2011	327.96	30.75	ND	ND	297.21	ND(10)	ND(14)	ND(16)	ND(16)	9700	9.0	NA	NA	NA	NA	NA	NA	NA	NA	
	5/24/2011	327.96	29.56	ND	ND	298.40	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	130	0.19	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	327.96	32.21	ND	ND	295.75	11 J	ND(14)	ND(16)	ND(16)	16000	14	NA	NA	NA	NA	NA	NA	NA	NA	
	12/29/2011	327.96	30.24	ND	ND	297.72	ND(1)	ND(1)	ND(2)	ND(2)	1600	1.3	NA	NA	NA	NA	NA	NA	NA	NA	
	6/1/2012	327.96	30.74	ND	ND	297.22	ND(5)	ND(7)	ND(8)	ND(8)	6700	4.3	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	327.96	32.23	ND	ND	295.73	ND(250)	ND(250)	ND(250)	ND(250)	61000	40	ND(250)	ND(250)	1700	ND(250)	940	14000	ND(250)	ND(250)	
	6/6/2013	327.96	31.49	ND	ND	296.47	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	950	0.85	NA	NA	NA	NA	NA	NA	NA	NA	
MW-8	10/15/2009	330.54	34.01	ND	ND	296.53	ND(500)	ND(500)	ND(500)	ND(500)	226000	207	ND(500)	ND(500)	6250	NA	3080	30800	ND(500)	ND(500)	
	6/22/2010	330.54	30.91	ND	ND	299.63	ND(5)	ND(7)	ND(8)	ND(8)	15000	14	NA	NA	NA	NA	NA	NA	NA	NA	
	9/30/2010	330.54	32.97	ND	ND	297.57	11	ND(14)	ND(16)	ND(16)	44000	31	NA	NA	NA	NA	NA	NA	NA	NA	
	12/16/2010	330.54	32.85	ND	ND	297.69	ND(25)	ND(35)	ND(40)	ND(40)	49000	32	NA	NA	NA	NA	NA	NA	NA	NA	
	2/17/2011	330.54	33.62	ND	ND	296.92	ND(25)	ND(35)	ND(40)	ND(40)	41000	34	NA	NA	NA	NA	NA	NA	NA	NA	
	5/24/2011	330.54	32.44	ND	ND	298.10	ND(5)	ND(7)	ND(8)	ND(8)	8400	7.9	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	330.54	35.18	ND	ND	295.36	ND(10)	ND(14)	ND(16)	ND(16)	15000	13	NA	NA	NA	NA	NA	NA	NA	NA	
	12/29/2011	330.54	33.23	ND	ND	297.31	ND(3)	ND(4)	ND(4)	ND(4)	1800	1.8	NA	NA	NA	NA	NA	NA	NA	NA	
	6/1/2012	330.54	33.73	ND	ND	296.81	3 J	ND(1)	ND(2)	4 J	1200	1.5	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	330.54	35.27	ND	ND	295.27	ND(5)	ND(5)	ND(5)	ND(5)	180	1.1	ND(5)	ND(5)	220	ND(5)	ND(5)	280	ND(5)	ND(5)	
	6/6/2013	330.54	34.49	ND	ND	296.05	0.7 J	ND(0.7)	ND(0.8)	ND(0.8)	160	0.52	NA	NA	NA	NA	NA	NA	NA	NA	
	9/19/2013	330.54	36.01	ND	ND	294.53	ND(5)	ND(5)	ND(5)	ND(5)	170	NA	NA	NA	NA	NA	NA	NA	NA	NA	Abandoned 9/19/2013

TABLE 3

Groundwater Monitoring & Analytical Data - Shallow Wells
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia

August 5, 2008 through June 7, 2013

		Gauging Data					Analytical Data														
Sample ID	Date	Top of Casing Elevation	Depth to Water (feet)	Depth to Hydro-carbon (feet)	Hydro-carbon Thickness (feet)	Corrected GW Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Methyl Tertiary Butyl Ether (µg/L)	TPH-GRO (mg/L)	1,2-Dichloroethane (µg/L)	cis-1,2-Dichloroethylene (µg/L)	Isopropyl ether (µg/L)	Naphthalene (µg/L)	tert-Amyl methyl ether (µg/L)	tert-Butyl alcohol (µg/L)	Tetrachloroethylene (µg/L)	Trichloroethylene (µg/L)	Comments
MW-9	10/15/2009	333.46	35.60	ND	ND	297.86	ND(1.0)	0.33	ND(1.0)	0.38	64.7	0.430	ND(1.0)	297	125	NA	2.9	ND(25)	7.0	5.8	
	6/22/2010	333.46	32.32	ND	ND	301.14	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	22	0.076	NA	NA	NA	NA	NA	NA	NA	NA	
	9/30/2010	333.46	34.85	ND	ND	298.61	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	52	0.21	NA	NA	NA	NA	NA	NA	NA	NA	
	12/16/2010	333.46	34.73	ND	ND	298.73	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	81	0.21	NA	NA	NA	NA	NA	NA	NA	NA	
	2/17/2011	333.46	35.28	ND	ND	298.18	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	48	0.19	NA	NA	NA	NA	NA	NA	NA	NA	
	5/24/2011	333.46	34.04	ND	ND	299.42	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	26	0.19	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	333.46	36.86	ND	ND	296.60	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	80	0.20	NA	NA	NA	NA	NA	NA	NA	NA	
	12/29/2011	333.46	34.68	ND	ND	298.78	ND(0.5)	2 J	ND(0.8)	1 J	58	0.16	NA	NA	NA	NA	NA	NA	NA	NA	
	6/1/2012	333.46	35.17	ND	ND	298.29	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	190	0.27	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	333.46	36.65	ND	ND	296.81	ND(5)	ND(5)	ND(5)	ND(5)	55	0.13	ND(5)	140	17	ND(5)	ND(5)	ND(80)	13	ND(5)	
	6/6/2013	333.46	35.98	ND	ND	297.48	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	20	0.042 J	NA	NA	NA	NA	NA	NA	NA	NA	
MW-10	10/15/2009	324.17	28.77	ND	ND	295.40	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	10.3	0.27	ND(1.0)	22.0	ND(5.0)	NA	ND(5.0)	ND(25)	1.6	0.73 J	
	6/22/2010	324.17	25.80	ND	ND	298.37	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	4	ND(0.02)	NA	NA	NA	NA	NA	NA	NA	NA	
	12/16/2010	324.17	27.72	ND	ND	296.45	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	10	ND(0.02)	NA	NA	NA	NA	NA	NA	NA	NA	
	2/17/2011	324.17	28.05	ND	ND	296.12	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	7	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	5/24/2011	324.17	27.04	ND	ND	297.13	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	3 J	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	324.17	29.60	ND	ND	294.57	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	8	0.025 J	NA	NA	NA	NA	NA	NA	NA	NA	
	12/29/2011	324.17	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	6/1/2012	324.17	28.17	ND	ND	296.00	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	4 J	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	324.17	29.45	ND	ND	294.72	ND(5)	ND(5)	ND(5)	ND(5)	7	ND(0.050)	ND(5)	32	ND(5)	ND(5)	ND(5)	ND(80)	ND(5)	ND(5)	
	6/6/2013	324.17	28.87	ND	ND	295.30	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
MW-11	10/16/2009	NM	NM	NM	NM	NM	15.3	ND(10)	ND(10)	10.9	38400	35.6	ND(10)	5.9	1290	NA	464	23300	ND(10)	ND(10)	
	6/22/2010	329.64	29.00	ND	ND	300.64	ND(50)	ND(70)	ND(80)	ND(80)	170000	150	NA	NA	NA	NA	NA	NA	NA	NA	
	9/30/2010	329.64	31.42	ND	ND	298.22	ND(50)	ND(70)	ND(80)	ND(80)	130000	93	NA	NA	NA	NA	NA	NA	NA	NA	
	12/16/2010	329.64	31.22	ND	ND	298.42	ND(25)	ND(35)	ND(40)	ND(40)	41000	30	NA	NA	NA	NA	NA	NA	NA	NA	
	2/17/2011	329.64	31.81	ND	ND	297.83	ND(10)	ND(14)	ND(16)	ND(16)	23000	15	NA	NA	NA	NA	NA	NA	NA	NA	
	5/24/2011	329.64	30.56	ND	ND	299.08	ND(13)	ND(18)	ND(20)	ND(20)	16000	19	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	329.64	33.22	ND	ND	296.42	4 J	ND(4)	ND(4)	ND(4)	7400	8.5	NA	NA	NA	NA	NA	NA	NA	NA	
	12/29/2011	329.64	31.29	ND	ND	298.35	ND(10)	ND(14)	ND(16)	ND(16)	9000	7.3	NA	NA	NA	NA	NA	NA	NA	NA	
	6/1/2012	329.64	31.77	ND	ND	297.87	7 J	21 J	ND(8)	34 J	4200	5.2	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	329.64	33.03	ND	ND	296.61	ND(10)	ND(10)	ND(10)	ND(10)	1400	2.5	ND(10)	ND(10)	530	ND(10)	22	180	ND(10)	ND(10)	
	6/6/2013	329.64	32.46	ND	ND	297.18	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	770	1.4	NA	NA	NA	NA	NA	NA	NA	NA	
MW-13	9/2/2011	332.00	34.37	ND	ND	297.63	5	ND(0.7)	ND(0.8)	5	6800	6.2	NA	NA	NA	NA	NA	NA	NA	NA	
	12/29/2011	332.00	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	Well inaccessible
	6/1/2012	332.00	32.88	ND	ND	299.12	ND(5)	ND(7)	ND(8)	ND(8)	5700	4.6	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	332.00	33.80	ND	ND	298.20	ND(25)	ND(25)	ND(25)	ND(25)	5300	5.5	ND(25)	ND(25)	150	ND(25)	80	ND(400)	ND(25)	ND(25)	
	6/6/2013	332.00	33.33	ND	ND	298.67	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1300	1.6	NA	NA	NA	NA	NA	NA	NA	NA	
MW-14	9/2/2011	331.81	35.02	ND	ND	296.79	54	ND(4)	ND(4)	55	170000	120	NA	NA	NA	NA	NA	NA	NA	NA	
	12/29/2011	331.81	33.36	ND	ND	298.45	ND(50)	ND(70)	ND(80)	ND(80)	99000	72	NA	NA	NA	NA	NA	NA	NA	NA	
	6/1/2012	331.81	33.90	ND	ND	297.91	ND(50)	ND(70)	ND(80)	ND(80)	91000	67	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	331.81	35.07	ND	ND	296.74	ND(50)	ND(50)	ND(50)	ND(50)	29000	28	ND(50)	ND(50)	1100	ND(50)	450	2500	ND(50)	ND(50)	
	6/6/2013	331.81	34.35	ND	ND	297.46	ND(1)	ND(1)	ND(2)	ND(2)	3600	3.9	NA	NA	NA	NA	NA	NA	NA	NA	

TABLE 3

Groundwater Monitoring & Analytical Data - Shallow Wells
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia

August 5, 2008 through June 7, 2013

		Gauging Data					Analytical Data														
Sample ID	Date	Top of Casing Elevation	Depth to Water (feet)	Depth to Hydro-carbon (feet)	Hydro-carbon Thickness (feet)	Corrected GW Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Methyl Tertiary Butyl Ether (µg/L)	TPH-GRO (mg/L)	1,2-Dichloroethane (µg/L)	cis-1,2-Dichloroethylene (µg/L)	Isopropyl ether (µg/L)	Naphthalene (µg/L)	tert-Amyl methyl ether (µg/L)	tert-Butyl alcohol (µg/L)	Tetrachloroethylene (µg/L)	Trichloroethylene (µg/L)	Comments
MW-15	9/2/2011	328.95	33.06	ND	ND	295.89	ND(0.5)	ND(0.7)	ND(0.8)	1 J	21000	14	NA	NA	NA	NA	NA	NA	NA	NA	
	12/29/2011	328.95	31.10	ND	ND	297.85	ND(1)	ND(1)	ND(2)	ND(2)	1100	1.3	NA	NA	NA	NA	NA	NA	NA	NA	
	6/1/2012	328.95	31.64	ND	ND	297.31	ND(10)	ND(14)	ND(16)	ND(16)	14000	9.7	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	328.95	33.10	ND	ND	295.85	ND(10)	ND(10)	ND(10)	ND(10)	1800	1.5	ND(10)	ND(10)	140	ND(10)	28	300	ND(10)	ND(10)	
	6/6/2013	328.95	32.32	ND	ND	296.63	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	120	0.15	NA	NA	NA	NA	NA	NA	NA	NA	
W-1	1/18/2003	328.53	33.83	ND	ND	294.70	ND (5)	ND(5)	ND(5)	ND(10)	13000	NA	NA	NA	81	NA	240	9100	NA	NA	
	8/5/2008	328.53	34.81	ND	ND	293.72	9.6	ND(5.0)	ND(5.0)	ND(5.0)	5200	ND(0.5)	NA	NA	NA	ND(5.0)	NA	NA	NA	NA	
	6/7/2013	328.53	34.52	ND	ND	294.01	ND(10)	ND(14)	ND(16)	ND(16)	26000	20	NA	NA	NA	NA	NA	NA	NA	NA	
W-2	1/18/2003	329.47	34.56	ND	ND	294.91	ND (5)	ND(5)	ND(5)	ND(10)	100	NA	NA	NA	ND(5)	NA	ND(5)	ND(100)	NA	NA	
	8/5/2008	329.47	35.53	ND	ND	293.94	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	320	ND(0.5)	NA	NA	NA	ND(5.0)	NA	NA	NA	NA	
	6/7/2013	329.47	35.30	ND	ND	294.17	ND(5)	ND(7)	ND(8)	ND(8)	14000	12	NA	NA	NA	NA	NA	NA	NA	NA	
W-3	1/18/2003	330.14	35.88	ND	ND	294.26	ND (5)	ND(5)	ND(5)	ND(10)	ND(5)	NA	NA	NA	ND(5)	NA	ND(5)	ND(100)	NA	NA	
	8/5/2008	330.14	35.92	ND	ND	294.22	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	22	ND(0.5)	NA	NA	NA	ND(5.0)	NA	NA	NA	NA	
	6/7/2013	330.14	35.84	ND	ND	294.30	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	2 J	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
W-4	1/18/2003	327.67	34.12	ND	ND	293.55	71	920	850	8700	55	NA	NA	NA	ND(5)	NA	ND(5)	790	NA	NA	
	8/5/2008	327.67	34.25	ND	ND	293.42	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	22	ND(0.5)	NA	NA	NA	ND(5.0)	NA	NA	NA	NA	
	6/7/2013	327.67	34.08	ND	ND	293.59	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
W-5	8/5/2008	327.81	35.93	ND	ND	291.88	320	3000	3000	16000	ND(5.0)	75	NA	NA	NA	2500	NA	NA	NA	NA	
	6/7/2013	327.81	35.30	ND	ND	292.51	180	96	270	11000	ND(0.5)	28	NA	NA	NA	NA	NA	NA	NA	NA	
W-6	8/5/2008	325.21	31.63	ND	ND	293.58	ND(5.0)	ND(5.0)	ND(5.0)	18.6	16	ND(0.5)	NA	NA	NA	13	NA	NA	NA	NA	
	6/7/2013	325.21	31.12	ND	ND	294.09	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	6	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
W-7	8/5/2008	329.77	37.35	ND	ND	292.42	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	16	ND(0.5)	NA	NA	NA	5.9	NA	NA	NA	NA	
	6/6/2013	329.77	37.04	ND	ND	292.73	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	0.76	NA	NA	NA	NA	NA	NA	NA	NA	

Notes:
µg/L - micrograms per liter (µg/L)
GW - Groundwater
J - Indicates an estimated value
mg/L - milligram per liter (mg/L)
NA - Not analyzed
ND - Not detected
ND(5.0) - Not detected at or above the laboratory reporting limit, laboratory reporting limit included.
NM - Not monitored
NS - Not sampled
NSVD - Not surveyed to vertical datum

Kleinfelder
1340 Charwood Road, Suite I, Hanover, MD

TABLE 4

Groundwater Monitoring & Analytical Data - Deep Wells
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia

August 5, 2008 through June 6, 2013

		Gauging Data					Analytical Data														
Sample ID	Date	Top of Casing Elevation	Depth to Water (feet)	Depth to Hydro-carbon (feet)	Hydro-carbon Thickness (feet)	Corrected GW Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Methyl Tertiary Butyl Ether (µg/L)	TPH-GRO (mg/L)	1,2-Dichloroethane (µg/L)	cis-1,2-Dichloroethylene (µg/L)	Isopropyl ether (µg/L)	Naphthalene (µg/L)	tert-Amyl methyl ether (µg/L)	tert-Butyl alcohol (µg/L)	Tetrachloroethylene (µg/L)	Trichloroethylene (µg/L)	Comments
MW-6D(65)	6/22/2010	323.09	26.69	ND	ND	296.40	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1	ND(0.02)	NA	NA	NA	NA	NA	NA	NA	NA	
	9/30/2010	323.09	26.52	ND	ND	296.57	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1	ND(0.02)	NA	NA	NA	NA	NA	NA	NA	NA	
	12/16/2010	323.09	25.92	ND	ND	297.17	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1	0.024	NA	NA	NA	NA	NA	NA	NA	NA	
	2/17/2011	323.09	26.14	ND	ND	296.95	ND(0.5)	ND(0.07)	ND(0.8)	ND(0.8)	1 J	0.035 J	NA	NA	NA	NA	NA	NA	NA	NA	
	5/24/2011	323.09	25.83	ND	ND	297.26	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1 J	0.037 J	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	323.09	27.45	ND	ND	295.64	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	0.9 J	0.026 J	NA	NA	NA	NA	NA	NA	NA	NA	
	12/22/2011	323.09	25.47	ND	ND	297.62	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	0.8 J	0.025 J	NA	NA	NA	NA	NA	NA	NA	NA	
	6/1/2012	323.09	25.95	ND	ND	297.14	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	0.8 J	0.021 J	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	323.09	27.13	ND	ND	295.96	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(0.050)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(80)	ND(5)	ND(5)	
	6/6/2013	323.09	26.66	ND	ND	296.43	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
MW-6D(75)	9/24/2009	NM	NM	NM	NM	NM	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	3.0	NA	ND(1.0)	87.4	0.56	NA	ND(5.0)	ND(25)	3.2	1.3	
	10/15/2009	323.09	26.69	ND	ND	296.40	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	2.8	ND(0.20)	ND(1.0)	80.5	0.49	NA	ND(5.0)	ND(25)	5.7	1.6	
MW-6D(85)	6/22/2010	323.09	26.69	ND	ND	296.40	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1	0.023	NA	NA	NA	NA	NA	NA	NA	NA	
	9/30/2010	323.09	26.51	ND	ND	296.58	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1	ND(0.02)	NA	NA	NA	NA	NA	NA	NA	NA	
	12/16/2010	323.09	25.92	ND	ND	297.17	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	6	0.023	NA	NA	NA	NA	NA	NA	NA	NA	
	2/17/2011	323.09	26.14	ND	ND	296.95	ND(0.5)	ND(0.07)	ND(0.8)	ND(0.8)	1 J	0.033 J	NA	NA	NA	NA	NA	NA	NA	NA	
	5/24/2011	323.09	25.83	ND	ND	297.26	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1 J	0.034 J	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	323.09	27.45	ND	ND	295.64	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	0.9 J	0.029 J	NA	NA	NA	NA	NA	NA	NA	NA	
	12/22/2011	323.09	25.47	ND	ND	297.62	ND(0.5)	1 J	ND(0.8)	ND(0.8)	0.8 J	0.028 J	NA	NA	NA	NA	NA	NA	NA	NA	
	6/1/2012	323.09	25.95	ND	ND	297.14	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	0.8 J	0.024 J	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	323.09	27.13	ND	ND	295.96	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(0.050)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(80)	ND(5)	ND(5)	
	6/6/2013	323.09	26.66	ND	ND	296.43	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
MW-6D(105)	6/22/2010	323.09	26.69	ND	ND	296.40	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	2 J	0.023 J	NA	NA	NA	NA	NA	NA	NA	NA	
	9/30/2010	323.09	26.52	ND	ND	296.57	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1	0.021	NA	NA	NA	NA	NA	NA	NA	NA	
	12/16/2010	323.09	25.92	ND	ND	297.17	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1	0.021	NA	NA	NA	NA	NA	NA	NA	NA	
	2/17/2011	323.09	26.14	ND	ND	296.95	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1 J	0.030 J	NA	NA	NA	NA	NA	NA	NA	NA	
	5/24/2011	323.09	25.83	ND	ND	297.26	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	1 J	0.035 J	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	323.09	27.45	ND	ND	295.64	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	0.9 J	0.028 J	NA	NA	NA	NA	NA	NA	NA	NA	
	12/22/2011	323.09	25.47	ND	ND	297.62	ND(0.5)	1 J	ND(0.8)	ND(0.8)	0.9 J	0.030 J	NA	NA	NA	NA	NA	NA	NA	NA	
	6/1/2012	323.09	25.95	ND	ND	297.14	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	0.9 J	0.025 J	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	323.09	27.13	ND	ND	295.96	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(0.050)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(80)	ND(5)	ND(5)	
	6/6/2013	323.09	26.66	ND	ND	296.43	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
MW-6D(110)	9/24/2009	NM	NM	NM	NM	NM	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	3.0	NA	ND(1.0)	90.8	0.57	NA	ND(5.0)	ND(25)	3.4	1.4	
	10/15/2009	323.09	26.69	ND	ND	296.40	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	2.8	ND(0.20)	ND(1.0)	84.2	0.50	NA	ND(5.0)	ND(25)	5.4	1.7	
MW-12 (110)	5/24/2011	326.43	28.12	ND	ND	298.31	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	326.43	32.37	ND	ND	294.06	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	12/22/2011	326.43	29.63	ND	ND	296.80	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	6/1/2012	326.43	29.75	ND	ND	296.68	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	326.43	30.86	ND	ND	295.57	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(0.050)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(80)	ND(5)	ND(5)	
	6/6/2013	326.43	30.59	ND	ND	295.84	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
MW-12(127)	12/22/2011	326.43	29.63	ND	ND	296.80	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
MW-12(141)	12/22/2011	326.43	29.63	ND	ND	296.80	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
MW-12(153)	5/24/2011	326.43	28.12	ND	ND	298.31	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	326.43	32.37	ND	ND	294.06	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	6/1/2012	326.43	29.75	ND	ND	296.68	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	326.43	30.86	ND	ND	295.57	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(0.050)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(80)	ND(5)	ND(5)	
	6/6/2013	326.43	30.59	ND	ND	295.84	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
MW-16D(89)	12/22/2011	332.90	34.88	ND	ND	298.02	ND(3)	ND(4)	ND(4)	ND(4)	2600	2.5	NA	NA	NA	NA	NA	NA	NA	NA	

TABLE 4

Groundwater Monitoring & Analytical Data - Deep Wells
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia

August 5, 2008 through June 6, 2013

		Gauging Data					Analytical Data														
Sample ID	Date	Top of Casing Elevation	Depth to Water (feet)	Depth to Hydro-carbon (feet)	Hydro-carbon Thickness (feet)	Corrected GW Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Methyl Tertiary Butyl Ether (µg/L)	TPH-GRO (mg/L)	1,2-Dichloroethane (µg/L)	cis-1,2-Dichloroethylene (µg/L)	Isopropyl ether (µg/L)	Naphthalene (µg/L)	tert-Amyl methyl ether (µg/L)	tert-Butyl alcohol (µg/L)	Tetrachloroethylene (µg/L)	Trichloroethylene (µg/L)	Comments
MW-16D(95)	6/1/2012	332.90	35.33	ND	ND	297.57	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	140	0.31	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	332.90	36.83	ND	ND	296.07	ND(100)	ND(100)	ND(100)	ND(100)	9800	11	ND(100)	250	360	ND(100)	200	ND(1600)	ND(100)	ND(100)	
	6/6/2013	332.90	36.15	ND	ND	296.75	18 J	ND(7)	ND(8)	ND(8)	11000	9.9	NA	NA	NA	NA	NA	NA	NA	NA	
MW-16D(110)	12/22/2011	332.90	34.88	ND	ND	298.02	ND(3)	ND(4)	ND(4)	ND(4)	2600	2.7	NA	NA	NA	NA	NA	NA	NA	NA	
MW-16D(125)	12/22/2011	332.90	34.88	ND	ND	298.02	ND(3)	ND(4)	ND(4)	ND(4)	2500	2.7	NA	NA	NA	NA	NA	NA	NA	NA	
MW-18D	6/6/2013	334.88	40.69	ND	ND	294.19	ND(0.5)	ND(0.7)	ND(0.8)	ND(0.8)	ND(0.5)	ND(0.020)	NA	NA	NA	NA	NA	NA	NA	NA	
MW-18D(1V)	5/10/2013	334.88	40.57	ND	ND	294.31	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	NA	ND(5)	13	ND(5)	ND(5)	ND(5)	ND(80)	ND(5)	ND(5)	
MW-18D(3V)	5/10/2013	334.88	40.57	ND	ND	294.31	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	NA	ND(5)	14	ND(5)	ND(5)	ND(5)	ND(80)	ND(5)	ND(5)	

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TABLE 4

Groundwater Monitoring & Analytical Data - Deep Wells
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia

August 5, 2008 through June 6, 2013

		Gauging Data					Analytical Data														
Sample ID	Date	Top of Casing Elevation	Depth to Water (feet)	Depth to Hydro-carbon (feet)	Hydro-carbon Thickness (feet)	Corrected GW Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Methyl Tertiary Butyl Ether (µg/L)	TPH-GRO (mg/L)	1,2-Dichloroethane (µg/L)	cis-1,2-Dichloroethylene (µg/L)	Isopropyl ether (µg/L)	Naphthalene (µg/L)	tert-Amyl methyl ether (µg/L)	tert-Butyl alcohol (µg/L)	Tetrachloroethylene (µg/L)	Trichloroethylene (µg/L)	Comments
PW-1	8/17/2009	NM	NM	NM	NM	NM	0.76	ND(0.50)	ND(0.50)	0.46 J	1320	NA	0.49 J	138	148	0.37 J	36.8	80.9	4.9	3.4	Abandoned to 75' (Nov 2011)
PW-1(65)	10/16/2009	NM	NM	NM	NM	NM	8	ND	ND	8.4	2520	1.87	NA	NA	NA	NA	NA	NA	NA	NA	
	6/22/2010	NSVD	34.47	ND	ND	NSVD	8	ND(0.7)	ND(0.8)	7	1600	2.2	NA	NA	NA	NA	NA	NA	NA	NA	
	9/30/2010	NSVD	36.84	ND	ND	NSVD	9	ND(0.7)	ND(0.8)	5	1600	2	NA	NA	NA	NA	NA	NA	NA	NA	
	12/16/2010	NSVD	36.51	ND	ND	NSVD	6	ND(1)	ND(2)	5	1700	1.9	NA	NA	NA	NA	NA	NA	NA	NA	
	5/24/2011	NSVD	35.87	ND	ND	NSVD	8 J	ND(4)	ND(4)	4 J	2100	2.7	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	334.54	38.61	ND	ND	295.93	6	ND(0.7)	ND(0.8)	3 J	1800	2.1	NA	NA	NA	NA	NA	NA	NA	NA	Abandoned to 75' (Nov 2011)
	12/22/2011	334.54	36.37	ND	ND	298.17	4 J	ND(4)	ND(4)	ND(4)	1300	1.7	NA	NA	NA	NA	NA	NA	NA	NA	
	6/1/2012	334.54	36.82	ND	ND	297.72	3 J	ND(1)	ND(2)	ND(2)	860	1.0	NA	NA	NA	NA	NA	NA	NA	NA	
	2/25/2013	334.54	38.28	ND	ND	296.26	ND(5)	ND(5)	ND(5)	ND(5)	800	1.4	ND(5)	110	140	ND(5)	51	110	8	ND(5)	
	6/6/2013	334.54	37.41	ND	ND	297.13	3 J	ND(0.7)	ND(0.8)	ND(0.8)	1200	1.6	NA	NA	NA	NA	NA	NA	NA	NA	
PW-1(85)	6/22/2010	NSVD	34.47	ND	ND	NSVD	8	ND(0.7)	ND(0.8)	5	2000	2.4	NA	NA	NA	NA	NA	NA	NA	NA	
	9/30/2010	NSVD	36.85	ND	ND	NSVD	9	ND(0.7)	ND(0.8)	6	1700	2	NA	NA	NA	NA	NA	NA	NA	NA	
	12/16/2010	NSVD	36.51	ND	ND	NSVD	8	ND(0.7)	ND(0.8)	6	1900	2	NA	NA	NA	NA	NA	NA	NA	NA	
	5/24/2011	NSVD	35.87	ND	ND	NSVD	6 J	ND(1)	ND(2)	3 J	2100	2.4	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	334.54	38.61	ND	ND	295.93	5 J	ND(0.7)	ND(0.8)	2 J	1600	2.0	NA	NA	NA	NA	NA	NA	NA	NA	Abandoned to 75' (Nov 2011)
PW-1(105)	10/16/2009	NM	NM	NM	NM	NM	5.8	ND	ND	4.1	1180	3.71	NA	NA	NA	NA	NA	NA	NA	NA	
	6/22/2010	NSVD	34.47	ND	ND	NSVD	5	ND(1)	ND(2)	3	2300	2.6	NA	NA	NA	NA	NA	NA	NA	NA	
	9/30/2010	NSVD	36.85	ND	ND	NSVD	9	ND(0.7)	ND(0.8)	5	1800	2	NA	NA	NA	NA	NA	NA	NA	NA	
	12/16/2010	NSVD	36.51	ND	ND	NSVD	8	ND(1)	ND(2)	5	1700	2.1	NA	NA	NA	NA	NA	NA	NA	NA	
	5/24/2011	NSVD	35.87	ND	ND	NSVD	5 J	ND(1)	ND(2)	2 J	1900	2.1	NA	NA	NA	NA	NA	NA	NA	NA	
	9/2/2011	334.54	38.61	ND	ND	295.93	3 J	ND(0.7)	ND(0.8)	1 J	1400	1.7	NA	NA	NA	NA	NA	NA	NA	NA	Abandoned to 75' (Nov 2011)

Notes:
µg/L - micrograms per liter (µg/L)
GW - Groundwater
J - Indicates an estimated value
mg/L - milligram per liter (mg/L)
NA - Not analyzed
ND - Not detected
ND(5.0) - Not detected at or above the laboratory reporting limit, laboratory reporting limit included.
NM - Not monitored
NS - Not sampled
NSVD - Not surveyed to vertical datum

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TABLE 5

Groundwater Monitoring & Analytical Data - Packer Testing and HydraSleeve™
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia

March 1, 2012 through August 7, 2013

		Analytical Data													
Sample ID	**Date**	**Benzene (µg/L)**	**Toluene (µg/L)**	**Ethyl-benzene (µg/L)**	**Total Xylenes (µg/L)**	**MTBE (µg/L)**	**1,2-Dichloroethane (µg/L)**	**cis-1,2-Dichloroethylene (µg/L)**	**Isopropyl ether (µg/L)**	**Naphthalene (µg/L)**	**tert-Amyl methyl ether (µg/L)**	**tert-Butyl alcohol (µg/L)**	**Tetrachloroethylene (µg/L)**	**Trichloroethylene (µg/L)**	**Comments**
MW-16D(83.5-96)	3/1/2012	ND(25)	ND(25)	ND(25)	ND(25)	2500	ND(25)	410	140	ND(25)	60	ND(400)	ND(25)	ND(25)	Packer Testing
MW-17D(77)	6/5/2013	ND(25)	ND(25)	ND(25)	ND(25)	6600	ND(25)	190	120	ND(25)	100	1800	ND(25)	ND(25)	Hydrasleeve
MW-17D(93)	6/5/2013	ND(25)	ND(25)	ND(25)	ND(25)	6300	ND(25)	180	110	ND(25)	93	1700	ND(25)	ND(25)	Hydrasleeve
MW-17D(120)	6/5/2013	ND(25)	ND(25)	ND(25)	ND(25)	6600	ND(25)	190	120	ND(25)	100	1800	ND(25)	ND(25)	Hydrasleeve
MW-17D(146)	6/5/2013	ND(50)	ND(50)	ND(50)	ND(50)	7400	ND(50)	150	130	ND(50)	100	1900	ND(50)	ND(50)	Hydrasleeve
MW-17D(67-77-1V)	8/6/2013	ND(1300)	ND(1300)	ND(1300)	ND(1300)	130000	ND(1300)	ND(1300)	2900	ND(1300)	1900	35000	ND(1300)	ND(1300)	Packer Testing
MW-17D(67-77-2V)	8/6/2013	ND(1300)	ND(1300)	ND(1300)	ND(1300)	130000	ND(1300)	ND(1300)	2900	ND(1300)	1900	35000	ND(1300)	ND(1300)	Packer Testing
MW-17D(67-77-3V)	8/6/2013	ND(1300)	ND(1300)	ND(1300)	ND(1300)	140000	ND(1300)	ND(1300)	2800	ND(1300)	1900	33000	ND(1300)	ND(1300)	Packer Testing
MW-17D(79-89-1V)	8/7/2013	ND(100)	ND(100)	ND(100)	ND(100)	19000	ND(100)	220	400	ND(100)	270	4400	ND(100)	ND(100)	Packer Testing
MW-17D(79-89-2V)	8/7/2013	ND(100)	ND(100)	ND(100)	ND(100)	24000	ND(100)	230	520	ND(100)	360	5800	ND(100)	ND(100)	Packer Testing
MW-17D(79-89-3V)	8/7/2013	ND(100)	ND(100)	ND(100)	ND(100)	24000	ND(100)	240	520	ND(100)	360	5900	ND(100)	ND(100)	Packer Testing
MW-17D(91-101-1V)	8/2/2013	ND(10)	15	ND(10)	ND(10)	1300	ND(10)	320	32	ND(10)	22	360	11	ND(10)	Packer Testing
MW-17D(91-101-2V)	8/2/2013	ND(10)	ND(10)	ND(10)	ND(10)	650	ND(10)	310	14	ND(10)	10	170	12	ND(10)	Packer Testing
MW-17D(91-101-3V)	8/2/2013	ND(5)	8	ND(5)	ND(5)	610	ND(5)	310	14	ND(5)	10	140	16	8	Packer Testing
MW-17D(114-124-1V)	8/2/2013	ND(50)	150	ND(50)	ND(50)	5900	ND(50)	150	110	ND(50)	83	1400	ND(50)	ND(50)	Packer Testing
MW-17D(127-137-1V)	8/1/2013	ND(50)	400	ND(50)	ND(50)	11000	ND(50)	120	270	ND(50)	190	3200	ND(50)	ND(50)	Packer Testing

Notes:
µg/L - micrograms per liter (µg/L)
BRL - Below laboratory reporting limits
BTEX - Benzene, toluene, ethylbenzene, and total xylenes
GW - Groundwater
NA - Not analyzed
ND - Not detected
ND(5.0) - Not detected at or above the laboratory reporting limit, laboratory reporting limit included.
NM - Not monitored
NS - Not sampled
NSVD - Not surveyed to vertical datum

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TABLE 6

Aquifer Characteristics

Inactive Fairfax Facility 26140
9901 Georgetown Pike
Great Falls, Virginia

Test ID	Test Type	Method (Unconfined)	T (ft^2/day)	K (ft/day)	K (cm/day)	K (cm/year)
Slug Test						
MW-17D 67-77	Negative Displacement	Bouwer-Rice [1976]	1.1E+02	1.5E+00	4.5E+01	16554
MW-17D 79-89	Negative Displacement	Bouwer-Rice [1976]	9.5E+02	1.2E+01	3.7E+02	136617
MW-17D 91-101	Negative Displacement	Bouwer-Rice [1976]	1.6E+03	2.1E+01	6.5E+02	236522
MW-17D 114-124	Negative Displacement	Bouwer-Rice [1976]	3.3E-01	4.3E-03	1.3E-01	48
MW-17D 127-137	Negative Displacement	Bouwer-Rice [1976]	3.3E-01	4.3E-03	1.3E-01	48
MW-17D 144-150	Negative Displacement	Bouwer-Rice [1976]	3.3E-01	4.3E-03	1.3E-01	48
Pump Test						
MW-16D 83.5-96	Pump Test	Theis	1.91E+02	2.48E+00	7.54E+01	27538
GEOMETRIC MEAN (Shallow Zone)			**2.89E+02**	**3.76E+00**	**1.15E+02**	**4.18E+04**
GEOMETRIC MEAN (Deep Zone)			**3.33E-01**	**4.32E-03**	**1.32E-01**	**4.81E+01**

Notes:

T - Transmissivity
K - Hydraulic Conductivitiy
ft^2/day = feet squared per day
ft/day = feet per day
ft/year = feet per year
cm/day = centimeters per day
cm/year = centimeters per year

Aquifer characteristics summarized in this table were derived from the analysis of the March 2012 pump test conducted on MW-16D and the July and August 2013 slug tests conducted on MW-17D at the above

TABLE 7

Proposed Groundwater Monitoring Schedule
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia

Monitoring Well	Monitoring Schedule		Analysis	
	Quarterly	Annually	Quarterly	Annually
MW-1	X		BTEX, MTBE, TBA	Full List VOCs
MW-2	X		BTEX, MTBE, TBA	Full List VOCs
MW-3		X		Full List VOCs
MW-5		X		Full List VOCs
MW-6D		X		Full List VOCs
MW-6S		X		Full List VOCs
MW-7	X		BTEX, MTBE, TBA	Full List VOCs
MW-9	X		BTEX, MTBE, TBA	Full List VOCs
MW-10		X		Full List VOCs
MW-11	X		BTEX, MTBE, TBA	Full List VOCs
MW-12D		X		Full List VOCs
MW-13	X		BTEX, MTBE, TBA	Full List VOCs
MW-14	X		BTEX, MTBE, TBA	Full List VOCs
MW-15	X		BTEX, MTBE, TBA	Full List VOCs
MW-16D	X		BTEX, MTBE, TBA	Full List VOCs
MW-17D	X		BTEX, MTBE, TBA	Full List VOCs
MW-18D		X		Full List VOCs
PW-1	X		BTEX, MTBE, TBA	Full List VOCs
SVE-2*	X		BTEX, MTBE, TBA	Full List VOCs
W-1	X		BTEX, MTBE, TBA, Ethanol	Full List VOCs
W-2	X		BTEX, MTBE, TBA, Ethanol	Full List VOCs
W-3		X		Full List VOCs, Ethanol
W-4		X		Full List VOCs, Ethanol
W-5		X		Full List VOCs, Ethanol
W-6	X		BTEX, MTBE, TBA, Ethanol	Full List VOCs, Ethanol
W-7	X		BTEX, MTBE, TBA, Ethanol	Full List VOCs, Ethanol

* Proposed replacement well for MW-8

Notes:

BTEX = Benzene, Toluene, Ethylbenzene, and total Xylenes
MTBE = Methyl Tert Butyl Ether
TBA = Tertiary Butyl Alcohol
VOCs = Volatile Organic Compounds
Samples will be analyzed using EPA method 8260

Appendix A
VADEQ Correspondence

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3821
www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

November 1, 2013

Mr. Tom Wright
Fairfax Petroleum Realty, LLC
6820-B Commercial Drive
Springfield, VA 22151

RE: **PC#2010-3028**; Former Fairfax Petroleum Exxon Facility #26140
9901 Georgetown Pike, Great Falls, Fairfax County 22066
Comments on DRAFT Corrective Action Plan received September 27, 2013

Dear Mr. Wright:

The Virginia Department of Environmental Quality (DEQ), Northern Regional Office, has reviewed the referenced DRAFT report. Based upon that review and discussions with your consultant on the project Kleinfelder, and the Great Falls Citizens Association, the following items should be incorporated into the Corrective Action Plan (CAP) prior to submitting the final draft CAP for approval for Public Notice. The items are as follows:

- Include a timeline with projected milestones in the CAP.
- Expand the Site Conceptual Model (SCM) and provide additional isoconcentration maps to further the public's understanding of the site.
- Specify that a rebound study will be performed following system shutdown. The Study will monitor biological indicators and chemicals of concern to determine if system will remain off, additional corrective action will be required or natural attenuation monitoring may be implemented.
- Clarify that post operational monitoring will be performed a <u>minimum</u> of one year after achieving the corrective action objectives. .
- Specify that all deep bedrock monitoring wells will be monitored in a consistent manner by FLUTe™ liner or other similar technology or construction.

- Although bail and purge was, for many years, the only industry accepted method to collect VOC water samples; in the last few years, low flow sampling has become established as an alternative method that often provides samples more representative of groundwater conditions. Specify that, in the future, all wells will be sampled via the low flow method, which will also reduce the amount of purge water generated during sampling events.

- Specify that natural attenuation parameters will be collected, prior to system start-up, to provide a baseline of biological indicators for potential future use. Please list those parameters in the CAP.

- Continue to use EPA Method 8260 to analyze the monitoring and potable water well samples for Chemicals of Concern.

- Reevaluate the Great Falls Crossroads parking deck to determine if a sump is present. In addition, clarify that the petroleum vapor intrusion pathway will be reevaluated for this structure and any elevator shafts in the building, if present.

- Provide an estimate of the remaining source contaminate in the CAP.

- Specify that an additional multi-level monitoring well, extended to the top of bedrock, will be installed on the BF Saul property to assist in defining the vertical profile of the contaminate plume.

- Clarify that the interim "system" objective of achieving asymptotic recovery levels is not the risk based corrective action objective or end point of the CAP. Risk based objectives will be derived once sufficient technical information has been gathered as a result of completing the tasks described in this initial CAP. These risk based endpoints will be included in a future CAP Addendum and Public Notice period.

In addition, the DEQ Alternate Water Supply program will expand the sampling of the area potable wells to the east to include 9801, 9803, and 9807 Georgetown Pike residences, if the owners choose to participate.

For additional questions, please contact me at (703) 583-3825. Please be sure to include the PC# on all correspondence.

Respectfully,

Kurt W. Kochan
Senior Environmental Geologist

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cc: Mark Steele, Kleinfelder via email, MCSteele@kleinfelder.com
Glen Sjoblom, GFCA via email, gsjoblom@cox.net
M. Eric Knudsen, President, GFCA via email, m.eric.knudsen@gmail.com
Amy Stephan, GFCA via email, what00now@yahoo.com
Ben Wiles, Office of Supervisor John W. Foust via email, benjamin.wiles@fairfaxcounty.gov

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
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www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

July 20, 2011

Mr. Tom Wright
Fairfax Petroleum Realty, LLC
6820-B Commercial Drive
Springfield, VA 22151

RE: **PC#2010-3028**; Fairfax Facility #26140
9901 Georgetown Pike, Great Falls, Fairfax County 22066
Post Site Characterization Monitoring Report received June 15, 2011

Dear Mr. Wright:

The Virginia Department of Environmental Quality (DEQ), Northern Regional Office, has reviewed the referenced report. Based upon a review of this information and in accordance with Virginia Regulations Chapter 20, 9 VAC 25-580-280, Underground Storage Tanks, Technical Standards and Corrective Action Requirements, the Virginia DEQ has determined that a Corrective Action Plan (CAP) is required for the referenced site. The technical file should be the basis for the CAP. The CAP should be submitted on or before **September 20, 2011**, and include, at a minimum, the following:

- A description of a viable corrective action strategy to reduce and contain the on-site levels of dissolved phase MtBE;
- A detailed description and estimated costs of the selected corrective action strategy;
- Schedule of implementation for the corrective action;
- Disposal strategy for the contaminated material (air, water, soil). If a discharge to the surface is proposed, a General VPDES Permit Registration Statement for Discharges from Petroleum Contaminated Sites is required. If a discharge to the sanitary system is proposed, this access must be obtained from the local Public Owned Treatment Works (POTW);
- Monitoring schedule for all wells. The schedule must also identify the specific constituents that will be tracked, and ;

- Proof of Public Notice Publication. In order to satisfy public participation requirements of Virginia Regulations Chapter 20, 9 VAC 25-580-300, you must publish the Public Notification Form. The completed form must be published **at least** one time in the legal section of a general circulation newspaper that is available in the affected area. The Public Notice Verification sheet must be completed and signed by the newspaper or actual copies of the page from the newspaper, showing the notice and publication date, must be provided.

The CAP is issued independent of any local government ordinance requirements. Prompt contact with local building officials will apprise you of any requirements that may affect the corrective action activities.

The Virginia DEQ has established procedures to ensure that CAP Development and CAP Implementation activities are eligible for reimbursement from the Virginia Petroleum Storage Tank Fund (VPSTF). All corrective action activities must receive prior approval from this office. Please refer to the VPSTF Reimbursement Manual for more information.

All information relating to discharge permits, public notification, or corrective action requirements can be downloaded from the DEQ web page (www.deq.virginia.gov). For additional questions, please contact me at (703) 583-3825. Please be sure to include the PC# on all correspondence.

Respectfully,

Kurt W. Kochan
Environmental Geologist

kk/103028capreq.doc

cc: File
MCSteele@kleinfelder.com via e-mail

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3821
www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

December 10, 2009

Ms. Alexandria McBride
ExxonMobil Environmental Services Company
3225 Gallows Road, Room 8B0420
Fairfax, VA 22037

RE: **PC#2010-3028**; Exxon Station #2-6140
9901 Georgetown Pike, Great Falls, Fairfax County 22066
Site Characterization Report received November 11, 2009

Dear Ms. McBride:

The Virginia Department of Environmental Quality (DEQ) has reviewed the referenced Site Characterization Report (SCR). The report recommends continued sampling of the existing monitoring wells, delineation of the dissolved phase hydrocarbons southeast/east of the site, conducting a remediation feasibility study, and preparation of a Corrective Action Plan (CAP).

This office does not believe sufficient information has been obtained to justify or allow an adequate CAP to be designed. Specifically, information from additional deep monitoring wells and offsite shallow monitoring wells needs to be obtained.

On or before **February 12, 2010**, a Site Characterization Report Addendum should be submitted to this office. The Addendum should include the following:

- Installation of at least three additional shallow ground water monitoring wells on the property located to the southeast/east of Exxon facility to better define the horizontal distribution of dissolved phase hydrocarbons in the shallow aquifer.
- Installation of one bedrock monitoring well to the north/northeast of the former on-site potable well and one to the south/southwest to validate that there has not been off-site movement of MTBE in the lower aquifer. A site drawing with the proposed well locations should be submitted to this office for approval prior to proceeding with installation.

- Perform low flow sampling of the former potable well, MW-6D, and new bedrock wells at the following depths: 60 feet below top of casing (TOC), 85 feet below TOC, and 105 feet below TOC or at intervals in MW-6D and the additional bedrock monitoring wells where potential fractures were/are documented during drilling activities.
- Analysis of ground water samples from all new and existing wells for BTEX/MTBE and TPH-GRO.
- Update risk assessment based upon the results of the newly installed wells, if warranted. And.
- Proposal of additional assessment and/or viable remediation strategies (if necessary).

After this office has reviewed the report, a decision on case closure, additional assessment, or corrective action will be made.

If you wish to access the Virginia Petroleum Storage Tank Fund (VPSTF), the submittal of an Activity Authorization Form (AAF) and/or competitive bids is required. In order to meet the submittal date for the SCR Addendum, an AAF should be submitted as soon as possible.

The Virginia DEQ is very interested in assisting you in any way possible to bring this investigation to closure, effectively and efficiently. If you have any questions or if you need additional guidance, feel free to contact me at **703-583-3825**. Please include the PC file number, referenced above, in all correspondence.

Respectfully,

Kurt W. Kochan
Environmental Geologist

Kk/103028.doc

cc: File
GES via email to ATaylorsoncollins@gesonline.com

Appendix B
Boring and Well Construction Logs

BORING LOG MW1

(Page 1 of 1)

Date Drilled:	: 07/20/09
Drilling Co.:	: Geosearch, Inc.
Drilling Method:	: Hollow-Stem Auger
Sampling Method:	: Split Spoon
Borehole Diameter:	: 8"
Casing Diameter:	: 2"
Location N-S	: 63'5" S of SE crnr of station
Location E-W	: 38'10" E of SE crnr of station
Total Depth:	: 37' bgs
First GW Depth:	: 30' bgs

Project No.:	: 091058
Site:	: ExxonMobil Station #2-6140, Great Falls, VA
Logged By:	: Eric Koosha / Scott Peret
Reviewed By:	: Steve M. Zigan, P.G. 1812
Signature:	:

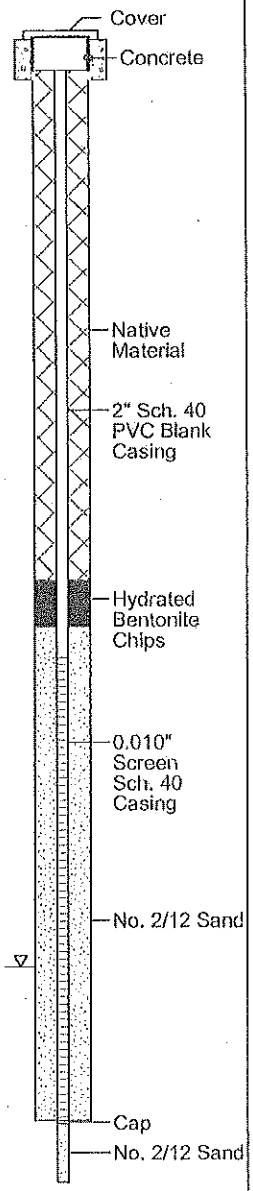
Sample Condition: No Recovery; Sampled Interval; Described Sample; Preserved Sample

Water Levels: Groundwater After Completion; Groundwater During Drilling

Well: MW1
Elevation: 100.00'

Depth (ft)	Blow Count / 6"	OVM/PID (ppmv)	USCS	DESCRIPTION (% clay/silt/sand/gravel)
0				CONCRETE: 6"
5	1 2 3 3	1.4	MH	SILT: red-yellow, damp, uniform, non-plastic, micaceous, unconsolidated, good recovery (5/95/0/0)
10	1 5 4 8	0.0	MH	SILT with Clay: red-yellow to rust-red, damp, uniform, non-plastic, unconsolidated to 10.8' bgs, buff yellow to white gray with gray mottles and lamina in splintery, brittle texture, micaceous, good recovery, few black (organic) lamina occasionally in base of core (15/85/0/0)
15	5 15 17 24	0.0	MH	SILT: red-brown, damp, matrix uniform, brittle, friable, non-plastic, micaceous, few small, fine gravel sized nodules, unconsolidated, smooth texture
20	8 19 30 30	0.0	MH	SILT with Gravel: light yellow-brown, gravel is green-black, dry, uniform; @ 21.2' bgs, few fine, rounded, smooth, soapstone gravel, fractured white rock; angular, well graded, coarse-grained sand, micaceous, good recovery (10/65/5/20)
25	14 24 36 34	2.4	MH	SILT: gray-brown, with semi-lithified clasts of siltstone, few white-gray thin lamina densely spaced with black (organic) particles throughout bottom 4 inches, micaceous (10/90/0/0)
30	13 25 18 21	0.0	GM	Silty GRAVEL with Sand: white, saturated, angular, fractured rock, well graded with silty fines (more clay noticable) poor recovery (5/25/20/50)
35	14 14 20 21	225	GM	Silty GRAVEL with sand: white, saturated, angular, well graded, few silty fines, fractured rock, moderate recovery (0/25/25/50)
40				

Borehole cleared to 6'4" bgs on 07/20/09 with air knife excavation tools.



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BORING LOG MW2

(Page 1 of 1)

Project No.:	: 091058
Site:	: ExxonMobil Station #2-6140, Great Falls, VA
Logged By:	: Eric Koosha / Scott Peret
Reviewed By:	: Steve M. Zigan, P.G. 1812
Signature:	:

Date Drilled:	: 07/21/09
Drilling Co.:	: Geosearch, Inc.
Drilling Method:	: Hollow-Stem Auger
Sampling Method:	: Split Spoon
Borehole Diameter:	: 8"
Casing Diameter:	: 2"
Location N-S	: 24.1' N of NE crnr of station
Location E-W	: 63.5' E of NE crnr of station
Total Depth:	: 42' bgs
First GW Depth:	: 30' bgs

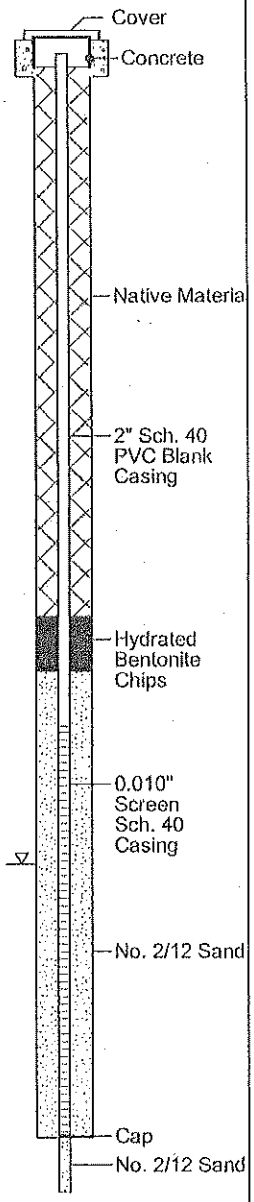
Sample Condition: No Recovery; Sampled Interval; Described Sample; Preserved Sample

Water Levels: Groundwater After Completion; Groundwater During Drilling

Depth (ft)	Blow Count / 6"	OVM/PID (ppmv)	USCS	DESCRIPTION (% Clay/Silt/Sand/Gravel)
0				CONCRETE: 6"
5	Hand Auger	0.0	ML	SILT: red, non-plastic (10/80/10/0)
10	3 4 7 6	0.0	MH	SILT: red-yellow to rust-red, dry, non-plastic, unconsolidated, uniform smooth texture, micaceous; trace black (organic) lamina (5/95/0/0) @11.5' bgs yellow mottles
15	3 6 8 10	0.0	MH	SILT: red-yellow to rust-red, color grading to yellow-brown, dry, non-plastic, unconsolidated, uniform smooth texture, micaceous; frequent black (organic) lamina (thin) throughout (5/95/0/0) @16.5' bgs grades to rust-red at bottom of core, damp
20	2 8 10 9	0.0	MH	SILT: red-yellow to rust-red with yellow mottles, damp, non-plastic, micaceous; trace black (organic) thin lamina (5/95/0/0) @20.5' bgs splintery textures for upper 3" and lower 4" of core
25	7 15 19 16	3.5	MH	SILT: greenish-yellow, damp, non-plastic, micaceous, uniform smooth texture, unconsolidated, few black lamina or thin beds; trace very fine-grained sand (4/95/1/0)
30	6 12 17 24	33.8	MH	SILT: light olive, moist, non-plastic, micaceous, uniform smooth texture, unconsolidated, few black lamina (5/95/0/0)
35	7 17 15 18	163.1	MH	SILT: olive-gray, moist, micaceous, uniform, unconsolidated (5/95/0/0) @35'-36' bgs: common black thin lamina and single red-yellow thin bed with higher clay content @36'-37' bgs: no splintery texture
40	15 33 32 50	1.8	MH	SILT: olive-gray, moist, micaceous, smooth uniform texture, unconsolidated; top of sample occasional black thin lamina (5/95/0/0)
45				

Borehole cleared to 8' bgs with hand tools and air knife on 07/20/09.

Well: MW2
Elevation: 102.90'



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BORING LOG MW3

(Page 1 of 1)

Project No.:	: 091058
Site:	: ExxonMobil Station #2-6140, Great Falls, VA
Logged By:	: Eric Koosha / Scott Peret
Reviewed By:	: Steve M. Zigan, P.G. 1812
Signature:	:

Date Drilled:	: 07/22/09
Drilling Co.:	: Geosearch, Inc
Drilling Method:	: Hollow-Stem Auger
Sampling Method:	: Split Spoon
Borehole Diameter:	: 8"
Casing Diameter:	: 2"
Location N-S	: 99'10" N of SE crnr of station
Location E-W	: 4'7" E of SE crnr of station
Total Depth:	: 37'
First GW Depth:	: N/A

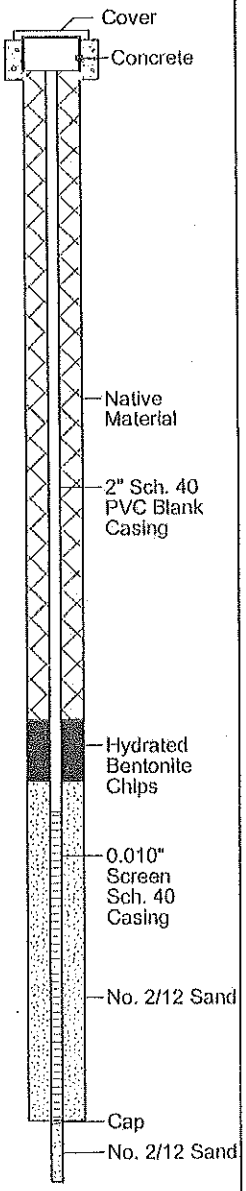
Sample Condition: No Recovery; Sampled Interval; Described Sample; Preserved Sample

Water Levels: Groundwater After Completion; Groundwater During Drilling

Well: MW3
Elevation: 104.99'

Depth (ft)	Blow Count / 6"	OVM/PID (ppmv)	USCS	DESCRIPTION (% clay/silt/sand/gravel)
0				ASPHALT: 4"
5			ML	SILT: rust-red, dry, non-plastic, micaceous
10	1 2 5 6	0.0	MH	SILT: rust-red with gray mottles, dry to damp, few thin black lamina, non-plastic, smooth, uniform texture, unconsolidated, micaceous, good recovery (5/95/0/0)
15	2 4 5 6	0.0	MH	SILT: rust-red, damp, red-yellow thin lamina, non-plastic, splintery texture, brittle, non-consolidated, micaceous, good recovery (5/95/0/0)
20	2 6 9 9	0.0	MH	SILT: rust-red, damp, red-yellow thin lamina, good recovery, splintery texture, black mottles but none in lower half of core, micaceous (5/95/0/0)
25	2 7 12 14	0.0	MH	SILT: red-yellow, light gray mottling scattered, moist, with frequent rust-red lamina, few thin black lamina, non-plastic, smooth, uniform texture, unconsolidated, micaceous (5/95/0/0)
30	2 8 11 13	1.4	MH	SILT: yellow-brown and red-yellow, black and light gray mottles, saturated, unconsolidated, micaceous (5/95/0/0)
35	3 3 9 17	0.6	MH	SILT: yellow-brown and red-yellow, black and light gray mottles, saturated, unconsolidated, micaceous (5/95/0/0)
40				

Borehole cleared to 8' bgs on 07/21/09 with air knife excavation tools.



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BORING LOG SB4

(Page 1 of 1)

Date Drilled:	: 07/20/09
Drilling Co.:	: Geosearch, Inc.
Drilling Method:	: Air Knife
Sampling Method:	: Hand Auger
Borehole Diameter:	: 10"
Casing Diameter:	: N/A
Location N-S	: 50' S of SE crnr of station
Location E-W	: 43' W of SE crnr of station
Total Depth:	: 10.3' bgs
First GW Depth:	: N/A

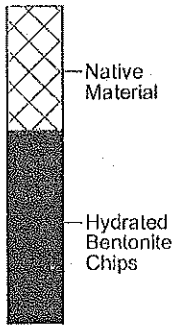
Project No.:	: 091058
Site:	: ExxonMobil Station #2-6140, Great Falls, VA
Logged By:	: Eric Koosha
Reviewed By:	: Steve M. Zigan, P.G. 1812
Signature:	: Steve M. Zigan

Sample Condition
- No Recovery
- Sampled Interval
- Described Sample
- Preserved Sample

Water Levels
- Groundwater After Completion
- Groundwater During Drilling

Boring: SB4

Depth (ft)	Blow Count / 6"	OVM/PID (ppmv)	Sample	Column	USCS	DESCRIPTION (% clay/silt/sand/gravel)
0						
5		0.0			ML	SILT: sandy brown, non-plastic; few very fine- to fine-grained sand (10/80/10/0)
10		0.0			ML	SILT: sandy brown with specks of black, non-plastic; few very fine- to fine-grained sand (10/80/10/0) @ 10.3' bgs: Refusal
15						
20						
25						
30						
35						
40						



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BORING LOG MW5

(Page 1 of 1)

Date Drilled:	: 07/22/09
Drilling Co.:	: Geosearch, Inc.
Drilling Method:	: Hollow-Stem Auger
Sampling Method:	: Split Spoon
Borehole Diameter:	: 8"
Casing Diameter:	: 2"
Location N-S	: 61'5" N of SE crnr of station
Location E-W	: 45'4" W of SE crnr of station
Total Depth:	: 42' bgs
First GW Depth:	: 36' bgs

Project No.:	: 091058
Site:	: ExxonMobil Station #2-6140, Great Falls, VA
Logged By:	: Eric Koosha / Scott Peret
Reviewed By:	: Steve M. Zigan, P.G. 1812
Signature:	:

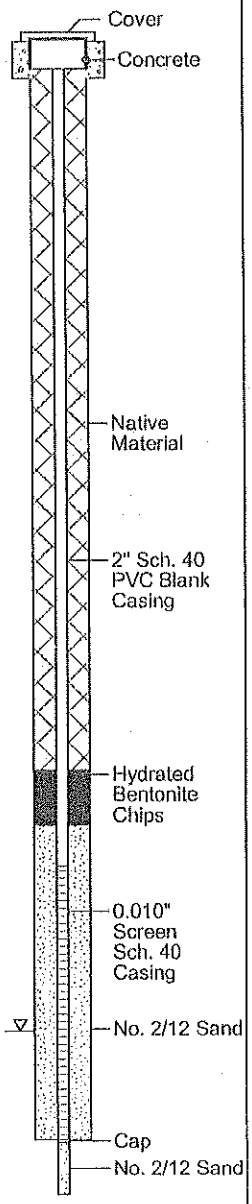
Sample Condition: No Recovery; Sampled Interval; Described Sample; Preserved Sample

Water Levels: Groundwater After Completion; Groundwater While Drilling

Well: MW5
Elevation: 103.43'

Depth (ft)	Blow Count / 6"	OVM/PID (ppmv)	Sample	Column	USCS	DESCRIPTION (% clay/silt/sand/gravel)
0						CONCRETE: 5"
5	3 3 3 3	0.0			MH	SILT: yellow-brown, dry, non-plastic, smooth texture, unconsolidated, uniform, micaceous, moderate recovery (5/95/0/0)
10	2 4 4 7	0.0			MH	SILT: yellow-gray, dry, non-plastic, smooth texture, unconsolidated, uniform, micaceous, good recovery (5/95/0/0)
15	5 8 10 10	0.0			MH	SILT: gray-brown, damp, non-plastic, smooth texture, unconsolidated, uniform, micaceous, good recovery (5/95/0/0)
20	7 11 17 5	0.0			MH	SILT: gray-brown, damp, smooth texture, unconsolidated; few closely spaced, dense thin lamina of black (organic) @ 2'1 bgs for 3" to 5"; @ 21.6' bgs splintery books weathered mica in silt, brown dirty mottles, micaceous, good recovery (5/95/0/0)
25	6 12 22 18	0.0			MH	SILT: gray-brown, damp, smooth texture, unconsolidated, few frequent yellow laminas (thin); @ 26.5' bgs rust-red to red-orange lamina, smooth, uniform texture, micaceous, good recovery (5/95/0/0)
30	9 11 10 14	0.0			MH	SILT: grey-brown, damp, with splintery texture to 30.7' bgs and bottom 4"; other parts smooth, uniform texture, unconsolidated, micaceous, good recovery (5/95/0/0)
35	6 12 10 14	0.0			MH	SILT: grey-brown to yellow, wet; @ 36' bgs few black, thin bed lamina and red-yellow thin lamina to depth, non-plastic, smooth, micaceous, good recovery (5/95/0/0)
40	9 17 24 21	0.0			MH	SILT: grey-brown, saturated; @ 41.5' bgs few black and rust-red thin-bed, black to grey-brown, few black lamina to base, non-plastic, micaceous, good recovery (5/95/0/0)
45						

Borehole cleared to 4'bgs on 07/22/09 with air knife excavation tools.



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WELL LOG

ID NO. **MW-6**

Groundwater and Environmental Services, Inc.

PROJECT:	ExxonMobil Station # 2-6140	WATER DEPTH:	TOTAL DEPTH: 35'
ADDRESS:	9901 Georgetown Pike, Great Falls, VA		CASING EL.: 321.85
JOB NO.	0402403	BOREHOLE DIA.: 6.25"	WELL DIA.: 4"

Logged By:	Tim Davis	Drilling Method:	Hollow Stem Auger/Air Rotary
Dates Drilled:	9/11/2009	Sampling Method:	Split Spoon
Drilling Company:	B.L. Meyers	Soil Class. System:	NA
Well Permit #:		Field Screening:	MiniRae 2000, Model PGM 7600

Depth (feet)	Sample Interval (feet)	Field Screen: Total Organic Volatiles (ppm) 0 – 10	Blow Counts	Recovery (inches)	Sample Lithology	Stratigraphy	Comments	Completion Details
0					Fill materials from Air-Knifing operations	Fill	Air-knifed 0-5 fbg for utility clearance	8" Flush-Mount Manway with concrete 0'-0.5'
5					SILT trace sand, non-plastic, med-sorted, high mica content,stiff, layered structured, red-tan	Silt		Grout 0.5'-16'
10	10-12	0.0	4-4-5-19	12"				
	12-14	0.0	45-55-0-0	24"				
	14-16	0.0	15-21-56-0	18"				
15	16-18	0.0	3-3-3-4	12"	Silt trace sand, non-plastic, med-sorded, high mica content, loose, none structured, red-tan			Bentonite Plug 16'-18'
	18-20	0.0	22-60-0-0	12"				
20	20-22	0.0	27-65-0-0	6"	Structured Saprolite with trace rock fragments, stiff, mica foliations 0.25" thick	Saprolite	sample collected from 22-24 fbg	#2 Sandpack 18'-35'
	22-24	1.5	23-70-0-0	4"			Static water level at 22.5 fbg	
25					Structured Saprolite with layered 0.2.5-0.5" angular rock fragments, mica foliations 0.25" think		Spoon and Auger refusal at 24 fbg	
30								
35								5" PVC Cap35'

LEGEND

Proportion Descriptions:

Trace = <10% Some = <50%

Little = <25% And = 50%

Symbol Key:

Water Level

Sample Location

fbg = feet below grade
NA = not available
ppm = parts per million
in. = inches

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WELL LOG

ID NO. **MW-6D**

Groundwater and Environmental Services, Inc.

PROJECT:	ExxonMobil Station # 2-6140	WATER DEPTH:	TOTAL DEPTH: 35'
ADDRESS:	9901 Georgetown Pike, Great Falls, VA		CASING EL.: 323.09
JOB NO.	0402403	BOREHOLE DIA.: 6.25"	WELL DIA.: 6"

Logged By:	Tim Davis	Drilling Method:	Air Rotary
Dates Drilled:	9/11/2009	Sampling Method:	Split Spoon
Drilling Company:	B.L. Meyers	Soil Class. System:	NA
Well Permit #:		Field Screening:	MiniRae 2000, Model PGM 7600

Depth (feet)	Sample Interval (feet)	Field Screen: Total Organic Volatiles (ppm) 0 — 10	Blow Counts	Recovery (inches)	Sample Lithology	Stratigraphy	Comments	Completion Details
0–5					Fill materials from Air-Knifing operations	Fill	Air-knifed 0-5 fbg for utility clearance	8" Flush-Mount Manway with concrete 0'-0.5'
5–20					Silt trace sand, non-plastic, med-sorded, high mica content, loose, none structured, red-tan	Silt	Soil lithology taken from MW-6 Samples	
10	10-12	0.0	4-4-5-19	12"				
12	12-14	0.0	45-55-0-0	24"				
14	14-16	0.0	15-21-56-0	18"				
16	16-18	0.0	3-3-3-4	12"				
18	18-20	0.0	22-60-0-0	12"				
20	20-22	0.0	27-65-0-0	6"				
22	22-24	1.5	23-70-0-0	4"				
20–60					Structured Saprolite with layered 0.2.5-0.5" angular rock fragments, mica foliations 0.25" think	Saprolite	Static water level at 27 fbg	Grout 0.5'-65'
60–75					Weathered Schist, rapid pentration rate (>1ft/min), tan-grey.	Schist		6" steel casing 0.5'-65'
75–120					Schist, pentration rate (<1ft/min)	Schist		Open Borehole 70'-120'

LEGEND

Proportion Descriptions:

Trace = <10% Some = <50%

Little = <25% And = 50%

Symbol Key:

Water Level

Sample Location

fbg = feet below grade
NA = not available
ppm = parts per million
in. = inches

Well ID: MW-6D

Groundwater & Environmental Services, Inc.
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WELL LOG

ID NO. **MW-7**

Groundwater and Environmental Services, Inc.

PROJECT:	ExxonMobil Station # 2-6140	WATER DEPTH:	TOTAL DEPTH: 40'
ADDRESS:	9901 Georgetown Pike, Great Falls, VA		CASING EL.: 327.96
JOB NO.	0402403	BOREHOLE DIA.: 4.25"	WELL DIA.: 2"

Logged By:	Tim Davis	Drilling Method:	Hollow Stem Auger
Dates Drilled:	10/16/2009	Sampling Method:	Split Spoon
Drilling Company:	B.L. Meyers	Soil Class. System:	NA
Well Permit #:		Field Screening:	MiniRae 2000, Model PGM 7600

Depth (feet)	Sample Interval (feet)	Field Screen: Total Organic Volatiles (ppm) 0 — 10	Blow Counts	Recovery (inches)	Sample Lithology	Stratigraphy	Comments	Completion Details
0					SILT, trace sand, none plastic, tan-red, dry, vertical clay inclutions, black.	Silt	Air-knifed 0-8 fbg for utility clearance	8" Flush-Mount Manway with concrete 0'-0.5'
5								Grout 0.5'-11'
	8-10	0.0	5-8-9-12	12"				
10	10-12	0.0	5-9-11-12	24"				Bentonite Plug 11'-13'
	12-14	0.0	8-9-13-7	6"				
	14-16	0.0	4-6-15-17	12"	SILT, little sand, some layers have foliation planes, dry			
15	16-18	0.0		6"				#2 Sandpack 13'-40'
	18-20	0.0	5-9-17-18	12"				
20	20-22	0.0	4-11-16-21	20"	SILT, trace sand, vertical inclutions, no foliations, mica, tan-red			
	22-24	0.0	10-13-12-27	6"				
	24-26	0.0	13-15-35-43	20"				
25	26-28	0.0	18-21-22-17	12"				
	28-30	0.0	8-9-9-17	12"	SILT, some sand, coarse quartz pebbles, sub angular, 0.1"-0.25", in layers, silt mica, no foliation,		sample collected from 28-30 fbg	
		0.0						
30	30-32	0.0	10-15-26-37	24"			Static water level at 31.5 fbg	
	32-34	0.0	28-23-25-34	20"				
	34-36	0.0	14-23-32-39	20"	Saprolite, mica silt, folition planes present, some sand, in layers, tan-grey	Saprolite		
35								
40								3" PVC Cap35'

LEGEND

Proportion Descriptions:

Trace = <10% Some = <50%

Little = <25% And = 50%

Symbol Key:

Water Level

Sample Location

fbg = feet below grade
NA = not available
ppm = parts per million
in. = inches

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WELL LOG

ID NO. **MW-8**

Groundwater and Environmental Services, Inc.

PROJECT:	ExxonMobil Station # 2-6140	WATER DEPTH:	36.84'	TOTAL DEPTH:	45'
ADDRESS:	9901 Georgetown Pike, Great Falls, VA			CASING EL.:	330.54
JOB NO.	0402403	BOREHOLE DIA.:	4.25"	WELL DIA.:	2"

Logged By:	Jeremy Joiner	Drilling Method:	Hollow Stem Auger
Dates Drilled:	10/08/2009	Sampling Method:	Split Spoon
Drilling Company:	B.L. Meyers	Soil Class. System:	NA
Well Permit #:		Field Screening:	MiniRae 2000, Model PGM 7600

Depth (feet)	Sample Interval (feet)	Field Screen: Total Organic Volatiles (ppm) 0 — 10	Blow Counts	Recovery (inches)	Sample Lithology	Stratigraphy	Comments	Completion Details
0					Fill materials from Air-Knifing operations	Fill	Air-knifed 0-8' for utility clearance	8" Flush-Mount Manway with concrete 0'-0.5'
5								
	8'-10'	0.0	6-16-21-25	19"	Brown clayey silt with mica plating, stiff, few gravels	Clay and Silt		
10	10'-12'	0.0	6-20-21-20	13"				Grout 0.5'-20'
	12'-14'	0.0	15-11-20-18	11"	Reddish-brown sandy silt, little clay, trace gravel	Sandy Silt		
	14'-16'	0.0	13-14-25-32	19"	Light brown clayey silt	Clay and Silt		
15	16'-18'	0.0	32-21-32-31	14"				
	18-'20'	0.0	6-8-10-13	14"	Brown silty sand, trace clay and gravels	Silty Sand		
20	20'-22'	0.0	8-11-12-6	16"				
	22'-24'	0.0	8-12-14-16	14"	Brown sandy silt, little clay, trace gravels and mica	Sandy Silt		Bentonite Plug 20'-23'
	24'-26'	0.0	11-14-20-21	19"				
25	26'-28'	0.0	17-15-21-20	23"	Grayish-brown sandy silt, more structured, mica plating	Sandy Silt		
	28'-30'	0.0	6-12-17-26	22"				
30	30'-32'	0.0	11-11-9-10	17"				#2 Sandpack 23'-45'
	32'-34'	0.0	14-16-26-31	20"	Gray clayey sand, trace mica, structured	Clayey Sand		
	34'-36'	0.0	11-17-20-18	19"				
35	36'-38'	90.0	30-17-20-24	21"	Gray silty sand, little clay, less structured, very moist sample, wet spoon	Silty Sand	Static water depth 36.84 Sampled collected 36-38'	
	38'-40'	70	17-12-19-50/3"	17"	Gray saprolite with mica plating	Saprolite		
40								
45								3" PVC Cap 45'

LEGEND

Proportion Descriptions:

Trace = <10% Some = <50%

Little = <25% And = 50%

Symbol Key:

Water Level

Sample Location

fbg = feet below grade

NA = not available

ppm = parts per million

in. = inches

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WELL LOG

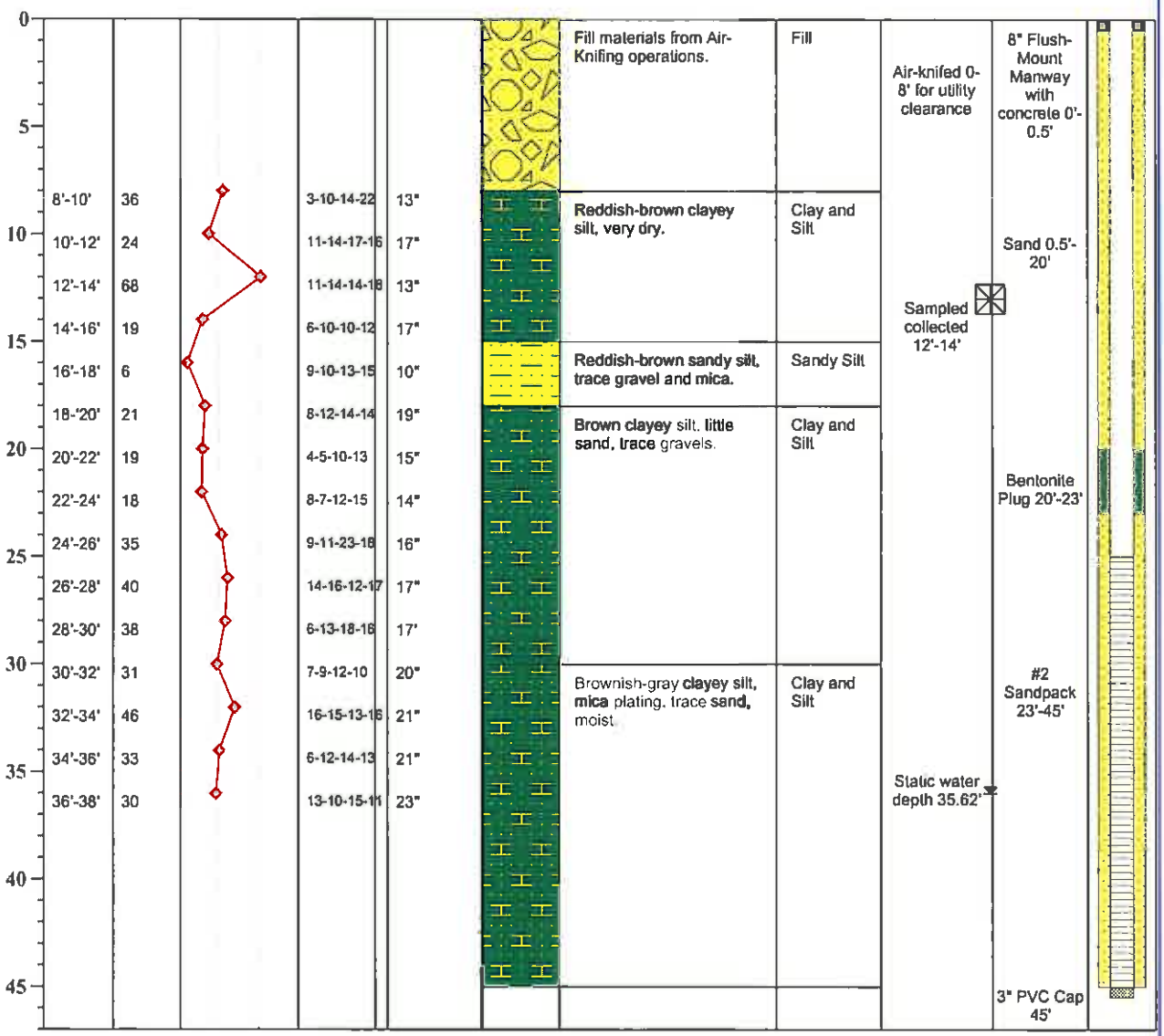
ID NO. **MW-9**

Groundwater and Environmental Services, Inc.

PROJECT:	ExxonMobil Station # 2-6140	WATER DEPTH:	35.62'	TOTAL DEPTH:	45'
ADDRESS:	9901 Georgetown Pike, Great Falls, VA			CASING EL.:	333.46
JOB NO.	0402403	BOREHOLE DIA.:	4.25"	WELL DIA.:	2"

Logged By:	Jeremy Joiner	Drilling Method:	Hollow Stem Auger
Dates Drilled:	10/09/2009	Sampling Method:	Split Spoon
Drilling Company:	B.L. Meyers	Soil Class. System:	NA
Well Permit #:		Field Screening:	MiniRae 2000, Model PGM 7600

Depth (feet)	Sample Interval (feet)	Field Screen: Total Organic Volatiles (ppm) 0–10	Blow Counts	Recovery (inches)	Sample Lithology	Stratigraphy	Comments	Completion Details
					Fill materials from Air-Knifing operations.	Fill	Air-knifed 0-8' for utility clearance	8" Flush-Mount Manway with concrete 0'-0.5'
	8'-10'	36	3-10-14-22	13"	Reddish-brown clayey silt, very dry.	Clay and Silt		
	10'-12'	24	11-14-17-16	17"				Sand 0.5'-20'
	12'-14'	68	11-14-14-18	13"			Sampled collected 12'-14'	
	14'-16'	19	6-10-10-12	17"				
	16'-18'	6	9-10-13-15	10"	Reddish-brown sandy silt, trace gravel and mica.	Sandy Silt		
	18-'20'	21	8-12-14-14	19"	Brown clayey silt, little sand, trace gravels.	Clay and Silt		
	20'-22'	19	4-5-10-13	15"				Bentonite Plug 20'-23'
	22'-24'	18	8-7-12-15	14"				
	24'-26'	35	9-11-23-18	16"				
	26'-28'	40	14-16-12-17	17"				
	28'-30'	38	6-13-18-16	17'				
	30'-32'	31	7-9-12-10	20"	Brownish-gray clayey silt, mica plating, trace sand, moist.	Clay and Silt		#2 Sandpack 23'-45'
	32'-34'	46	16-15-13-16	21"				
	34'-36'	33	6-12-14-13	21"			Static water depth 35.62'	
	36'-38'	30	13-10-15-11	23"				
								3" PVC Cap 45'



LEGEND

Proportion Descriptions:

Trace = <10% Some = <50%

Little = <25% And = 50%

Symbol Key:

Water Level

Sample Location

fbg = feet below grade

NA = not available

ppm = parts per million

in. = inches

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WELL LOG

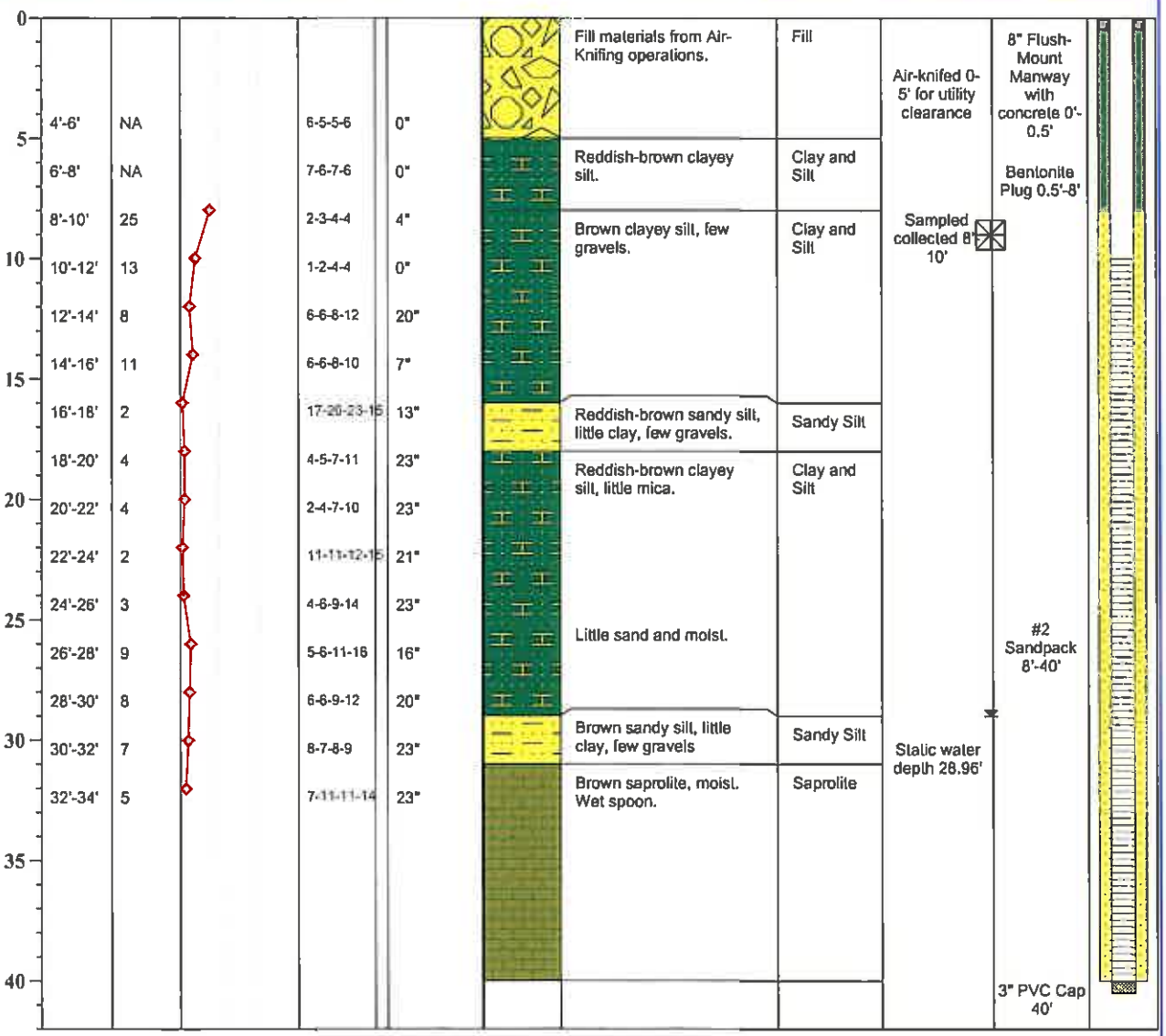
ID NO. **MW-10**

Groundwater and Environmental Services, Inc.

PROJECT:	ExxonMobil Station # 2-6140	WATER DEPTH:	28.96'	TOTAL DEPTH:	40'
ADDRESS:	9901 Georgetown Pike, Great Falls, VA			CASING EL.:	324.17
JOB NO.	0402403	BOREHOLE DIA.:	4.25"	WELL DIA.:	2"

Logged By:	Jeremy Joiner	Drilling Method:	Hollow Stem Auger
Dates Drilled:	10/12/2009	Sampling Method:	Split Spoon
Drilling Company:	B.L. Meyers	Soil Class. System:	NA
Well Permit #:		Field Screening:	MiniRae 2000, Model PGM 7600

Depth (feet)	Sample Interval (feet)	Field Screen: Total Organic Volatiles (ppm)	Blow Counts	Recovery (inches)	Sample Lithology	Stratigraphy	Comments	Completion Details
	4'-6'	NA	6-5-5-6	0"	Fill materials from Air-Knifing operations.	Fill	Air-knifed 0-5' for utility clearance	8" Flush-Mount Manway with concrete 0'-0.5'
	6'-8'	NA	7-6-7-6	0"	Reddish-brown clayey silt.	Clay and Silt		Bentonite Plug 0.5'-8'
	8'-10'	25	2-3-4-4	4"	Brown clayey silt, few gravels.	Clay and Silt	Sampled collected 8'-10'	
	10'-12'	13	1-2-4-4	0"				
	12'-14'	8	6-6-8-12	20"				
	14'-16'	11	6-6-8-10	7"				
	16'-18'	2	17-20-23-15	13"	Reddish-brown sandy silt, little clay, few gravels.	Sandy Silt		
	18'-20'	4	4-5-7-11	23"	Reddish-brown clayey silt, little mica.	Clay and Silt		
	20'-22'	4	2-4-7-10	23"				
	22'-24'	2	11-11-12-15	21"				
	24'-26'	3	4-6-9-14	23"				
	26'-28'	9	5-6-11-16	16"	Little sand and moist.			#2 Sandpack 8'-40'
	28'-30'	8	6-6-9-12	20"				
	30'-32'	7	8-7-8-9	23"	Brown sandy silt, little clay, few gravels	Sandy Silt	Static water depth 28.96'	
	32'-34'	5	7-11-11-14	23"	Brown saprolite, moist. Wet spoon.	Saprolite		
								3" PVC Cap 40'



LEGEND

Proportion Descriptions:

Trace = <10% Some = <50%

Little = <25% And = 50%

Symbol Key:

Water Level

Sample Location

fbg = feet below grade

NA = not available

ppm = parts per million

in. = inches

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WELL LOG

ID NO. **MW-11**

Groundwater and Environmental Services, Inc.

PROJECT:	ExxonMobil Station # 2-6140	WATER DEPTH:	32.16'	TOTAL DEPTH:	40'
ADDRESS:	9901 Georgetown Pike, Great Falls, VA			CASING EL.:	329.64
JOB NO.	0402403	BOREHOLE DIA.:	4.25"	WELL DIA.:	2"

Logged By:	Jeremy Joiner	Drilling Method:	Hollow Stem Auger
Dates Drilled:	10/14/2009	Sampling Method:	Split Spoon
Drilling Company:	B.L. Meyers	Soil Class. System:	NA
Well Permit #:		Field Screening:	MiniRae 2000, Model PGM 7600

Depth (feet)	Sample Interval (feet)	Field Screen: Total Organic Volatiles (ppm) 0–10	Blow Counts	Recovery (inches)	Sample Lithology	Stratigraphy	Comments	Completion Details
					Fill materials from Air-knifing operations.	Fill	Air-knifed 0-8' for utility clearance	8" Flush-Mount Manway with concrete 0'-0.5'; Grout 0.5'-6'; Bentonite Plug 6'-8'
	8'-10'	49	6-6-7-17	21"	Reddish-brown clayey silt, few gravels.	Clay and Silt		
	10'-12'	51	20-18-27-24	15"				
	12'-14'	47	14-18-20-31	15"				
	14'-16'	49	16-25-30-50/5	16"	-Mottled Black-brown			
	16'-18'	116	38-35-35-36	14"	-trace sand			
	18'-20'	150	24-37-40-49	10"				
	20'-22'	300	15-21-28-26	11"	-little sand, trace mica			
	22'-24'	474	11-19-29-31	6"	-grayish-brown			
	24'-26'	1746	24-27-36-36	10"				
	26'-28'	1700	36-30-30-33	18"	Reddish-brown sandy silt, little gravels, trace clay.	Sandy Silt		#2 Sandpack 8'-40'
	28'-30'	1800	16-17-20-21	23"				
	30'-32'	4200	9-12-15-17	23"	- Grey-brown, moist			
	32'-34'	5380	12-15-21-31	23"	- very moist		Static water depth 32.16'; Sampled collected 32'-34'	
	34'-36'	1770	10-11-14-18	20"				
	36'-38'	501	13-25-32-32	20"				
	38'-40'	480	9-7-22-27	18"				
								3" PVC Cap 40'

LEGEND

Proportion Descriptions:

Trace = <10% Some = <50%

Little = <25% And = 50%

Symbol Key:

Water Level

Sample Location

fbg = feet below grade

NA = not available

ppm = parts per million

in. = inches

Groundwater & Environmental Services, Inc.
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1340 Charwood Road, Suite I
Hanover, MD 21076
(410) 850-0404

BORING LOG
Boring No. MW-12

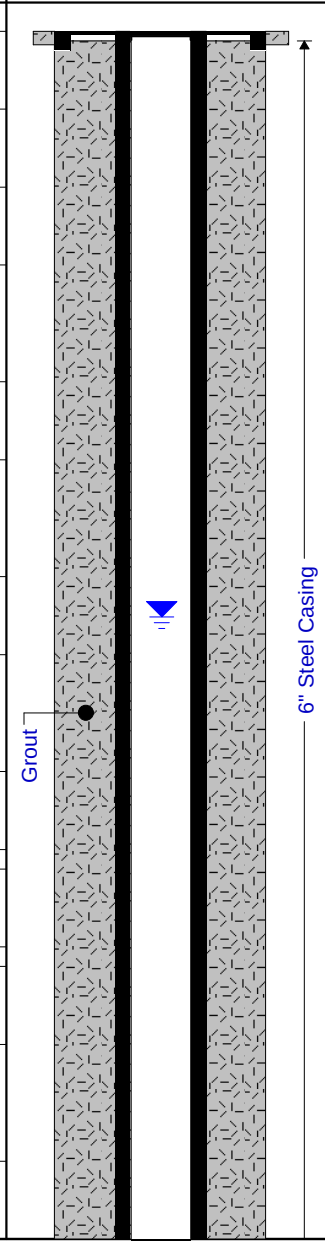
Project Name: Fairfax Facility #26140 Great Falls
Site Location: 9830 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 114992
Client: Fairfax Petroleum Realty LLC
Drilling Company: Connelly and Assoc.
Driller: C. Shaff
Drill Rig Type: Schramm T450
Drilling Method: Air Rotary
Sampling Method: Cuttings

Start Date: 1-11-11
End Date: 1-13-11
Total Hole Depth: 160 feet
Hole Diameter: 10"(0-100), 6"(100-160)
Depth to Bedrock: 95 feet
Surface Elevation: 326.43 feet
Water Level (Initial): 85 feet
Water Level (Static): 30.07 feet
Logged By (Geol.): C. Low

Permit No.: NA
License No.: NA
Checked By: R. Perkins
Notes:

SUBSURFACE PROFILE | **SAMPLE**

Depth (feet)	Graphic Log	Soil/Geologic Description (Unified Soil Classification System)	Sample ID	PID (ppm)
0		Ground Surface		
0–9		***SP*** Very fine SAND, brown, dry		0.0
10–19		***SM*** Fine SAND with trace silt, light brown, dry		0.0
20–29		***SM*** Fine SAND with trace silt, light brown, slightly micaceous, dry		0.0
30		Weathered Rock at 30 feet		0.0
30–39		***SM*** Silty fine SAND, light brown, micaceous, dry		0.0
40–61		***ML*** SILT with fine sand, gray, micaceous, dry Cuttings moist at 45 feet	MW-12 (45)	0.0
				0.0
				0.0



PID - Photoionization Detector
NA - Not Applicable
NS - Not Sampled
NM - Not Measured
MU - Meter Units
PP - Pocket Penetrometer Reading (tons/sq. foot)

KLEINFELDER Bright People. Right Solutions.	1340 Charwood Road, Suite I Hanover, MD 21076 (410) 850-0404	BORING LOG **Boring No. MW-12**

Project Name: Fairfax Facility #26140 Great Falls
Site Location: 9830 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 114992
Client: Fairfax Petroleum Realty LLC
Drilling Company: Connelly and Assoc.
Driller: C. Shaff
Drill Rig Type: Schramm T450
Drilling Method: Air Rotary
Sampling Method: Cuttings

Start Date: 1-11-11
End Date: 1-13-11
Total Hole Depth: 160 feet
Hole Diameter: 10"(0-100), 6"(100-160)
Depth to Bedrock: 95 feet
Surface Elevation: 326.43 feet
Water Level (Initial): 85 feet
Water Level (Static): 30.07 feet
Logged By (Geol.): C. Low

Permit No.: NA
License No.: NA
Checked By: R. Perkins
Notes:

SUBSURFACE PROFILE			SAMPLE			
Depth (feet)	Graphic Log	Soil/Geologic Description (Unified Soil Classification System)	Sample ID	PID (ppm)	Well Construction	Depth (feet)
62–65						62–65
65–90		***ML*** SILT with fine sand, rock fragments, gray, moist, micaceous Water returning at surface at 85 feet		0.0 0.0 0.0 0.0		65–90
90–95		***ML*** SILT with gravel, gray, micaceous, wet, rock fragments		0.0 0.0		90–95
95–122		***Bk*** Schist, black, some quartz grains Water bearing fracture at 109 - 110 feet			Bedrock	95–122

PID - Photoionization Detector
NA - Not Applicable
NS - Not Sampled
NM - Not Measured
MU - Meter Units
PP - Pocket Penetrometer Reading (tons/sq. foot)

KLEINFELDER Bright People. Right Solutions.	**1340 Charwood Road, Suite I** **Hanover, MD 21076** **(410) 850-0404**	BORING LOG **Boring No. MW-12**

Project Name: Fairfax Facility #26140 Great Falls
Site Location: 9830 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 114992
Client: Fairfax Petroleum Realty LLC
Drilling Company: Connelly and Assoc.
Driller: C. Shaff
Drill Rig Type: Schramm T450
Drilling Method: Air Rotary
Sampling Method: Cuttings

Start Date: 1-11-11
End Date: 1-13-11
Total Hole Depth: 160 feet
Hole Diameter: 10"(0-100), 6"(100-160)
Depth to Bedrock: 95 feet
Surface Elevation: 326.43 feet
Water Level (Initial): 85 feet
Water Level (Static): 30.07 feet
Logged By (Geol.): C. Low

Permit No.: NA
License No.: NA
Checked By: R. Perkins
Notes:

SUBSURFACE PROFILE			SAMPLE			
Depth (feet)	Graphic Log	Soil/Geologic Description (Unified Soil Classification System)	Sample ID	PID (ppm)	Well Construction	Depth (feet)
123–160		Fracture at 153 feet			6" Open Borehole	123–160
161		End of Borehole				161
162–183						162–183

PID - Photoionization Detector
NA - Not Applicable
NS - Not Sampled
NM - Not Measured
MU - Meter Units
PP - Pocket Penetrometer Reading (tons/sq. foot)

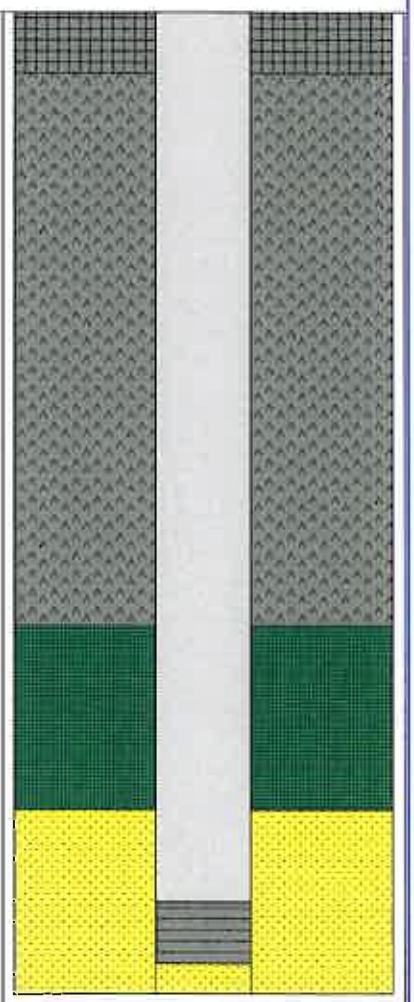
VAPOR POINT LOG ID NO. VP-1

Groundwater and Environmental Services, Inc.

PROJECT:	ExxonMobil Station # 2-6140	WATER DEPTH:	NA	TOTAL DEPTH:	8'
ADDRESS:	9901 Georgetown Pike, Great Falls, VA			CASING EL.:	331.62
JOB NO.	0402403	BOREHOLE DIA.:	4"	WELL DIA.:	0.25"

Logged By:	Tim Davis	Drilling Method:	Air-Knifing
Dates Drilled:	10/06/09	Sampling Method:	NA
Drilling Company:	B.L. Myers	Soil Class. System:	NA
Well Permit #:	NA	Field Screening:	NA

Depth (feet)		Comments	Completion Details
0		8" Flush-Mount Manway with concrete 0'-0.5'	
	0.25" Teflon Tubing 0'-7.25'		
		Grout 0.5'-5'	
5		Bentonite Plug 5'-6.5'	
	0.25 Stainless Steel Screen 7.25'-7.75'	#2 Sandpack 6.5'-8'	



LEGEND

Proportion Descriptions:

Trace = <10% Some = <50%

Little = <25% And = 50%

Symbol Key:

Water Level

Sample Location

fbg = feet below grade
NA = not available
ppm = parts per million
in. = inches

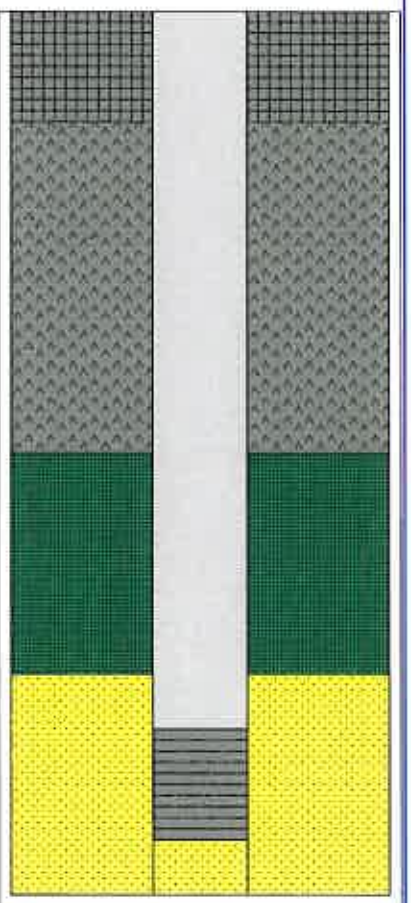
Groundwater & Environmental Services, Inc.
2142 Priest Bridge Court, Crofton, Maryland 800.220.3606 Fax 410.721.3733

VAPOR POINT LOG ID NO. VP-2S

Groundwater and Environmental Services, Inc.

PROJECT:	ExxonMobil Station # 2-6140	WATER DEPTH:	NA	TOTAL DEPTH:	4'
ADDRESS:	9901 Georgetown Pike, Great Falls, VA			CASING EL.:	331.31
JOB NO.	0402403	BOREHOLE DIA.:	4"	WELL DIA.:	0.25"

Logged By:	Tim Davis	Drilling Method:	Air-Knifing
Dates Drilled:	10/06/09	Sampling Method:	NA
Drilling Company:	B.L. Myers	Soil Class. System:	NA
Well Permit #:	NA	Field Screening:	NA

Depth (feet)		Comments	Completion Details
0		8" Flush-Mount Manway with concrete 0'-0.5'	
		Grout 0.5'-2'	
	0.25" Teflon Tubing 0'-3.25'		
		Bentonite Plug 2'-3'	
		#2 Sandpack 3'-4'	
	0.25 Stainless Steel Screen 3.25'-3.75'		
5			

LEGEND

Proportion Descriptions:

Trace = <10% Some = <50%

Little = <25% And = 50%

Symbol Key:

Water Level

Sample Location

fbg = feet below grade

NA = not available

ppm = parts per million

in. = inches

Groundwater & Environmental Services, Inc.
2142 Priest Bridge Court, Crofton, Maryland 800.220.3606 Fax 410.721.3733

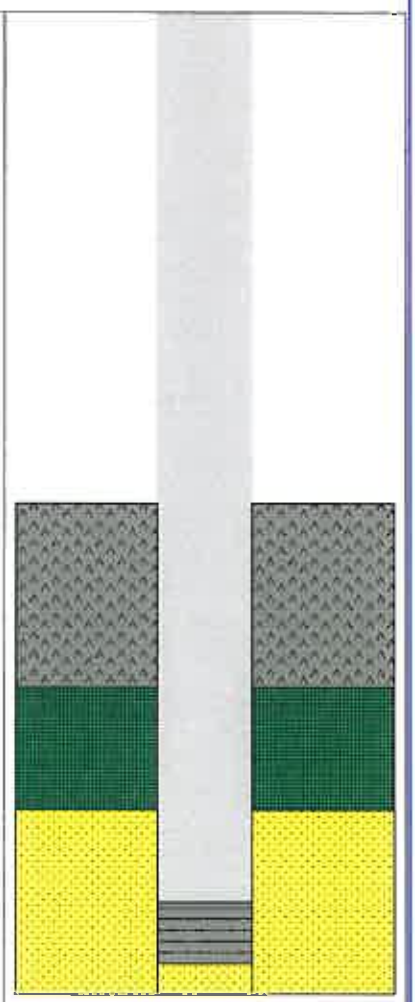
VAPOR POINT LOG ID NO. VP-2D

Groundwater and Environmental Services, Inc.

PROJECT:	ExxonMobil Station # 2-6140	WATER DEPTH:	NA	TOTAL DEPTH:	8'
ADDRESS:	9901 Georgetown Pike, Great Falls, VA			CASING EL.:	331.31
JOB NO.	0402403	BOREHOLE DIA.:	4"	WELL DIA.:	0.25"

Logged By:	Tim Davis	Drilling Method:	Air-Knifing
Dates Drilled:	10/02/09	Sampling Method:	NA
Drilling Company:	B.L. Myers	Soil Class. System:	NA
Well Permit #:	NA	Field Screening:	NA

Depth (feet)		Comments	Completion Details
0	0.25" Teflon Tubing 0'-7.25'		
		Grout 4'-5.5'	
5		Bentonite Plug 5.5'-6.5'	
	0.25 Stainless Steel Screen 7.25'-7.75'	#2 Sandpack 6.5'-8'	



LEGEND

Proportion Descriptions:

Trace = <10% Some = <50%

Little = <25% And = 50%

Symbol Key:

Water Level

Sample Location

fbg = feet below grade
NA = not available
ppm = parts per million
in. = inches

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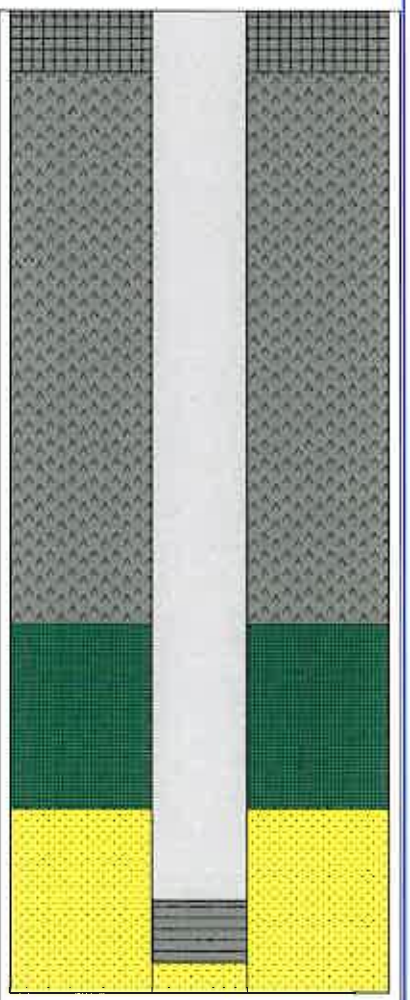
2142 Priest Bridge Court, Crofton, Maryland 800.220.3606 Fax 410.721.3733

VAPOR POINT LOG ID NO. VP-3

Groundwater and Environmental Services, Inc.

PROJECT:	ExxonMobil Station # 2-6140	WATER DEPTH:	NA	TOTAL DEPTH:	8'
ADDRESS:	9901 Georgetown Pike, Great Falls, VA			CASING EL.:	327.23
JOB NO.	0402403	BOREHOLE DIA.:	4"	WELL DIA.:	0.25"

Logged By:	Tim Davis	Drilling Method:	Air-Knifing
Dates Drilled:	10/02/09	Sampling Method:	NA
Drilling Company:	B.L. Myers	Soil Class. System:	NA
Well Permit #:	NA	Field Screening:	NA

Depth (feet)		Comments	Completion Details
0		8" Flush-Mount Manway with concrete 0'-0.5'	
	0.25" Teflon Tubing 0'-7.25'		
		Grout 0.5'-5'	
5		Bentonite Plug 5'-6.5'	
	0.25 Stainless Steel Screen 7.25'-7.75'	#2 Sandpack 6.5'-8'	

LEGEND

Proportion Descriptions:

Trace = <10% Some = <50%

Little = <25% And = 50%

Symbol Key:

Water Level

Sample Location

fbg = feet below grade

NA = not available

ppm = parts per million

in. = inches

Groundwater & Environmental Services, Inc.
2142 Priest Bridge Court, Crofton, Maryland 800.220.3606 Fax 410.721.3733

KLEINFELDER
Bright People. Right Solutions.

1340 Charwood Road, Suite I
Hanover, MD 21076
(410) 850-0404

BORING LOG
Boring No. MW-13

Project Name: Fairfax Facility #26140
Site Location: 9901 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 121473
Client: Fairfax Petroleum Realty LLC
Drilling Company: B.L. Myers Bros.
Driller: J. Long
Drill Rig Type: Mobile B-61
Drilling Method: 6.25 inch Hollow Stem Augers
Sampling Method: Split Spoon

Start Date: 8-18-11
End Date: 8-23-11
Total Hole Depth: 45 feet
Hole Diameter: 10 inches
Depth to Bedrock: Not encountered
Surface Elevation: 332.00 feet
Water Level (Initial): 31 feet
Water Level (Static): 33.98 feet
Logged By (Geol.): R. Reeves

Permit No.: NA
License No.: NA
Checked By: BB
Notes: Airknife to 7.5 feet

SUBSURFACE PROFILE			SAMPLE				
Depth (feet)	Graphic Log	Soil/Geologic Description (Unified Soil Classification System)	Sample ID	Blows/6 in	PID (ppm)	Well Construction	Depth (feet)
0		Ground Surface					0
		Concrete					
1		***SM*** Fine SAND with silt and some clay, dark orange-brown, damp					1
2					0.0		2
3							3
4		***SM*** Fine SAND with silt and some clay, dark brown, dry			0.0		4
5							5
6							6
7					0.0		7
8							8
9							9
10		***ML*** SILT with fine sand, dark orange-brown, damp, micaceous		3, 4, 6, 9	3.3	Portland Cement / Bentonite Grout; 4" PVC Riser	10
11							11
12							12
13							13
14							14
15				7, 9, 17, 22	29.9		15
16							16
17				8, 15, 21, 24	16.0		17
18							18
19		***ML*** SILT with fine sand and some clay, dark orange-brown, damp to moist, micaceous		2, 4, 6, 13	23.3		19
20							20
21				15, 18, 20, 24	96.8	Bentonite	21
22							22
23				23, 21, 25, 28	158		23
24							24
25				3			25

PID - Photoionization Detector
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KLEINFELDER
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BORING LOG
Boring No. MW-13

Project Name: Fairfax Facility #26140
Site Location: 9901 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 121473
Client: Fairfax Petroleum Realty LLC
Drilling Company: B.L. Myers Bros.
Driller: J. Long
Drill Rig Type: Mobile B-61
Drilling Method: 6.25 inch Hollow Stem Augers
Sampling Method: Split Spoon

Start Date: 8-18-11
End Date: 8-23-11
Total Hole Depth: 45 feet
Hole Diameter: 10 inches
Depth to Bedrock: Not encountered
Surface Elevation: 332.00 feet
Water Level (Initial): 31 feet
Water Level (Static): 33.98 feet
Logged By (Geol.): R. Reeves

Permit No.: NA
License No.: NA
Checked By: BB
Notes: Airknife to 7.5 feet

SUBSURFACE PROFILE			SAMPLE				
Depth (feet)	Graphic Log	Soil/Geologic Description (Unified Soil Classification System)	Sample ID	Blows/6 in	PID (ppm)	Well Construction	Depth (feet)
26		***ML*** SILT with fine sand and some clay, dark orange-brown, moist, micaceous		3, 12, 19, 24	151		26
27							27
28			MW-13 (27-29)	18, 26, 20, 19	364		28
29		***ML*** SILT with fine sand and some clay, dark orange-brown and dark brown, wet, micaceous		9, 18, 30, 34	111		29
30							30
31							31
32							32
33							33
34							34
35				42, 46, 48, 49	77.4	#2 Silica Sand	35
36							36
37							37
38							38
39		***ML*** SILT with fine sand and some clay, brown and olive brown, wet, micaceous					39
40				21, 29, 32, 32	7.6		40
41							41
42							42
43							43
44				9, 12, 19, 22	60.1	4" 0.020-inch Slotted Screen	44
45		End of Borehole					45
46							46
47							47
48							48
49							49
50							50

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(410) 850-0404

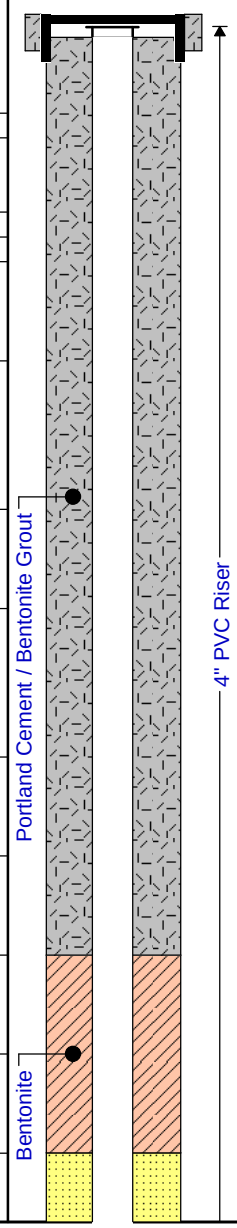
BORING LOG
Boring No. MW-14

Project Name: Fairfax Facility #26140
Site Location: 9901 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 121473
Client: Fairfax Petroleum Realty LLC
Drilling Company: B.L. Myers Bros.
Driller: J. Long
Drill Rig Type: Mobile B-61
Drilling Method: 6.25 inch Hollow Stem Augers
Sampling Method: Split Spoon

Start Date: 8-18-11
End Date: 8-23-11
Total Hole Depth: 47 feet
Hole Diameter: 10 inches
Depth to Bedrock: Not encountered
Surface Elevation: 331.81 feet
Water Level (Initial): 31 feet
Water Level (Static): 35.02 feet
Logged By (Geol.): R. Reeves

Permit No.: NA
License No.: NA
Checked By: BB
Notes: Airknife to 5 feet

SUBSURFACE PROFILE			SAMPLE				
Depth (feet)	Graphic Log	Soil/Geologic Description (Unified Soil Classification System)	Sample ID	Blows/6 in	PID (ppm)	Well Construction	Depth (feet)
0		Ground Surface					0
		Concrete					
1		***SM*** Fine SAND with silt and some clay, dark orange-brown, damp					1
2					0.0		2
3							3
4		***SM*** Fine SAND with silt and some clay, light orange-brown, damp			0.0		4
5				3			5
6		***SM*** Fine SAND with silt and some clay, light brown and light orange-brown, damp		5	0.0		6
7				7			7
				9			
8							8
9							9
10		***ML*** SILT with fine sand and some clay, light brown and light orange-brown, dry to damp, micaceous					10
11				6			11
				9	0.0		
				7			
12				11			12
13							13
14							14
15							15
				6			
16				10	2.2		16
				11			
17				15			17
				17			
18				22	2.0		18
				32			
19				36			19
				7			
20				20	5.8		20
				26			
21				24			21
				27			
22				29	1.9		22
				34			
23				37			23
				22			
24				27	1.2		24
				32			



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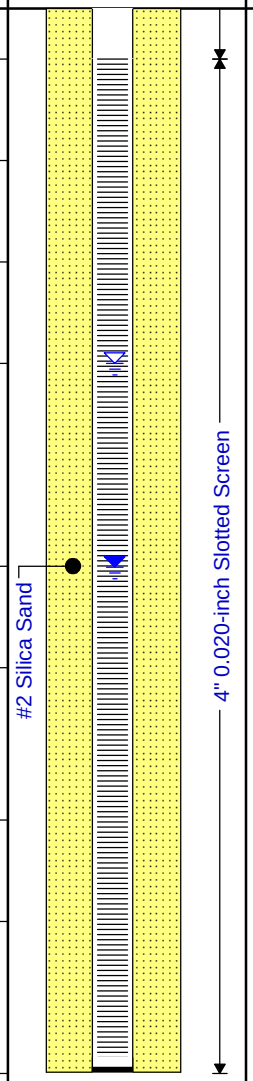
KLEINFELDER Bright People. Right Solutions.	1340 Charwood Road, Suite I Hanover, MD 21076 (410) 850-0404	BORING LOG **Boring No. MW-14**

Project Name: Fairfax Facility #26140
Site Location: 9901 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 121473
Client: Fairfax Petroleum Realty LLC
Drilling Company: B.L. Myers Bros.
Driller: J. Long
Drill Rig Type: Mobile B-61
Drilling Method: 6.25 inch Hollow Stem Augers
Sampling Method: Split Spoon

Start Date: 8-18-11
End Date: 8-23-11
Total Hole Depth: 47 feet
Hole Diameter: 10 inches
Depth to Bedrock: Not encountered
Surface Elevation: 331.81 feet
Water Level (Initial): 31 feet
Water Level (Static): 35.02 feet
Logged By (Geol.): R. Reeves

Permit No.: NA
License No.: NA
Checked By: BB
Notes: Airknife to 5 feet

SUBSURFACE PROFILE			SAMPLE				
Depth (feet)	Graphic Log	Soil/Geologic Description (Unified Soil Classification System)	Sample ID	Blows/6 in	PID (ppm)	Well Construction	Depth (feet)
25				32, 38			25
26		***ML*** SILT with fine sand and some clay, light brown to olive brown, moist, micaceous		11, 15, 22, 32	20.9		26
27							27
28				6, 8, 13, 19	10.2		28
29		***ML*** SILT with fine sand and some clay, light brown to olive brown, wet, micaceous		8, 20, 22, 24	117		29
30			MW-14 (29-31)				30
31							31
32							32
33							33
34							34
35				8, 9, 18, 21	89.1	#2 Silica Sand	35
36							36
37							37
38							38
39							39
40				6, 8, 11, 14	148		40
41							41
42							42
43							43
44							44
45							45
46					28.1		46
47		End of Borehole					47
48							48



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BORING LOG
Boring No. MW-15

Project Name: Fairfax Facility #26140
Site Location: 9901 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 121473
Client: Fairfax Petroleum Realty LLC
Drilling Company: B.L. Myers Bros.
Driller: J. Long
Drill Rig Type: Mobile B-61
Drilling Method: 6.25 inch Hollow Stem Augers
Sampling Method: Split Spoon

Start Date: 8-18-11
End Date: 8-22-11
Total Hole Depth: 45 feet
Hole Diameter: 10 inches
Depth to Bedrock: Not encountered
Surface Elevation: 328.95 feet
Water Level (Initial): 35 feet
Water Level (Static): 33.06 feet
Logged By (Geol.): R. Reeves

Permit No.: NA
License No.: NA
Checked By: BB
Notes: Airknife to 5 feet

SUBSURFACE PROFILE | **SAMPLE**

Depth (feet)	Graphic Log	Soil/Geologic Description (Unified Soil Classification System)	Sample ID	Blows/6 in	PID (ppm)	Well Construction	Depth (feet)
0		Ground Surface					0
		Concrete					
1		***CL*** Clay with silt, dark brown, damp					1
2					0.0		2
3							3
4		***SM*** Fine SAND with silt and some clay, dark orange-brown, dry to damp			0.0		4
5				50\2"			5
6		No Recovery					6
7							7
8							8
9							9
10		***SM*** Fine SAND with silt and some clay, brown, dry to damp		50\3"		Portland Cement / Bentonite Grout; 4" PVC Riser	10
11					0.0		11
12							12
13							13
14							14
15		***ML*** SILT with fine sand and some clay, light brown and light orange-brown, damp, micaceous		21			15
16				13	0.0		16
				16			
				20			
17		***ML*** SILT with fine sand and some clay, light brown, damp, micaceous		20			17
18				18	0.0		18
				26			
				32			
19		***ML*** SILT with fine sand and some clay, light brown and light orange-brown, damp, micaceous		10			19
20				14	0.0		20
				14			
				22			
21				10		Bentonite	21
22				10	0.0		22
				12			
				16			
23				12			23
				19			
24				21	0.0		24

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MU - Meter Units
PP - Pocket Penetrometer Reading (tons/sq. foot)

KLEINFELDER Bright People. Right Solutions.	1340 Charwood Road, Suite I Hanover, MD 21076 (410) 850-0404	BORING LOG **Boring No. MW-15**

Project Name: Fairfax Facility #26140
Site Location: 9901 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 121473
Client: Fairfax Petroleum Realty LLC
Drilling Company: B.L. Myers Bros.
Driller: J. Long
Drill Rig Type: Mobile B-61
Drilling Method: 6.25 inch Hollow Stem Augers
Sampling Method: Split Spoon

Start Date: 8-18-11
End Date: 8-22-11
Total Hole Depth: 45 feet
Hole Diameter: 10 inches
Depth to Bedrock: Not encountered
Surface Elevation: 328.95 feet
Water Level (Initial): 35 feet
Water Level (Static): 33.06 feet
Logged By (Geol.): R. Reeves

Permit No.: NA
License No.: NA
Checked By: BB
Notes: Airknife to 5 feet

SUBSURFACE PROFILE			SAMPLE				
Depth (feet)	Graphic Log	Soil/Geologic Description (Unified Soil Classification System)	Sample ID	Blows/6 in	PID (ppm)	Well Construction	Depth (feet)
25				21, 23			25
26				7, 8, 10, 16	2.6		26
27				14, 19, 21, 23	2.2		27
28							28
29		***ML*** SILT with fine sand and some clay, brown, moist, micaceous			0.0		29
30							30
31				1, 3, 14, 26	0.0		31
32							32
33				8, 20, 42, 46	7.8		33
34			MW-15 (33-35)				34
35		***ML*** SILT with fine sand and some clay, brown, wet, micaceous				#2 Silica Sand; 4" 0.020-inch Slotted Screen	35
36							36
37							37
38		***ML*** SILT with fine sand and some clay, gray and orange-brown, wet, micaceous			10.2		38
39							39
40							40
41							41
42							42
43							43
44					48.3		44
45		End of Borehole					45
46							46
47							47
48							48

PID - Photoionization Detector
NA - Not Applicable
NS - Not Sampled
NM - Not Measured
MU - Meter Units
PP - Pocket Penetrometer Reading (tons/sq. foot)

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BORING LOG
Boring No. MW-16D

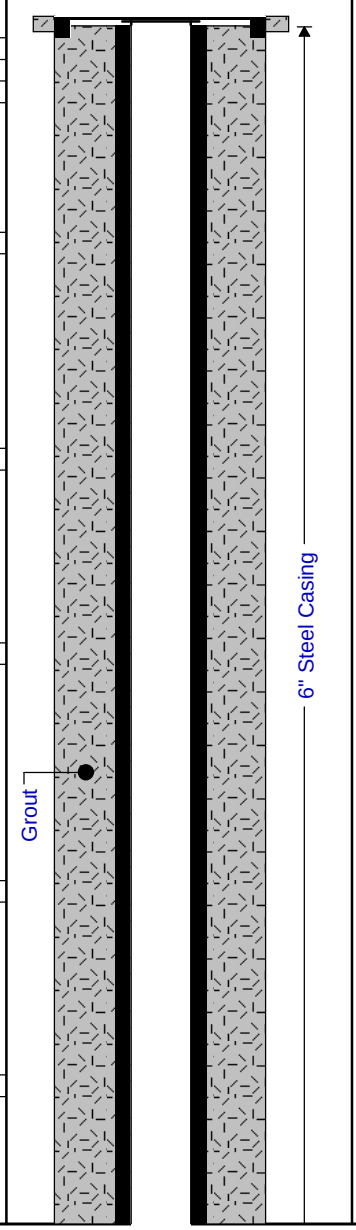
Project Name: Fairfax Facility #26140 Great Falls
Site Location: 9901 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 119667
Client: Fairfax Petroleum Realty LLC
Drilling Company: B.L. Myers Bros.
Driller: D. Ferrel
Drill Rig Type: Schramm T450W
Drilling Method: Air Rotary
Sampling Method: Grab / Cuttings

Start Date: 11-21-11
End Date: 11-22-11
Total Hole Depth: 150 feet
Hole Diameter: 10"(0-85), 6"(85-150)
Depth to Bedrock: 46 feet
Surface Elevation: 332.90 feet
Water Level (Initial): NA
Water Level (Static): 34.47 feet
Logged By (Geol.): C. Low

Permit No.: NA
License No.: NA
Checked By: B. Barone
Notes: Airknife to 5 feet

SUBSURFACE PROFILE | **SAMPLE**

Depth (feet)	Graphic Log	Soil/Geologic Description (Unified Soil Classification System)	Sample ID	PID (ppm)	Well Construction	Depth (feet)
0		Ground Surface				0
1		Concrete with rebar				1
2–9		***SM*** Silty fine SAND, red-brown, moist		0.3; 0.1		2–9
10–19		***ML*** Sandy SILT, light brown, dry, slightly micaceous		0.4		10–19
20–39		***ML*** Sandy SILT, light brown, moist, slightly micaceous; Saprolitic at 27 feet		17.6; 32.1		20–39
40–45		***ML*** Sandy SILT, olive-brown, moist, slightly micaceous, with rock fragments		19.8		40–45
46–55		***Bk*** Schist, gray		12.5		46–55



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NA - Not Applicable
NS - Not Sampled
NM - Not Measured
MU - Meter Units
PP - Pocket Penetrometer Reading (tons/sq. foot)

KLEINFELDER Bright People. Right Solutions.	1340 Charwood Road, Suite I Hanover, MD 21076 (410) 850-0404	BORING LOG **Boring No. MW-16D**

Project Name: Fairfax Facility #26140 Great Falls
Site Location: 9901 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 119667
Client: Fairfax Petroleum Realty LLC
Drilling Company: B.L. Myers Bros.
Driller: D. Ferrel
Drill Rig Type: Schramm T450W
Drilling Method: Air Rotary
Sampling Method: Grab / Cuttings

Start Date: 11-21-11
End Date: 11-22-11
Total Hole Depth: 150 feet
Hole Diameter: 10"(0-85), 6"(85-150)
Depth to Bedrock: 46 feet
Surface Elevation: 332.90 feet
Water Level (Initial): NA
Water Level (Static): 34.47 feet
Logged By (Geol.): C. Low

Permit No.: NA
License No.: NA
Checked By: B. Barone
Notes: Airknife to 5 feet

SUBSURFACE PROFILE			SAMPLE			
Depth (feet)	Graphic Log	Soil/Geologic Description (Unified Soil Classification System)	Sample ID	PID (ppm)	Well Construction	Depth (feet)
60				6.1		
70				8.4		
85		Water bearing fracture at 85-86 feet		3.2		
90				0.8		
96		Water bearing fracture at ~95 feet			Bedrock	
100				4.3		

PID - Photoionization Detector
NA - Not Applicable
NS - Not Sampled
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PP - Pocket Penetrometer Reading (tons/sq. foot)

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BORING LOG
Boring No. MW-16D

Project Name: Fairfax Facility #26140 Great Falls
Site Location: 9901 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 119667
Client: Fairfax Petroleum Realty LLC
Drilling Company: B.L. Myers Bros.
Driller: D. Ferrel
Drill Rig Type: Schramm T450W
Drilling Method: Air Rotary
Sampling Method: Grab / Cuttings

Start Date: 11-21-11
End Date: 11-22-11
Total Hole Depth: 150 feet
Hole Diameter: 10"(0-85), 6"(85-150)
Depth to Bedrock: 46 feet
Surface Elevation: 332.90 feet
Water Level (Initial): NA
Water Level (Static): 34.47 feet
Logged By (Geol.): C. Low

Permit No.: NA
License No.: NA
Checked By: B. Barone
Notes: Airknife to 5 feet

SUBSURFACE PROFILE			SAMPLE			
Depth (feet)	Graphic Log	Soil/Geologic Description (Unified Soil Classification System)	Sample ID	PID (ppm)	Well Construction	Depth (feet)
111		Water bearing fracture at 110 feet		2.2		111
112						112
113						113
114						114
115						115
116						116
117						117
118						118
119						119
120						120
121				1.9		121
122						122
123						123
124						124
125						125
126						126
127						127
128						128
129						129
130						130
131		***Bk*** Schist, black, some quartz grains		2.2		131
132						132
133						133
134						134
135						135
136						136
137						137
138						138
139						139
140						140
141		***Bk*** Schist, olive-brown, some quartz grains		1.6		141
142						142
143						143
144						144
145						145
146						146
147						147
148						148
149						149
150				1.1		150
151		End of Borehole				151
152						152
153						153
154						154
155						155
156						156
157						157
158						158
159						159
160						160
161						161
162						162
163						163
164						164
165						165

6" Open Borehole

PID - Photoionization Detector
NA - Not Applicable
NS - Not Sampled
NM - Not Measured
MU - Meter Units
PP - Pocket Penetrometer Reading (tons/sq. foot)

1340 Charwood Road
Suite I
Hanover, MD 21076

DRILLING LOG
Well No. MW-17D

Project Name: Fairfax 26140
Site Location: 9901 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 121473
Client: Fairfax Petroleum, LLC
Drilling Company: Eichelbergers, Inc.
Driller: CB
Drill Rig Type: Schramm T450WS
Drilling Method: Air knife/Air Rotary
Sampling Method: Hand auger/Cuttings

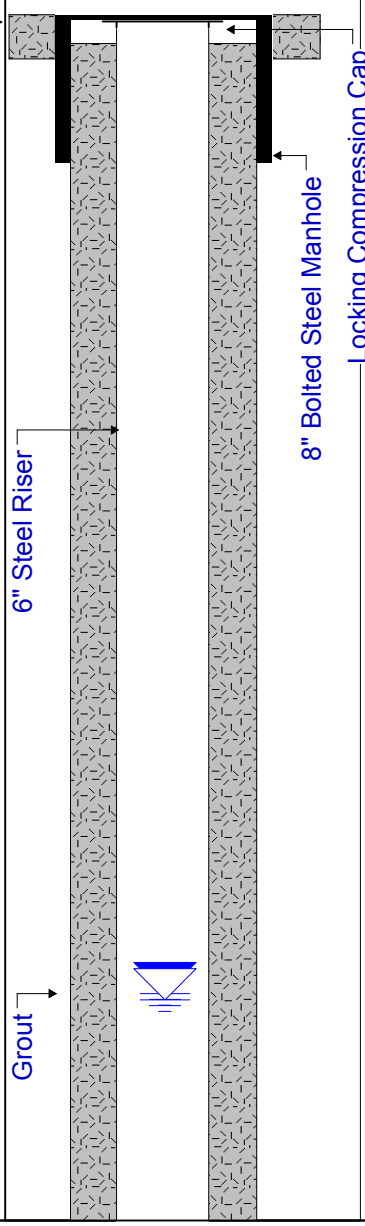
Start Date: 04/08/2013
End Date: 04/09/2013
Total Hole Depth: 150'
Hole Diameter: 10"/6"
Depth to Bedrock: ~63'
Top-Of-Casing Elevation: 328.99'
Water Level (Initial): ~33'
Water Level (Static): 33.21'
Logged By (Geol.): C. Low

Permit No.: NA
License No.: NA
Checked By: PW
Notes: Air knife to 5' bgs

SUBSURFACE PROFILE | **SAMPLE**

Depth (feet)	Graphic Log	USCS Code / Soil/Geologic Description	Sample ID	Blows/6"	Penetration / Recovery	VOC (ppm) 0–2000
0		Ground Surface				
0–1		~8" Concrete with rebar				0.1
1–3		***SC*** Dark brown, dry, clayey fine SAND				0.0, 0.5
3–20		***SM*** Red-brown, dry, silty fine SAND				0.3, 0.1
20–33		***SM*** Red-brown, dry, silty fine SAND with some gravel				0.3, 0.1
33–40		***SM*** Red-brown, moist, silty fine SAND with some gravel				26.5

Well Completion Details



VOC - Volatile Organic Compound
NA - Not Applicable
NS - Not Sampled
NR - Not Recorded
NM - Not Measured
NE - Not Encountered
bgs - below ground surface

USCS - Unified Soil Classification System
WOR - weight of rod
WOH - weight of hammer
ppm - parts per million

KLEINFELDER
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1340 Charwood Road
Suite I
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DRILLING LOG
Well No. MW-17D

Project Name: Fairfax 26140
Site Location: 9901 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 121473
Client: Fairfax Petroleum, LLC
Drilling Company: Eichelbergers, Inc.
Driller: CB
Drill Rig Type: Schramm T450WS
Drilling Method: Air knife/Air Rotary
Sampling Method: Hand auger/Cuttings

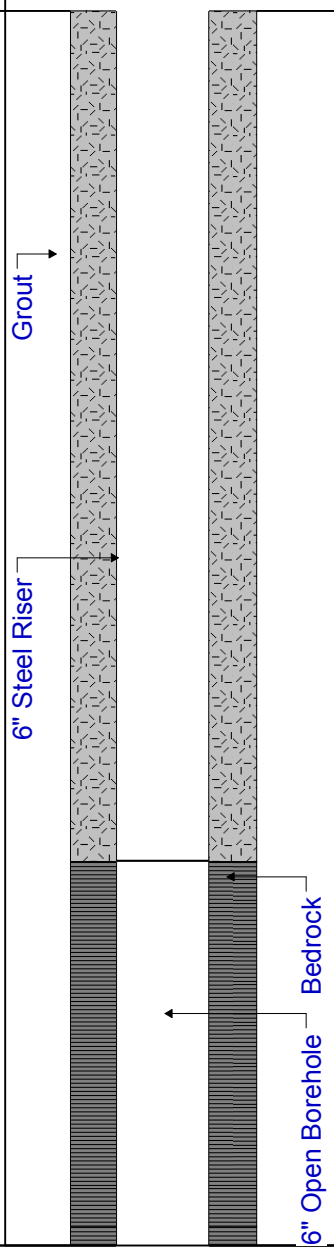
Start Date: 04/08/2013
End Date: 04/09/2013
Total Hole Depth: 150'
Hole Diameter: 10"/6"
Depth to Bedrock: ~63'
Top-Of-Casing Elevation: 328.99'
Water Level (Initial): ~33'
Water Level (Static): 33.21'
Logged By (Geol.): C. Low

Permit No.: NA
License No.: NA
Checked By: PW
Notes: Air knife to 5' bgs

SUBSURFACE PROFILE | **SAMPLE**

Depth (feet)	USCS Code / Soil/Geologic Description	Sample ID	Blows/6"	Penetration / Recovery	VOC (ppm) 0–2000
41–49	***SM*** Red-brown, moist, silty fine SAND with some gravel	MW-17D (40-42)			26.5
50–63	***SM*** Gray, moist, silty fine SAND with some gravel				32.8; 31.4
63–80	***BK*** Gray, SCHIST, competant rock encountered at 63' bgs; Water-bearing fracture @ 75-76' bgs				11.3; 5.1

Well Completion Details



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1340 Charwood Road
Suite I
Hanover, MD 21076

DRILLING LOG
Well No. MW-17D

Project Name: Fairfax 26140
Site Location: 9901 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 121473
Client: Fairfax Petroleum, LLC
Drilling Company: Eichelbergers, Inc.
Driller: CB
Drill Rig Type: Schramm T450WS
Drilling Method: Air knife/Air Rotary
Sampling Method: Hand auger/Cuttings

Start Date: 04/08/2013
End Date: 04/09/2013
Total Hole Depth: 150'
Hole Diameter: 10"/6"
Depth to Bedrock: ~63'
Top-Of-Casing Elevation: 328.99'
Water Level (Initial): ~33'
Water Level (Static): 33.21'
Logged By (Geol.): C. Low

Permit No.: NA
License No.: NA
Checked By: PW
Notes: Air knife to 5' bgs

SUBSURFACE PROFILE			SAMPLE				Well Completion Details	
Depth (feet)	Graphic Log	USCS Code Soil/Geologic Description	Sample ID	Blows/6"	Penetration / Recovery	VOC (ppm) 0 – 2000		Depth (feet)
81		***BK*** Gray, wet, SCHIST, competant rock				5.1		81
82								82
83								83
84								84
85								85
86								86
87								87
88								88
89		Water bearing zone 89-90' bgs						89
90						1.4		90
91								91
92		Potential fracture @ ~92' bgs						92
93								93
94								94
95								95
96								96
97								97
98								98
99						4.6		99
100							Bedrock	100
101								101
102								102
103								103
104								104
105								105
106								106
107								107
108								108
109						1.8	6" Open Borehole	109
110		Potential fracture @ ~111' bgs						110
111								111
112								112
113								113
114								114
115								115
116								116
117								117
118								118
119						5.1		119
120								120

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DRILLING LOG
Well No. MW-17D

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Kleinfelder Project No: 121473
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Drilling Company: Eichelbergers, Inc.
Driller: CB
Drill Rig Type: Schramm T450WS
Drilling Method: Air knife/Air Rotary
Sampling Method: Hand auger/Cuttings

Start Date: 04/08/2013
End Date: 04/09/2013
Total Hole Depth: 150'
Hole Diameter: 10"/6"
Depth to Bedrock: ~63'
Top-Of-Casing Elevation: 328.99'
Water Level (Initial): ~33'
Water Level (Static): 33.21'
Logged By (Geol.): C. Low

Permit No.: NA
License No.: NA
Checked By: PW
Notes: Air knife to 5' bgs

SUBSURFACE PROFILE			SAMPLE				
Depth (feet)	Graphic Log	USCS Code Soil/Geologic Description	Sample ID	Blows/6"	Penetration / Recovery	VOC (ppm) 0 – 2000	Well Completion Details
130–149		***BK*** Black, wet, SCHIST, competant rock; Potential Fracture ~ 138-139' bgs; ***BK*** Black, wet, SCHIST, compentant rock, olive brown, some quartz fragments				5.1; 3.2; 4.6; 2.2	Bedrock; 6" Open Borehole
150		End of Boring					

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1340 Charwood Road
Suite I
Hanover, MD 21076

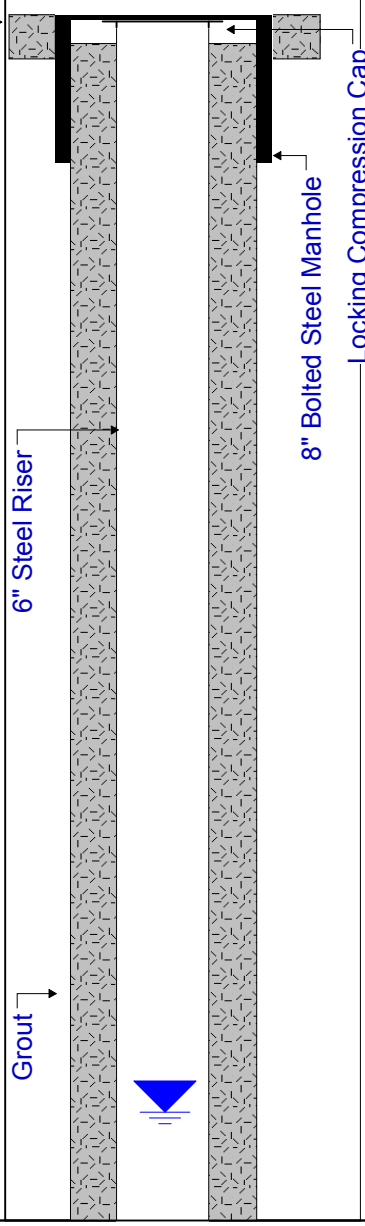
DRILLING LOG
Well No. MW-18D

Project Name: Fairfax 26140
Site Location: 9901 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 121473
Client: Fairfax Petroleum, LLC
Drilling Company: Eichelbergers, Inc.
Driller: CB
Drill Rig Type: Schramm T450WS
Drilling Method: Air knife/Air Rotary
Sampling Method: Hand auger/Cuttings

Start Date: 04/08/2013
End Date: 04/11/2013
Total Hole Depth: 136'
Hole Diameter: 10"/6"
Depth to Bedrock: ~92'
Top-Of-Casing Elevation: 334.88
Water Level (Initial): ~37'
Water Level (Static): 40.69'
Logged By (Geol.): C. Low

Permit No.: NA
License No.: NA
Checked By: PW
Notes: Air knife to 5' bgs

SUBSURFACE PROFILE			SAMPLE				
Depth (feet)	Graphic Log	USCS Code Soil/Geologic Description	Sample ID	Blows/6"	Penetration / Recovery	VOC (ppm) 0 – 2000	Well Completion Details
0		Ground Surface					
0–1		Grass and Topsoil					
1–5		***SM*** Red-brown, dry, silty fine SAND				0.0, 0.0, 0.0, 0.0	
5–30		***SM*** Red-brown, dry, silty fine SAND				0.0, 0.0, 0.0	
30–37		***SM*** Gray, dry silty fine SAND				0.0	
37–40		***SM*** Gray, moist, silty fine SAND				0.0	



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1340 Charwood Road
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DRILLING LOG
Well No. MW-18D

Project Name: Fairfax 26140
Site Location: 9901 Georgetown Pike, Great Falls, VA
Kleinfelder Project No: 121473
Client: Fairfax Petroleum, LLC
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Driller: CB
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Water Level (Initial): ~37'
Water Level (Static): 40.69'
Logged By (Geol.): C. Low

Permit No.: NA
License No.: NA
Checked By: PW
Notes: Air knife to 5' bgs

SUBSURFACE PROFILE			SAMPLE				Well Completion Details	
Depth (feet)	Graphic Log	USCS Code Soil/Geologic Description	Sample ID	Blows/6"	Penetration / Recovery	VOC (ppm) 0 – 2000		Depth (feet)
41			MW-18D (40-40.5)			0.0		41
42								42
43								43
44								44
45								45
46								46
47								47
48							Grout	48
49						0.0		49
50								50
51		***SM*** Light brown, moist, silty fine SAND						51
52								52
53								53
54								54
55								55
56								56
57								57
58								58
59						0.0	6" Steel Riser	59
60								60
61								61
62								62
63								63
64								64
65								65
66								66
67								67
68								68
69						0.0		69
70								70
71								71
72								72
73								73
74								74
75								75
76								76
77								77
78								78
79						0.0		79
80								80

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DRILLING LOG
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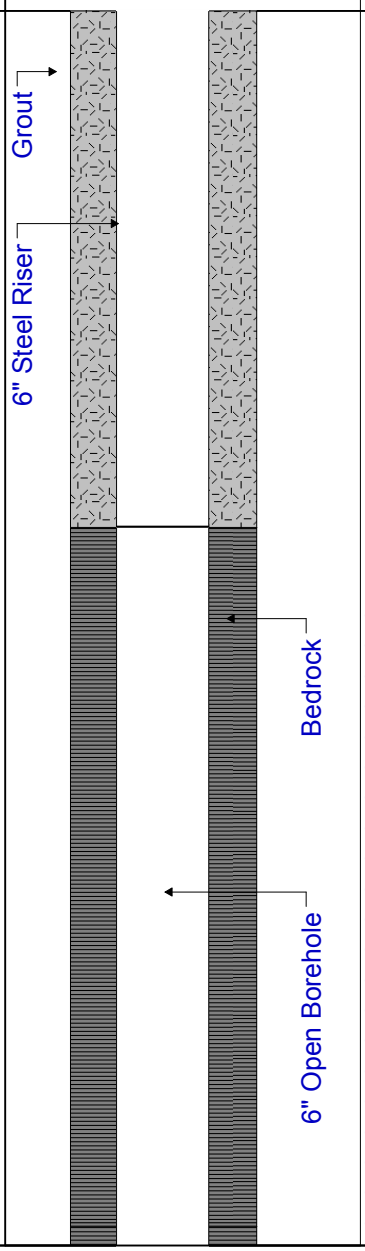
Top-Of-Casing Elevation: 334.88
Water Level (Initial): ~37'
Water Level (Static): 40.69'
Logged By (Geol.): C. Low

Permit No.: NA
License No.: NA
Checked By: PW
Notes: Air knife to 5' bgs

SUBSURFACE PROFILE			SAMPLE					
Depth (feet)	Graphic Log	USCS Code Soil/Geologic Description	Sample ID	Blows/6"	Penetration / Recovery	VOC (ppm) 0 2000	Well Completion Details	Depth (feet)
81								81
82								82
83								83
84								84
85								85
86								86
87								87
88								88
89						0.0		89
90								90
91								91
92		***BK*** Gray, SCHIST, competant rock encountered at 92" bgs						92
93								93
94								94
95								95
96								96
97								97
98		Water bearing zone @ 98-100' bgs						98
99						0.0		99
100								100
101								101
102								102
103								103
104								104
105								105
106								106
107		Water bearing zone @ 108-110' bgs						107
108								108
109						0.0		109
110		***BK*** Gray, wet, SCHIST with fine quartz fragments						110
111								111
112								112
113								113
114		Potential fractures @ 112-114' bgs and at 115'						114
115								115
116								116
117								117
118		Potential fracture @ 118-120' bgs						118
119						0.0		119
120								120



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Start Date: 04/08/2013
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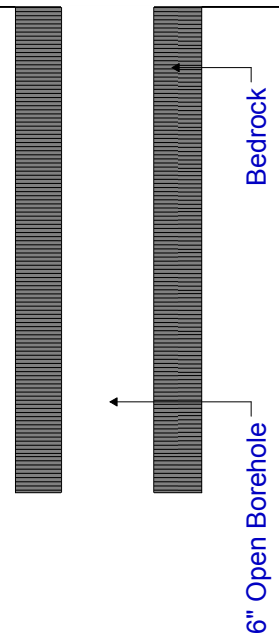
Total Hole Depth: 136'
Hole Diameter: 10"/6"
Depth to Bedrock: ~92'
Top-Of-Casing Elevation: 334.88
Water Level (Initial): ~37'
Water Level (Static): 40.69'
Logged By (Geol.): C. Low

Permit No.: NA
License No.: NA
Checked By: PW
Notes: Air knife to 5' bgs

SUBSURFACE PROFILE			SAMPLE				Well Completion Details	
Depth (feet)	Graphic Log	USCS Code Soil/Geologic Description	Sample ID	Blows/6"	Penetration / Recovery	VOC (ppm) 0 2000		Depth (feet)
121		***BK***				0.0		121
122								122
123								123
124								124
125								125
126								126
127								127
128								128
129						0.0		129
130								130
131								131
132								132
133		Potential fracture @ 134.5-135' bgs						133
134						0.0		134
135								135
136		End of boring						136
137								137
138								138
139								139
140								140
141								141
142								142
143								143
144								144
145								145
146								146
147								147
148								148
149								149
150								150
151								151
152								152
153								153
154								154
155								155
156								156
157								157
158								158
159								159
160								160



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USCS - Unified Soil Classification System
WOR - weight of rod
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ppm - parts per million

Appendix C
Laboratory Analytical Report – Soil

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Kleinfelder
1 Speen Street
Framingham MA 01701

September 10, 2012

Project: Fairfax 26140

Submittal Date: 08/31/2012
Group Number: 1332614
PO Number: 51141-229130
State of Sample Origin: VA

Client Sample Description	Lancaster Labs (LLI) #
S-1(10) Grab Soil	6774285
S-2(10) Grab Soil	6774286
S-3(9) Grab Soil	6774287
T-1(16) Grab Soil	6774288
T-2(16) Grab Soil	6774289
T-3(16) Grab Soil	6774290
T-4(16) Grab Soil	6774291
T-5(16) Grab Soil	6774292
T-6(16) Grab Soil	6774293
T-7(16) Grab Soil	6774294
T-8(16) Grab Soil	6774295
T-9(16) Grab Soil	6774296
P-1(5) Grab Soil	6774297
S-4(10) Grab Soil	6774298
P-2(4.5) Grab Soil	6774299
D-1(4.5) Grab Soil	6774300
D-2(4) Grab Soil	6774301
D-3(4) Grab Soil	6774302
D-4(4.5) Grab Soil	6774303

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Kleinfelder	Attn: Mark Steele
ELECTRONIC	Kleinfelder	Attn: Angela Vogt

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

COPY TO		
ELECTRONIC	Kleinfelder	Attn: Candace Pittmon
COPY TO		
ELECTRONIC	Kleinfelder	Attn: Brian Barone
COPY TO		

Respectfully Submitted,

Natalie R. Luciano
Specialist

(717) 556-7258

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-1(10) Grab Soil
Fairfax 26140

LLI Sample # SW 6774285
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 06:55 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

S-110

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	Acetone	67-64-1	< 0.023	0.023	1
10237	Acrolein	107-02-8	< 0.11	0.11	1
10237	Acrylonitrile	107-13-1	< 0.023	0.023	1
10237	t-Amyl methyl ether	994-05-8	< 0.006	0.006	1
10237	Benzene	71-43-2	< 0.006	0.006	1
10237	Bromodichloromethane	75-27-4	< 0.006	0.006	1
10237	Bromoform	75-25-2	< 0.006	0.006	1
10237	Bromomethane	74-83-9	< 0.006	0.006	1
10237	2-Butanone	78-93-3	< 0.011	0.011	1
10237	t-Butyl alcohol	75-65-0	< 0.11	0.11	1
10237	n-Butylbenzene	104-51-8	< 0.006	0.006	1
10237	sec-Butylbenzene	135-98-8	< 0.006	0.006	1
10237	Carbon Tetrachloride	56-23-5	< 0.006	0.006	1
10237	Chlorobenzene	108-90-7	< 0.006	0.006	1
10237	Chloroethane	75-00-3	< 0.006	0.006	1
10237	Chloroform	67-66-3	< 0.006	0.006	1
10237	Chloromethane	74-87-3	< 0.006	0.006	1
10237	Dibromochloromethane	124-48-1	< 0.006	0.006	1
10237	1,2-Dichlorobenzene	95-50-1	< 0.006	0.006	1
10237	1,3-Dichlorobenzene	541-73-1	< 0.006	0.006	1
10237	1,4-Dichlorobenzene	106-46-7	< 0.006	0.006	1
10237	1,1-Dichloroethane	75-34-3	< 0.006	0.006	1
10237	1,2-Dichloroethane	107-06-2	< 0.006	0.006	1
10237	1,1-Dichloroethene	75-35-4	< 0.006	0.006	1
10237	cis-1,2-Dichloroethene	156-59-2	< 0.006	0.006	1
10237	trans-1,2-Dichloroethene	156-60-5	< 0.006	0.006	1
10237	1,2-Dichloropropane	78-87-5	< 0.006	0.006	1
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.006	0.006	1
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.006	0.006	1
10237	Ethyl t-butyl ether	637-92-3	< 0.006	0.006	1
10237	Ethylbenzene	100-41-4	< 0.006	0.006	1
10237	di-Isopropyl ether	108-20-3	< 0.006	0.006	1
10237	Isopropylbenzene	98-82-8	< 0.006	0.006	1
10237	p-Isopropyltoluene	99-87-6	< 0.006	0.006	1
10237	Methyl Tertiary Butyl Ether	1634-04-4	< 0.006	0.006	1
10237	Methylene Chloride	75-09-2	< 0.006	0.006	1
10237	Naphthalene	91-20-3	< 0.006	0.006	1
10237	n-Propylbenzene	103-65-1	< 0.006	0.006	1
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.006	0.006	1
10237	Tetrachloroethene	127-18-4	< 0.006	0.006	1
10237	Toluene	108-88-3	< 0.006	0.006	1
10237	1,1,1-Trichloroethane	71-55-6	< 0.006	0.006	1
10237	1,1,2-Trichloroethane	79-00-5	< 0.006	0.006	1
10237	Trichloroethene	79-01-6	< 0.006	0.006	1
10237	Trichlorofluoromethane	75-69-4	< 0.006	0.006	1
10237	1,2,4-Trimethylbenzene	95-63-6	< 0.006	0.006	1
10237	1,3,5-Trimethylbenzene	108-67-8	< 0.006	0.006	1
10237	Vinyl Chloride	75-01-4	< 0.006	0.006	1
10237	Xylene (Total)	1330-20-7	< 0.006	0.006	1

2-Chlorethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-1(10) Grab Soil
Fairfax 26140

LLI Sample # SW 6774285
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 06:55 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

S-110

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
	in this method.				
GC Volatiles	**SW-846 8015B**		**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	< 1.1	1.1	24.18
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	**Moisture**	n.a.	**12.3**	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/03/2012 22:34	Andrea E Lando	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 06:55	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 06:55	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 06:55	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12243A31B	09/06/2012 12:22	Laura M Krieger	24.18
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 06:55	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003A	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

Sample Description: S-2(10) Grab Soil
Fairfax 26140

LLI Sample # SW 6774286
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 07:00 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

S-210

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	Acetone	67-64-1	< 0.024	0.024	1
10237	Acrolein	107-02-8	< 0.12	0.12	1
10237	Acrylonitrile	107-13-1	< 0.024	0.024	1
10237	t-Amyl methyl ether	994-05-8	< 0.006	0.006	1
10237	Benzene	71-43-2	< 0.006	0.006	1
10237	Bromodichloromethane	75-27-4	< 0.006	0.006	1
10237	Bromoform	75-25-2	< 0.006	0.006	1
10237	Bromomethane	74-83-9	< 0.006	0.006	1
10237	2-Butanone	78-93-3	< 0.012	0.012	1
10237	t-Butyl alcohol	75-65-0	< 0.12	0.12	1
10237	n-Butylbenzene	104-51-8	< 0.006	0.006	1
10237	sec-Butylbenzene	135-98-8	< 0.006	0.006	1
10237	Carbon Tetrachloride	56-23-5	< 0.006	0.006	1
10237	Chlorobenzene	108-90-7	< 0.006	0.006	1
10237	Chloroethane	75-00-3	< 0.006	0.006	1
10237	Chloroform	67-66-3	< 0.006	0.006	1
10237	Chloromethane	74-87-3	< 0.006	0.006	1
10237	Dibromochloromethane	124-48-1	< 0.006	0.006	1
10237	1,2-Dichlorobenzene	95-50-1	< 0.006	0.006	1
10237	1,3-Dichlorobenzene	541-73-1	< 0.006	0.006	1
10237	1,4-Dichlorobenzene	106-46-7	< 0.006	0.006	1
10237	1,1-Dichloroethane	75-34-3	< 0.006	0.006	1
10237	1,2-Dichloroethane	107-06-2	< 0.006	0.006	1
10237	1,1-Dichloroethene	75-35-4	< 0.006	0.006	1
10237	cis-1,2-Dichloroethene	156-59-2	< 0.006	0.006	1
10237	trans-1,2-Dichloroethene	156-60-5	< 0.006	0.006	1
10237	1,2-Dichloropropane	78-87-5	< 0.006	0.006	1
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.006	0.006	1
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.006	0.006	1
10237	Ethyl t-butyl ether	637-92-3	< 0.006	0.006	1
10237	Ethylbenzene	100-41-4	< 0.006	0.006	1
10237	di-Isopropyl ether	108-20-3	< 0.006	0.006	1
10237	Isopropylbenzene	98-82-8	< 0.006	0.006	1
10237	p-Isopropyltoluene	99-87-6	< 0.006	0.006	1
10237	Methyl Tertiary Butyl Ether	1634-04-4	< 0.006	0.006	1
10237	Methylene Chloride	75-09-2	< 0.006	0.006	1
10237	Naphthalene	91-20-3	< 0.006	0.006	1
10237	n-Propylbenzene	103-65-1	< 0.006	0.006	1
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.006	0.006	1
10237	Tetrachloroethene	127-18-4	< 0.006	0.006	1
10237	Toluene	108-88-3	< 0.006	0.006	1
10237	1,1,1-Trichloroethane	71-55-6	< 0.006	0.006	1
10237	1,1,2-Trichloroethane	79-00-5	< 0.006	0.006	1
10237	Trichloroethene	79-01-6	< 0.006	0.006	1
10237	Trichlorofluoromethane	75-69-4	< 0.006	0.006	1
10237	1,2,4-Trimethylbenzene	95-63-6	< 0.006	0.006	1
10237	1,3,5-Trimethylbenzene	108-67-8	< 0.006	0.006	1
10237	Vinyl Chloride	75-01-4	< 0.006	0.006	1
10237	Xylene (Total)	1330-20-7	< 0.006	0.006	1

2-Chlorethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards

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Analysis Report

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Sample Description: S-2(10) Grab Soil
Fairfax 26140

LLI Sample # SW 6774286
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 07:00 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

S-210

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
	in this method.				
GC Volatiles	**SW-846 8015B**		**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	< 1.2	1.2	25
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	**Moisture**	n.a.	**16.8**	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/03/2012 22:57	Andrea E Lando	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 07:00	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 07:00	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 07:00	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12243A31B	09/06/2012 12:58	Laura M Krieger	25
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 07:00	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003A	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-3(9) Grab Soil
Fairfax 26140

LLI Sample # SW 6774287
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 07:20 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

S-309

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	**Acetone**	67-64-1	**0.14**	0.028	1.03
10237	Acrolein	107-02-8	< 0.14	0.14	1.03
10237	Acrylonitrile	107-13-1	< 0.028	0.028	1.03
10237	t-Amyl methyl ether	994-05-8	< 0.007	0.007	1.03
10237	Benzene	71-43-2	< 0.007	0.007	1.03
10237	Bromodichloromethane	75-27-4	< 0.007	0.007	1.03
10237	Bromoform	75-25-2	< 0.007	0.007	1.03
10237	Bromomethane	74-83-9	< 0.007	0.007	1.03
10237	2-Butanone	78-93-3	< 0.014	0.014	1.03
10237	t-Butyl alcohol	75-65-0	< 0.14	0.14	1.03
10237	n-Butylbenzene	104-51-8	< 0.007	0.007	1.03
10237	sec-Butylbenzene	135-98-8	< 0.007	0.007	1.03
10237	Carbon Tetrachloride	56-23-5	< 0.007	0.007	1.03
10237	Chlorobenzene	108-90-7	< 0.007	0.007	1.03
10237	Chloroethane	75-00-3	< 0.007	0.007	1.03
10237	Chloroform	67-66-3	< 0.007	0.007	1.03
10237	Chloromethane	74-87-3	< 0.007	0.007	1.03
10237	Dibromochloromethane	124-48-1	< 0.007	0.007	1.03
10237	1,2-Dichlorobenzene	95-50-1	< 0.007	0.007	1.03
10237	1,3-Dichlorobenzene	541-73-1	< 0.007	0.007	1.03
10237	1,4-Dichlorobenzene	106-46-7	< 0.007	0.007	1.03
10237	1,1-Dichloroethane	75-34-3	< 0.007	0.007	1.03
10237	1,2-Dichloroethane	107-06-2	< 0.007	0.007	1.03
10237	1,1-Dichloroethene	75-35-4	< 0.007	0.007	1.03
10237	cis-1,2-Dichloroethene	156-59-2	< 0.007	0.007	1.03
10237	trans-1,2-Dichloroethene	156-60-5	< 0.007	0.007	1.03
10237	1,2-Dichloropropane	78-87-5	< 0.007	0.007	1.03
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.007	0.007	1.03
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.007	0.007	1.03
10237	Ethyl t-butyl ether	637-92-3	< 0.007	0.007	1.03
10237	Ethylbenzene	100-41-4	< 0.007	0.007	1.03
10237	di-Isopropyl ether	108-20-3	< 0.007	0.007	1.03
10237	Isopropylbenzene	98-82-8	< 0.007	0.007	1.03
10237	p-Isopropyltoluene	99-87-6	< 0.007	0.007	1.03
10237	**Methyl Tertiary Butyl Ether**	1634-04-4	**0.012**	0.007	1.03
10237	Methylene Chloride	75-09-2	< 0.007	0.007	1.03
10237	Naphthalene	91-20-3	< 0.007	0.007	1.03
10237	n-Propylbenzene	103-65-1	< 0.007	0.007	1.03
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.007	0.007	1.03
10237	Tetrachloroethene	127-18-4	< 0.007	0.007	1.03
10237	Toluene	108-88-3	< 0.007	0.007	1.03
10237	1,1,1-Trichloroethane	71-55-6	< 0.007	0.007	1.03
10237	1,1,2-Trichloroethane	79-00-5	< 0.007	0.007	1.03
10237	Trichloroethene	79-01-6	< 0.007	0.007	1.03
10237	Trichlorofluoromethane	75-69-4	< 0.007	0.007	1.03
10237	1,2,4-Trimethylbenzene	95-63-6	< 0.007	0.007	1.03
10237	1,3,5-Trimethylbenzene	108-67-8	< 0.007	0.007	1.03
10237	Vinyl Chloride	75-01-4	< 0.007	0.007	1.03
10237	Xylene (Total)	1330-20-7	< 0.007	0.007	1.03

2-Chlorethyl vinyl ether is an acid labile compound and cannot

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Analysis Report

Sample Description: S-3(9) Grab Soil
Fairfax 26140

LLI Sample # SW 6774287
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 07:20 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

S-309

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
	be reported due to acid preservation of the samples and standards in this method.				
GC Volatiles		**SW-846 8015B**	**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	< 1.3	1.3	23.72
Wet Chemistry		**SM20 2540 G**	**%**	**%**	
00111	**Moisture**	n.a.	**25.6**	0.50	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.				

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/03/2012 23:20	Andrea E Lando	1.03
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 07:20	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 07:20	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 07:20	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12243A31B	09/06/2012 13:35	Laura M Krieger	23.72
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 07:20	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003A	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: T-1(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774288
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 07:50 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-116

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	**Acetone**	67-64-1	**0.029**	0.023	1
10237	Acrolein	107-02-8	< 0.12	0.12	1
10237	Acrylonitrile	107-13-1	< 0.023	0.023	1
10237	t-Amyl methyl ether	994-05-8	< 0.006	0.006	1
10237	**Benzene**	71-43-2	**0.018**	0.006	1
10237	Bromodichloromethane	75-27-4	< 0.006	0.006	1
10237	Bromoform	75-25-2	< 0.006	0.006	1
10237	Bromomethane	74-83-9	< 0.006	0.006	1
10237	2-Butanone	78-93-3	< 0.012	0.012	1
10237	t-Butyl alcohol	75-65-0	< 0.12	0.12	1
10237	n-Butylbenzene	104-51-8	< 0.006	0.006	1
10237	sec-Butylbenzene	135-98-8	< 0.006	0.006	1
10237	Carbon Tetrachloride	56-23-5	< 0.006	0.006	1
10237	Chlorobenzene	108-90-7	< 0.006	0.006	1
10237	Chloroethane	75-00-3	< 0.006	0.006	1
10237	Chloroform	67-66-3	< 0.006	0.006	1
10237	Chloromethane	74-87-3	< 0.006	0.006	1
10237	Dibromochloromethane	124-48-1	< 0.006	0.006	1
10237	1,2-Dichlorobenzene	95-50-1	< 0.006	0.006	1
10237	1,3-Dichlorobenzene	541-73-1	< 0.006	0.006	1
10237	1,4-Dichlorobenzene	106-46-7	< 0.006	0.006	1
10237	1,1-Dichloroethane	75-34-3	< 0.006	0.006	1
10237	1,2-Dichloroethane	107-06-2	< 0.006	0.006	1
10237	1,1-Dichloroethene	75-35-4	< 0.006	0.006	1
10237	cis-1,2-Dichloroethene	156-59-2	< 0.006	0.006	1
10237	trans-1,2-Dichloroethene	156-60-5	< 0.006	0.006	1
10237	1,2-Dichloropropane	78-87-5	< 0.006	0.006	1
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.006	0.006	1
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.006	0.006	1
10237	Ethyl t-butyl ether	637-92-3	< 0.006	0.006	1
10237	**Ethylbenzene**	100-41-4	**0.019**	0.006	1
10237	di-Isopropyl ether	108-20-3	< 0.006	0.006	1
10237	Isopropylbenzene	98-82-8	< 0.006	0.006	1
10237	p-Isopropyltoluene	99-87-6	< 0.006	0.006	1
10237	**Methyl Tertiary Butyl Ether**	1634-04-4	**0.009**	0.006	1
10237	Methylene Chloride	75-09-2	< 0.006	0.006	1
10237	Naphthalene	91-20-3	< 0.006	0.006	1
10237	n-Propylbenzene	103-65-1	< 0.006	0.006	1
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.006	0.006	1
10237	Tetrachloroethene	127-18-4	< 0.006	0.006	1
10237	**Toluene**	108-88-3	**0.22**	0.006	1
10237	1,1,1-Trichloroethane	71-55-6	< 0.006	0.006	1
10237	1,1,2-Trichloroethane	79-00-5	< 0.006	0.006	1
10237	Trichloroethene	79-01-6	< 0.006	0.006	1
10237	Trichlorofluoromethane	75-69-4	< 0.006	0.006	1
10237	**1,2,4-Trimethylbenzene**	95-63-6	**0.011**	0.006	1
10237	**1,3,5-Trimethylbenzene**	108-67-8	**0.008**	0.006	1
10237	Vinyl Chloride	75-01-4	< 0.006	0.006	1
10237	**Xylene (Total)**	1330-20-7	**0.13**	0.006	1

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Analysis Report

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Sample Description: T-1(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774288
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 07:50 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-116

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
	2-Chlorethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards in this method.				
GC Volatiles	**SW-846 8015B**		**mg/kg**	**mg/kg**	
01637	**TPH-GRO soil C6-C10**	n.a.	**2.7**	1	21.22
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	**Moisture**	n.a.	**14.0**	0.50	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.				

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/04/2012 05:05	Andrea E Lando	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 07:50	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 07:50	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 07:50	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12243A31B	09/06/2012 14:11	Laura M Krieger	21.22
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 07:50	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003A	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: T-2(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774289
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 08:00 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-216

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	**Acetone**	67-64-1	**0.19**	0.030	1.06
10237	Acrolein	107-02-8	< 0.15	0.15	1.06
10237	Acrylonitrile	107-13-1	< 0.030	0.030	1.06
10237	t-Amyl methyl ether	994-05-8	< 0.007	0.007	1.06
10237	Benzene	71-43-2	< 0.007	0.007	1.06
10237	Bromodichloromethane	75-27-4	< 0.007	0.007	1.06
10237	Bromoform	75-25-2	< 0.007	0.007	1.06
10237	Bromomethane	74-83-9	< 0.007	0.007	1.06
10237	2-Butanone	78-93-3	< 0.015	0.015	1.06
10237	**t-Butyl alcohol**	75-65-0	**0.25**	0.15	1.06
10237	n-Butylbenzene	104-51-8	< 0.007	0.007	1.06
10237	sec-Butylbenzene	135-98-8	< 0.007	0.007	1.06
10237	Carbon Tetrachloride	56-23-5	< 0.007	0.007	1.06
10237	Chlorobenzene	108-90-7	< 0.007	0.007	1.06
10237	Chloroethane	75-00-3	< 0.007	0.007	1.06
10237	Chloroform	67-66-3	< 0.007	0.007	1.06
10237	Chloromethane	74-87-3	< 0.007	0.007	1.06
10237	Dibromochloromethane	124-48-1	< 0.007	0.007	1.06
10237	1,2-Dichlorobenzene	95-50-1	< 0.007	0.007	1.06
10237	1,3-Dichlorobenzene	541-73-1	< 0.007	0.007	1.06
10237	1,4-Dichlorobenzene	106-46-7	< 0.007	0.007	1.06
10237	1,1-Dichloroethane	75-34-3	< 0.007	0.007	1.06
10237	1,2-Dichloroethane	107-06-2	< 0.007	0.007	1.06
10237	1,1-Dichloroethene	75-35-4	< 0.007	0.007	1.06
10237	cis-1,2-Dichloroethene	156-59-2	< 0.007	0.007	1.06
10237	trans-1,2-Dichloroethene	156-60-5	< 0.007	0.007	1.06
10237	1,2-Dichloropropane	78-87-5	< 0.007	0.007	1.06
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.007	0.007	1.06
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.007	0.007	1.06
10237	Ethyl t-butyl ether	637-92-3	< 0.007	0.007	1.06
10237	Ethylbenzene	100-41-4	< 0.007	0.007	1.06
10237	**di-Isopropyl ether**	108-20-3	**0.008**	0.007	1.06
10237	Isopropylbenzene	98-82-8	< 0.007	0.007	1.06
10237	p-Isopropyltoluene	99-87-6	< 0.007	0.007	1.06
10237	**Methyl Tertiary Butyl Ether**	1634-04-4	**0.030**	0.007	1.06
10237	Methylene Chloride	75-09-2	< 0.007	0.007	1.06
10237	Naphthalene	91-20-3	< 0.007	0.007	1.06
10237	n-Propylbenzene	103-65-1	< 0.007	0.007	1.06
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.007	0.007	1.06
10237	Tetrachloroethene	127-18-4	< 0.007	0.007	1.06
10237	**Toluene**	108-88-3	**0.059**	0.007	1.06
10237	1,1,1-Trichloroethane	71-55-6	< 0.007	0.007	1.06
10237	1,1,2-Trichloroethane	79-00-5	< 0.007	0.007	1.06
10237	Trichloroethene	79-01-6	< 0.007	0.007	1.06
10237	Trichlorofluoromethane	75-69-4	< 0.007	0.007	1.06
10237	**1,2,4-Trimethylbenzene**	95-63-6	**0.012**	0.007	1.06
10237	**1,3,5-Trimethylbenzene**	108-67-8	**0.007**	0.007	1.06
10237	Vinyl Chloride	75-01-4	< 0.007	0.007	1.06
10237	**Xylene (Total)**	1330-20-7	**0.074**	0.007	1.06

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: T-2(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774289
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 08:00 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-216

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
	2-Chlorethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards in this method.				
GC Volatiles		**SW-846 8015B**	**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	< 1.5	1.5	26.26
Wet Chemistry		**SM20 2540 G**	**%**	**%**	
00111	**Moisture**	n.a.	**29.2**	0.50	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.				

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/04/2012 03:56	Andrea E Lando	1.06
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 08:00	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 08:00	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 08:00	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12243A31B	09/06/2012 14:47	Laura M Krieger	26.26
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 08:00	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003A	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: T-3(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774290
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 08:15 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-316

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	Acetone	67-64-1	< 0.023	0.023	0.99
10237	Acrolein	107-02-8	< 0.11	0.11	0.99
10237	Acrylonitrile	107-13-1	< 0.023	0.023	0.99
10237	t-Amyl methyl ether	994-05-8	< 0.006	0.006	0.99
10237	Benzene	71-43-2	< 0.006	0.006	0.99
10237	Bromodichloromethane	75-27-4	< 0.006	0.006	0.99
10237	Bromoform	75-25-2	< 0.006	0.006	0.99
10237	Bromomethane	74-83-9	< 0.006	0.006	0.99
10237	2-Butanone	78-93-3	< 0.011	0.011	0.99
10237	**t-Butyl alcohol**	75-65-0	**0.72**	0.11	0.99
10237	n-Butylbenzene	104-51-8	< 0.006	0.006	0.99
10237	sec-Butylbenzene	135-98-8	< 0.006	0.006	0.99
10237	Carbon Tetrachloride	56-23-5	< 0.006	0.006	0.99
10237	Chlorobenzene	108-90-7	< 0.006	0.006	0.99
10237	Chloroethane	75-00-3	< 0.006	0.006	0.99
10237	Chloroform	67-66-3	< 0.006	0.006	0.99
10237	Chloromethane	74-87-3	< 0.006	0.006	0.99
10237	Dibromochloromethane	124-48-1	< 0.006	0.006	0.99
10237	1,2-Dichlorobenzene	95-50-1	< 0.006	0.006	0.99
10237	1,3-Dichlorobenzene	541-73-1	< 0.006	0.006	0.99
10237	1,4-Dichlorobenzene	106-46-7	< 0.006	0.006	0.99
10237	1,1-Dichloroethane	75-34-3	< 0.006	0.006	0.99
10237	1,2-Dichloroethane	107-06-2	< 0.006	0.006	0.99
10237	1,1-Dichloroethene	75-35-4	< 0.006	0.006	0.99
10237	cis-1,2-Dichloroethene	156-59-2	< 0.006	0.006	0.99
10237	trans-1,2-Dichloroethene	156-60-5	< 0.006	0.006	0.99
10237	1,2-Dichloropropane	78-87-5	< 0.006	0.006	0.99
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.006	0.006	0.99
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.006	0.006	0.99
10237	Ethyl t-butyl ether	637-92-3	< 0.006	0.006	0.99
10237	Ethylbenzene	100-41-4	< 0.006	0.006	0.99
10237	di-Isopropyl ether	108-20-3	< 0.006	0.006	0.99
10237	Isopropylbenzene	98-82-8	< 0.006	0.006	0.99
10237	p-Isopropyltoluene	99-87-6	< 0.006	0.006	0.99
10237	**Methyl Tertiary Butyl Ether**	1634-04-4	**0.028**	0.006	0.99
10237	Methylene Chloride	75-09-2	< 0.006	0.006	0.99
10237	Naphthalene	91-20-3	< 0.006	0.006	0.99
10237	n-Propylbenzene	103-65-1	< 0.006	0.006	0.99
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.006	0.006	0.99
10237	Tetrachloroethene	127-18-4	< 0.006	0.006	0.99
10237	Toluene	108-88-3	< 0.006	0.006	0.99
10237	1,1,1-Trichloroethane	71-55-6	< 0.006	0.006	0.99
10237	1,1,2-Trichloroethane	79-00-5	< 0.006	0.006	0.99
10237	Trichloroethene	79-01-6	< 0.006	0.006	0.99
10237	Trichlorofluoromethane	75-69-4	< 0.006	0.006	0.99
10237	1,2,4-Trimethylbenzene	95-63-6	< 0.006	0.006	0.99
10237	1,3,5-Trimethylbenzene	108-67-8	< 0.006	0.006	0.99
10237	Vinyl Chloride	75-01-4	< 0.006	0.006	0.99
10237	Xylene (Total)	1330-20-7	< 0.006	0.006	0.99

2-Chlorethyl vinyl ether is an acid labile compound and cannot

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: T-3(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774290
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 08:15 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-316

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
	be reported due to acid preservation of the samples and standards in this method.				
GC Volatiles		**SW-846 8015B**	**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	< 1.3	1.3	27.78
Wet Chemistry		**SM20 2540 G**	**%**	**%**	
00111	**Moisture**	n.a.	**13.7**	0.50	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.				

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/04/2012 04:19	Andrea E Lando	0.99
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 08:15	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 08:15	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 08:15	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12250A34A	09/07/2012 15:28	Laura M Krieger	27.78
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 08:15	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003A	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: T-4(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774291
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 09:40 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-416

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	**Acetone**	67-64-1	**0.32**	0.024	0.9
10237	Acrolein	107-02-8	< 0.12	0.12	0.9
10237	Acrylonitrile	107-13-1	< 0.024	0.024	0.9
10237	**t-Amyl methyl ether**	994-05-8	**0.011**	0.006	0.9
10237	**Benzene**	71-43-2	**0.013**	0.006	0.9
10237	Bromodichloromethane	75-27-4	< 0.006	0.006	0.9
10237	Bromoform	75-25-2	< 0.006	0.006	0.9
10237	Bromomethane	74-83-9	< 0.006	0.006	0.9
10237	**2-Butanone**	78-93-3	**0.022**	0.012	0.9
10237	**t-Butyl alcohol**	75-65-0	**1.4**	0.12	0.9
10237	n-Butylbenzene	104-51-8	< 0.006	0.006	0.9
10237	sec-Butylbenzene	135-98-8	< 0.006	0.006	0.9
10237	Carbon Tetrachloride	56-23-5	< 0.006	0.006	0.9
10237	Chlorobenzene	108-90-7	< 0.006	0.006	0.9
10237	Chloroethane	75-00-3	< 0.006	0.006	0.9
10237	Chloroform	67-66-3	< 0.006	0.006	0.9
10237	Chloromethane	74-87-3	< 0.006	0.006	0.9
10237	Dibromochloromethane	124-48-1	< 0.006	0.006	0.9
10237	1,2-Dichlorobenzene	95-50-1	< 0.006	0.006	0.9
10237	1,3-Dichlorobenzene	541-73-1	< 0.006	0.006	0.9
10237	1,4-Dichlorobenzene	106-46-7	< 0.006	0.006	0.9
10237	1,1-Dichloroethane	75-34-3	< 0.006	0.006	0.9
10237	1,2-Dichloroethane	107-06-2	< 0.006	0.006	0.9
10237	1,1-Dichloroethene	75-35-4	< 0.006	0.006	0.9
10237	cis-1,2-Dichloroethene	156-59-2	< 0.006	0.006	0.9
10237	trans-1,2-Dichloroethene	156-60-5	< 0.006	0.006	0.9
10237	1,2-Dichloropropane	78-87-5	< 0.006	0.006	0.9
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.006	0.006	0.9
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.006	0.006	0.9
10237	Ethyl t-butyl ether	637-92-3	< 0.006	0.006	0.9
10237	Ethylbenzene	100-41-4	< 0.006	0.006	0.9
10237	di-Isopropyl ether	108-20-3	< 0.006	0.006	0.9
10237	Isopropylbenzene	98-82-8	< 0.006	0.006	0.9
10237	p-Isopropyltoluene	99-87-6	< 0.006	0.006	0.9
10237	**Methyl Tertiary Butyl Ether**	1634-04-4	**0.056**	0.006	0.9
10237	Methylene Chloride	75-09-2	< 0.006	0.006	0.9
10237	Naphthalene	91-20-3	< 0.006	0.006	0.9
10237	n-Propylbenzene	103-65-1	< 0.006	0.006	0.9
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.006	0.006	0.9
10237	Tetrachloroethene	127-18-4	< 0.006	0.006	0.9
10237	**Toluene**	108-88-3	**0.034**	0.006	0.9
10237	1,1,1-Trichloroethane	71-55-6	< 0.006	0.006	0.9
10237	1,1,2-Trichloroethane	79-00-5	< 0.006	0.006	0.9
10237	Trichloroethene	79-01-6	< 0.006	0.006	0.9
10237	Trichlorofluoromethane	75-69-4	< 0.006	0.006	0.9
10237	**1,2,4-Trimethylbenzene**	95-63-6	**0.019**	0.006	0.9
10237	**1,3,5-Trimethylbenzene**	108-67-8	**0.015**	0.006	0.9
10237	Vinyl Chloride	75-01-4	< 0.006	0.006	0.9

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: T-4(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774291
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 09:40 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-416

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	**Xylene (Total)**	1330-20-7	**0.16**	0.006	0.9
	2-Chlorethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards in this method.				
GC Volatiles	**SW-846 8015B**		**mg/kg**	**mg/kg**	
01637	**TPH-GRO soil C6-C10**	n.a.	**2.2**	1.2	22.81
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	**Moisture**	n.a.	**26.7**	0.50	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.				

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/04/2012 04:42	Andrea E Lando	0.9
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 09:40	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 09:40	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 09:40	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12250A34A	09/07/2012 16:04	Laura M Krieger	22.81
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 09:40	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003A	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: T-5(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774292
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 10:10 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-516

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	**Acetone**	67-64-1	**0.091**	0.024	1.01
10237	Acrolein	107-02-8	< 0.12	0.12	1.01
10237	Acrylonitrile	107-13-1	< 0.024	0.024	1.01
10237	t-Amyl methyl ether	994-05-8	< 0.006	0.006	1.01
10237	Benzene	71-43-2	< 0.006	0.006	1.01
10237	Bromodichloromethane	75-27-4	< 0.006	0.006	1.01
10237	Bromoform	75-25-2	< 0.006	0.006	1.01
10237	Bromomethane	74-83-9	< 0.006	0.006	1.01
10237	2-Butanone	78-93-3	< 0.012	0.012	1.01
10237	**t-Butyl alcohol**	75-65-0	**0.63**	0.12	1.01
10237	n-Butylbenzene	104-51-8	< 0.006	0.006	1.01
10237	sec-Butylbenzene	135-98-8	< 0.006	0.006	1.01
10237	Carbon Tetrachloride	56-23-5	< 0.006	0.006	1.01
10237	Chlorobenzene	108-90-7	< 0.006	0.006	1.01
10237	Chloroethane	75-00-3	< 0.006	0.006	1.01
10237	Chloroform	67-66-3	< 0.006	0.006	1.01
10237	Chloromethane	74-87-3	< 0.006	0.006	1.01
10237	Dibromochloromethane	124-48-1	< 0.006	0.006	1.01
10237	1,2-Dichlorobenzene	95-50-1	< 0.006	0.006	1.01
10237	1,3-Dichlorobenzene	541-73-1	< 0.006	0.006	1.01
10237	1,4-Dichlorobenzene	106-46-7	< 0.006	0.006	1.01
10237	1,1-Dichloroethane	75-34-3	< 0.006	0.006	1.01
10237	1,2-Dichloroethane	107-06-2	< 0.006	0.006	1.01
10237	1,1-Dichloroethene	75-35-4	< 0.006	0.006	1.01
10237	cis-1,2-Dichloroethene	156-59-2	< 0.006	0.006	1.01
10237	trans-1,2-Dichloroethene	156-60-5	< 0.006	0.006	1.01
10237	1,2-Dichloropropane	78-87-5	< 0.006	0.006	1.01
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.006	0.006	1.01
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.006	0.006	1.01
10237	Ethyl t-butyl ether	637-92-3	< 0.006	0.006	1.01
10237	Ethylbenzene	100-41-4	< 0.006	0.006	1.01
10237	di-Isopropyl ether	108-20-3	< 0.006	0.006	1.01
10237	Isopropylbenzene	98-82-8	< 0.006	0.006	1.01
10237	p-Isopropyltoluene	99-87-6	< 0.006	0.006	1.01
10237	**Methyl Tertiary Butyl Ether**	1634-04-4	**0.013**	0.006	1.01
10237	Methylene Chloride	75-09-2	< 0.006	0.006	1.01
10237	Naphthalene	91-20-3	< 0.006	0.006	1.01
10237	n-Propylbenzene	103-65-1	< 0.006	0.006	1.01
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.006	0.006	1.01
10237	Tetrachloroethene	127-18-4	< 0.006	0.006	1.01
10237	**Toluene**	108-88-3	**0.008**	0.006	1.01
10237	1,1,1-Trichloroethane	71-55-6	< 0.006	0.006	1.01
10237	1,1,2-Trichloroethane	79-00-5	< 0.006	0.006	1.01
10237	Trichloroethene	79-01-6	< 0.006	0.006	1.01
10237	Trichlorofluoromethane	75-69-4	< 0.006	0.006	1.01
10237	1,2,4-Trimethylbenzene	95-63-6	< 0.006	0.006	1.01
10237	1,3,5-Trimethylbenzene	108-67-8	< 0.006	0.006	1.01
10237	Vinyl Chloride	75-01-4	< 0.006	0.006	1.01
10237	**Xylene (Total)**	1330-20-7	**0.025**	0.006	1.01

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: T-5(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774292
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 10:10 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-516

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
	2-Chlorethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards in this method.				
GC Volatiles	**SW-846 8015B**		**mg/kg**	**mg/kg**	
01637	**TPH-GRO soil C6-C10**	n.a.	**7.4**	1.2	24.65
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	**Moisture**	n.a.	**16.5**	0.50	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.				

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/04/2012 05:27	Andrea E Lando	1.01
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 10:10	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 10:10	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 10:10	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12250A34A	09/07/2012 16:40	Laura M Krieger	24.65
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 10:10	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003A	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: T-6(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774293
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 11:05 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-616

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	**Acetone**	67-64-1	**0.14**	0.023	1.02
10237	Acrolein	107-02-8	< 0.12	0.12	1.02
10237	Acrylonitrile	107-13-1	< 0.023	0.023	1.02
10237	t-Amyl methyl ether	994-05-8	< 0.006	0.006	1.02
10237	**Benzene**	71-43-2	**0.016**	0.006	1.02
10237	Bromodichloromethane	75-27-4	< 0.006	0.006	1.02
10237	Bromoform	75-25-2	< 0.006	0.006	1.02
10237	Bromomethane	74-83-9	< 0.006	0.006	1.02
10237	2-Butanone	78-93-3	< 0.012	0.012	1.02
10237	**t-Butyl alcohol**	75-65-0	**0.73**	0.12	1.02
10237	n-Butylbenzene	104-51-8	< 0.006	0.006	1.02
10237	sec-Butylbenzene	135-98-8	< 0.006	0.006	1.02
10237	Carbon Tetrachloride	56-23-5	< 0.006	0.006	1.02
10237	Chlorobenzene	108-90-7	< 0.006	0.006	1.02
10237	Chloroethane	75-00-3	< 0.006	0.006	1.02
10237	Chloroform	67-66-3	< 0.006	0.006	1.02
10237	Chloromethane	74-87-3	< 0.006	0.006	1.02
10237	Dibromochloromethane	124-48-1	< 0.006	0.006	1.02
10237	1,2-Dichlorobenzene	95-50-1	< 0.006	0.006	1.02
10237	1,3-Dichlorobenzene	541-73-1	< 0.006	0.006	1.02
10237	1,4-Dichlorobenzene	106-46-7	< 0.006	0.006	1.02
10237	1,1-Dichloroethane	75-34-3	< 0.006	0.006	1.02
10237	1,2-Dichloroethane	107-06-2	< 0.006	0.006	1.02
10237	1,1-Dichloroethene	75-35-4	< 0.006	0.006	1.02
10237	cis-1,2-Dichloroethene	156-59-2	< 0.006	0.006	1.02
10237	trans-1,2-Dichloroethene	156-60-5	< 0.006	0.006	1.02
10237	1,2-Dichloropropane	78-87-5	< 0.006	0.006	1.02
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.006	0.006	1.02
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.006	0.006	1.02
10237	Ethyl t-butyl ether	637-92-3	< 0.006	0.006	1.02
10237	**Ethylbenzene**	100-41-4	**0.008**	0.006	1.02
10237	di-Isopropyl ether	108-20-3	< 0.006	0.006	1.02
10237	Isopropylbenzene	98-82-8	< 0.006	0.006	1.02
10237	p-Isopropyltoluene	99-87-6	< 0.006	0.006	1.02
10237	**Methyl Tertiary Butyl Ether**	1634-04-4	**0.019**	0.006	1.02
10237	Methylene Chloride	75-09-2	< 0.006	0.006	1.02
10237	Naphthalene	91-20-3	< 0.006	0.006	1.02
10237	n-Propylbenzene	103-65-1	< 0.006	0.006	1.02
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.006	0.006	1.02
10237	Tetrachloroethene	127-18-4	< 0.006	0.006	1.02
10237	**Toluene**	108-88-3	**0.084**	0.006	1.02
10237	1,1,1-Trichloroethane	71-55-6	< 0.006	0.006	1.02
10237	1,1,2-Trichloroethane	79-00-5	< 0.006	0.006	1.02
10237	Trichloroethene	79-01-6	< 0.006	0.006	1.02
10237	Trichlorofluoromethane	75-69-4	< 0.006	0.006	1.02
10237	**1,2,4-Trimethylbenzene**	95-63-6	**0.011**	0.006	1.02
10237	**1,3,5-Trimethylbenzene**	108-67-8	**0.009**	0.006	1.02
10237	Vinyl Chloride	75-01-4	< 0.006	0.006	1.02

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Analysis Report

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Sample Description: T-6(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774293
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 11:05 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-616

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	**Xylene (Total)**	1330-20-7	**0.11**	0.006	1.02
	2-Chlorethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards in this method.				
GC Volatiles	**SW-846 8015B**		**mg/kg**	**mg/kg**	
01637	**TPH-GRO soil C6-C10**	n.a.	**4.5**	1.1	23.63
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	**Moisture**	n.a.	**12.1**	0.50	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.				

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/04/2012 05:51	Andrea E Lando	1.02
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 11:05	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 11:05	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 11:05	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12250A34A	09/07/2012 17:16	Laura M Krieger	23.63
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 11:05	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003A	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: T-7(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774294
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 13:00 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-716

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		mg/kg		mg/kg	
10237	**Acetone**	67-64-1	**0.19**		0.029	1.28
10237	Acrolein	107-02-8	< 0.14		0.14	1.28
10237	Acrylonitrile	107-13-1	< 0.029		0.029	1.28
10237	**t-Amyl methyl ether**	994-05-8	**0.007**		0.007	1.28
10237	**Benzene**	71-43-2	**0.037**		0.007	1.28
10237	Bromodichloromethane	75-27-4	< 0.007		0.007	1.28
10237	Bromoform	75-25-2	< 0.007		0.007	1.28
10237	Bromomethane	74-83-9	< 0.007		0.007	1.28
10237	2-Butanone	78-93-3	< 0.014		0.014	1.28
10237	**t-Butyl alcohol**	75-65-0	**2.6**	**E**	0.14	1.28
10237	n-Butylbenzene	104-51-8	< 0.007		0.007	1.28
10237	sec-Butylbenzene	135-98-8	< 0.007		0.007	1.28
10237	Carbon Tetrachloride	56-23-5	< 0.007		0.007	1.28
10237	Chlorobenzene	108-90-7	< 0.007		0.007	1.28
10237	Chloroethane	75-00-3	< 0.007		0.007	1.28
10237	Chloroform	67-66-3	< 0.007		0.007	1.28
10237	Chloromethane	74-87-3	< 0.007		0.007	1.28
10237	Dibromochloromethane	124-48-1	< 0.007		0.007	1.28
10237	1,2-Dichlorobenzene	95-50-1	< 0.007		0.007	1.28
10237	1,3-Dichlorobenzene	541-73-1	< 0.007		0.007	1.28
10237	1,4-Dichlorobenzene	106-46-7	< 0.007		0.007	1.28
10237	1,1-Dichloroethane	75-34-3	< 0.007		0.007	1.28
10237	1,2-Dichloroethane	107-06-2	< 0.007		0.007	1.28
10237	1,1-Dichloroethene	75-35-4	< 0.007		0.007	1.28
10237	cis-1,2-Dichloroethene	156-59-2	< 0.007		0.007	1.28
10237	trans-1,2-Dichloroethene	156-60-5	< 0.007		0.007	1.28
10237	1,2-Dichloropropane	78-87-5	< 0.007		0.007	1.28
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.007		0.007	1.28
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.007		0.007	1.28
10237	Ethyl t-butyl ether	637-92-3	< 0.007		0.007	1.28
10237	**Ethylbenzene**	100-41-4	**0.014**		0.007	1.28
10237	di-Isopropyl ether	108-20-3	< 0.007		0.007	1.28
10237	Isopropylbenzene	98-82-8	< 0.007		0.007	1.28
10237	p-Isopropyltoluene	99-87-6	< 0.007		0.007	1.28
10237	**Methyl Tertiary Butyl Ether**	1634-04-4	**0.028**		0.007	1.28
10237	Methylene Chloride	75-09-2	< 0.007		0.007	1.28
10237	Naphthalene	91-20-3	< 0.007		0.007	1.28
10237	n-Propylbenzene	103-65-1	< 0.007		0.007	1.28
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.007		0.007	1.28
10237	Tetrachloroethene	127-18-4	< 0.007		0.007	1.28
10237	**Toluene**	108-88-3	**0.040**		0.007	1.28
10237	1,1,1-Trichloroethane	71-55-6	< 0.007		0.007	1.28
10237	1,1,2-Trichloroethane	79-00-5	< 0.007		0.007	1.28
10237	Trichloroethene	79-01-6	< 0.007		0.007	1.28
10237	Trichlorofluoromethane	75-69-4	< 0.007		0.007	1.28
10237	**1,2,4-Trimethylbenzene**	95-63-6	**0.050**		0.007	1.28
10237	**1,3,5-Trimethylbenzene**	108-67-8	**0.032**		0.007	1.28
10237	Vinyl Chloride	75-01-4	< 0.007		0.007	1.28

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Analysis Report

Sample Description: T-7(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774294
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 13:00 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-716

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		mg/kg	mg/kg	
10237	**Xylene (Total)**	1330-20-7	**0.19**	0.007	1.28

2-Chlorethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards in this method.

The concentration reported for t-butyl alcohol is estimated since it exceeds the calibration range of the instrument when determined by the low level method, but is less than the quantitation limit when determined by the high level method. The result reported is from the low level determination.

GC Volatiles	**SW-846 8015B**		mg/kg	mg/kg	
01637	**TPH-GRO soil C6-C10**	n.a.	**21**	4.0	88.34
Wet Chemistry	**SM20 2540 G**		%	%	
00111	**Moisture**	n.a.	**11.8**	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/04/2012 06:14	Andrea E Lando	1.28
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 13:00	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 13:00	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 13:00	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12250A34A	09/07/2012 14:52	Laura M Krieger	88.34
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 13:00	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003A	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: T-8(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774295
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 13:45 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-816

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	Acetone	67-64-1	< 1.1	1.1	51.12
10237	Acrolein	107-02-8	< 5.6	5.6	51.12
10237	Acrylonitrile	107-13-1	< 1.1	1.1	51.12
10237	t-Amyl methyl ether	994-05-8	< 0.28	0.28	51.12
10237	Benzene	71-43-2	< 0.28	0.28	51.12
10237	Bromodichloromethane	75-27-4	< 0.28	0.28	51.12
10237	Bromoform	75-25-2	< 0.28	0.28	51.12
10237	Bromomethane	74-83-9	< 0.28	0.28	51.12
10237	2-Butanone	78-93-3	< 0.56	0.56	51.12
10237	t-Butyl alcohol	75-65-0	< 5.6	5.6	51.12
10237	n-Butylbenzene	104-51-8	< 0.28	0.28	51.12
10237	sec-Butylbenzene	135-98-8	< 0.28	0.28	51.12
10237	Carbon Tetrachloride	56-23-5	< 0.28	0.28	51.12
10237	Chlorobenzene	108-90-7	< 0.28	0.28	51.12
10237	Chloroethane	75-00-3	< 0.28	0.28	51.12
10237	2-Chloroethyl Vinyl Ether	110-75-8	< 0.56	0.56	51.12
10237	Chloroform	67-66-3	< 0.28	0.28	51.12
10237	Chloromethane	74-87-3	< 0.28	0.28	51.12
10237	Dibromochloromethane	124-48-1	< 0.28	0.28	51.12
10237	1,2-Dichlorobenzene	95-50-1	< 0.28	0.28	51.12
10237	1,3-Dichlorobenzene	541-73-1	< 0.28	0.28	51.12
10237	1,4-Dichlorobenzene	106-46-7	< 0.28	0.28	51.12
10237	1,1-Dichloroethane	75-34-3	< 0.28	0.28	51.12
10237	1,2-Dichloroethane	107-06-2	< 0.28	0.28	51.12
10237	1,1-Dichloroethene	75-35-4	< 0.28	0.28	51.12
10237	cis-1,2-Dichloroethene	156-59-2	< 0.28	0.28	51.12
10237	trans-1,2-Dichloroethene	156-60-5	< 0.28	0.28	51.12
10237	1,2-Dichloropropane	78-87-5	< 0.28	0.28	51.12
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.28	0.28	51.12
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.28	0.28	51.12
10237	Ethyl t-butyl ether	637-92-3	< 0.28	0.28	51.12
10237	Ethylbenzene	100-41-4	< 0.28	0.28	51.12
10237	di-Isopropyl ether	108-20-3	< 0.28	0.28	51.12
10237	Isopropylbenzene	98-82-8	< 0.28	0.28	51.12
10237	p-Isopropyltoluene	99-87-6	< 0.28	0.28	51.12
10237	Methyl Tertiary Butyl Ether	1634-04-4	< 0.28	0.28	51.12
10237	Methylene Chloride	75-09-2	< 0.28	0.28	51.12
10237	Naphthalene	91-20-3	< 0.28	0.28	51.12
10237	n-Propylbenzene	103-65-1	< 0.28	0.28	51.12
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.28	0.28	51.12
10237	Tetrachloroethene	127-18-4	< 0.28	0.28	51.12
10237	Toluene	108-88-3	< 0.28	0.28	51.12
10237	1,1,1-Trichloroethane	71-55-6	< 0.28	0.28	51.12
10237	1,1,2-Trichloroethane	79-00-5	< 0.28	0.28	51.12
10237	Trichloroethene	79-01-6	< 0.28	0.28	51.12
10237	Trichlorofluoromethane	75-69-4	< 0.28	0.28	51.12
10237	**1,2,4-Trimethylbenzene**	95-63-6	**0.70**	0.28	51.12
10237	**1,3,5-Trimethylbenzene**	108-67-8	**0.38**	0.28	51.12
10237	Vinyl Chloride	75-01-4	< 0.28	0.28	51.12
10237	**Xylene (Total)**	1330-20-7	**0.51**	0.28	51.12

Reporting limits were raised due to interference from the sample matrix.

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: T-8(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774295
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 13:45 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-816

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B**		mg/kg	mg/kg	
01637	**TPH-GRO soil C6-C10**	n.a.	**34**	7.7	176.06
Wet Chemistry	**SM20 2540 G**		%	%	
00111	**Moisture**	n.a.	**9.1**	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Q122471AA	09/04/2012 00:27	Andrea E Lando	51.12
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 13:45	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 13:45	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 13:45	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12250A34A	09/08/2012 01:02	Laura M Krieger	176.06
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 13:45	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003A	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: T-9(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774296
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 13:50 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-916

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	**Acetone**	67-64-1	**0.047**	0.021	0.91
10237	Acrolein	107-02-8	< 0.11	0.11	0.91
10237	Acrylonitrile	107-13-1	< 0.021	0.021	0.91
10237	t-Amyl methyl ether	994-05-8	< 0.005	0.005	0.91
10237	Benzene	71-43-2	< 0.005	0.005	0.91
10237	Bromodichloromethane	75-27-4	< 0.005	0.005	0.91
10237	Bromoform	75-25-2	< 0.005	0.005	0.91
10237	Bromomethane	74-83-9	< 0.005	0.005	0.91
10237	2-Butanone	78-93-3	< 0.011	0.011	0.91
10237	t-Butyl alcohol	75-65-0	< 0.11	0.11	0.91
10237	n-Butylbenzene	104-51-8	< 0.005	0.005	0.91
10237	sec-Butylbenzene	135-98-8	< 0.005	0.005	0.91
10237	Carbon Tetrachloride	56-23-5	< 0.005	0.005	0.91
10237	Chlorobenzene	108-90-7	< 0.005	0.005	0.91
10237	Chloroethane	75-00-3	< 0.005	0.005	0.91
10237	Chloroform	67-66-3	< 0.005	0.005	0.91
10237	Chloromethane	74-87-3	< 0.005	0.005	0.91
10237	Dibromochloromethane	124-48-1	< 0.005	0.005	0.91
10237	1,2-Dichlorobenzene	95-50-1	< 0.005	0.005	0.91
10237	1,3-Dichlorobenzene	541-73-1	< 0.005	0.005	0.91
10237	1,4-Dichlorobenzene	106-46-7	< 0.005	0.005	0.91
10237	1,1-Dichloroethane	75-34-3	< 0.005	0.005	0.91
10237	1,2-Dichloroethane	107-06-2	< 0.005	0.005	0.91
10237	1,1-Dichloroethene	75-35-4	< 0.005	0.005	0.91
10237	cis-1,2-Dichloroethene	156-59-2	< 0.005	0.005	0.91
10237	trans-1,2-Dichloroethene	156-60-5	< 0.005	0.005	0.91
10237	1,2-Dichloropropane	78-87-5	< 0.005	0.005	0.91
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.005	0.005	0.91
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.005	0.005	0.91
10237	Ethyl t-butyl ether	637-92-3	< 0.005	0.005	0.91
10237	Ethylbenzene	100-41-4	< 0.005	0.005	0.91
10237	di-Isopropyl ether	108-20-3	< 0.005	0.005	0.91
10237	Isopropylbenzene	98-82-8	< 0.005	0.005	0.91
10237	p-Isopropyltoluene	99-87-6	< 0.005	0.005	0.91
10237	Methyl Tertiary Butyl Ether	1634-04-4	< 0.005	0.005	0.91
10237	Methylene Chloride	75-09-2	< 0.005	0.005	0.91
10237	Naphthalene	91-20-3	< 0.005	0.005	0.91
10237	n-Propylbenzene	103-65-1	< 0.005	0.005	0.91
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.005	0.005	0.91
10237	Tetrachloroethene	127-18-4	< 0.005	0.005	0.91
10237	Toluene	108-88-3	< 0.005	0.005	0.91
10237	1,1,1-Trichloroethane	71-55-6	< 0.005	0.005	0.91
10237	1,1,2-Trichloroethane	79-00-5	< 0.005	0.005	0.91
10237	Trichloroethene	79-01-6	< 0.005	0.005	0.91
10237	Trichlorofluoromethane	75-69-4	< 0.005	0.005	0.91
10237	1,2,4-Trimethylbenzene	95-63-6	< 0.005	0.005	0.91
10237	1,3,5-Trimethylbenzene	108-67-8	< 0.005	0.005	0.91
10237	Vinyl Chloride	75-01-4	< 0.005	0.005	0.91
10237	Xylene (Total)	1330-20-7	< 0.005	0.005	0.91

2-Chlorethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: T-9(16) Grab Soil
Fairfax 26140

LLI Sample # SW 6774296
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 13:50 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

T-916

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
	in this method.				
GC Volatiles	**SW-846 8015B**		**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	< 1.4	1.4	30.05
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	**Moisture**	n.a.	**13.9**	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/03/2012 23:43	Andrea E Lando	0.91
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 13:50	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 13:50	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 13:50	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12250A34A	09/07/2012 17:52	Laura M Krieger	30.05
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 13:50	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003A	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: P-1(5) Grab Soil
Fairfax 26140

LLI Sample # SW 6774297
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 14:05 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

P-105

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	**Acetone**	67-64-1	**0.030**	0.024	0.95
10237	Acrolein	107-02-8	< 0.12	0.12	0.95
10237	Acrylonitrile	107-13-1	< 0.024	0.024	0.95
10237	t-Amyl methyl ether	994-05-8	< 0.006	0.006	0.95
10237	Benzene	71-43-2	< 0.006	0.006	0.95
10237	Bromodichloromethane	75-27-4	< 0.006	0.006	0.95
10237	Bromoform	75-25-2	< 0.006	0.006	0.95
10237	Bromomethane	74-83-9	< 0.006	0.006	0.95
10237	2-Butanone	78-93-3	< 0.012	0.012	0.95
10237	t-Butyl alcohol	75-65-0	< 0.12	0.12	0.95
10237	n-Butylbenzene	104-51-8	< 0.006	0.006	0.95
10237	sec-Butylbenzene	135-98-8	< 0.006	0.006	0.95
10237	Carbon Tetrachloride	56-23-5	< 0.006	0.006	0.95
10237	Chlorobenzene	108-90-7	< 0.006	0.006	0.95
10237	Chloroethane	75-00-3	< 0.006	0.006	0.95
10237	Chloroform	67-66-3	< 0.006	0.006	0.95
10237	Chloromethane	74-87-3	< 0.006	0.006	0.95
10237	Dibromochloromethane	124-48-1	< 0.006	0.006	0.95
10237	1,2-Dichlorobenzene	95-50-1	< 0.006	0.006	0.95
10237	1,3-Dichlorobenzene	541-73-1	< 0.006	0.006	0.95
10237	1,4-Dichlorobenzene	106-46-7	< 0.006	0.006	0.95
10237	1,1-Dichloroethane	75-34-3	< 0.006	0.006	0.95
10237	1,2-Dichloroethane	107-06-2	< 0.006	0.006	0.95
10237	1,1-Dichloroethene	75-35-4	< 0.006	0.006	0.95
10237	cis-1,2-Dichloroethene	156-59-2	< 0.006	0.006	0.95
10237	trans-1,2-Dichloroethene	156-60-5	< 0.006	0.006	0.95
10237	1,2-Dichloropropane	78-87-5	< 0.006	0.006	0.95
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.006	0.006	0.95
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.006	0.006	0.95
10237	Ethyl t-butyl ether	637-92-3	< 0.006	0.006	0.95
10237	Ethylbenzene	100-41-4	< 0.006	0.006	0.95
10237	di-Isopropyl ether	108-20-3	< 0.006	0.006	0.95
10237	Isopropylbenzene	98-82-8	< 0.006	0.006	0.95
10237	p-Isopropyltoluene	99-87-6	< 0.006	0.006	0.95
10237	Methyl Tertiary Butyl Ether	1634-04-4	< 0.006	0.006	0.95
10237	Methylene Chloride	75-09-2	< 0.006	0.006	0.95
10237	Naphthalene	91-20-3	< 0.006	0.006	0.95
10237	n-Propylbenzene	103-65-1	< 0.006	0.006	0.95
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.006	0.006	0.95
10237	Tetrachloroethene	127-18-4	< 0.006	0.006	0.95
10237	Toluene	108-88-3	< 0.006	0.006	0.95
10237	1,1,1-Trichloroethane	71-55-6	< 0.006	0.006	0.95
10237	1,1,2-Trichloroethane	79-00-5	< 0.006	0.006	0.95
10237	Trichloroethene	79-01-6	< 0.006	0.006	0.95
10237	Trichlorofluoromethane	75-69-4	< 0.006	0.006	0.95
10237	1,2,4-Trimethylbenzene	95-63-6	< 0.006	0.006	0.95
10237	1,3,5-Trimethylbenzene	108-67-8	< 0.006	0.006	0.95
10237	Vinyl Chloride	75-01-4	< 0.006	0.006	0.95
10237	Xylene (Total)	1330-20-7	< 0.006	0.006	0.95

2-Chlorethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: P-1(5) Grab Soil
Fairfax 26140

LLI Sample # SW 6774297
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 14:05 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

P-105

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
	in this method.				
GC Volatiles	**SW-846 8015B**		**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	< 1.3	1.3	25.51
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	**Moisture**	n.a.	**19.4**	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/04/2012 00:06	Andrea E Lando	0.95
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 14:05	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 14:05	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 14:05	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12250A34A	09/07/2012 19:03	Laura M Krieger	25.51
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 14:05	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003A	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-4(10) Grab Soil
Fairfax 26140

LLI Sample # SW 6774298
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 14:50 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

S-410

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	**Acetone**	67-64-1	**0.35**	0.024	0.94
10237	Acrolein	107-02-8	< 0.12	0.12	0.94
10237	Acrylonitrile	107-13-1	< 0.024	0.024	0.94
10237	t-Amyl methyl ether	994-05-8	< 0.006	0.006	0.94
10237	Benzene	71-43-2	< 0.006	0.006	0.94
10237	Bromodichloromethane	75-27-4	< 0.006	0.006	0.94
10237	Bromoform	75-25-2	< 0.006	0.006	0.94
10237	Bromomethane	74-83-9	< 0.006	0.006	0.94
10237	**2-Butanone**	78-93-3	**0.028**	0.012	0.94
10237	t-Butyl alcohol	75-65-0	< 0.12	0.12	0.94
10237	n-Butylbenzene	104-51-8	< 0.006	0.006	0.94
10237	sec-Butylbenzene	135-98-8	< 0.006	0.006	0.94
10237	Carbon Tetrachloride	56-23-5	< 0.006	0.006	0.94
10237	Chlorobenzene	108-90-7	< 0.006	0.006	0.94
10237	Chloroethane	75-00-3	< 0.006	0.006	0.94
10237	Chloroform	67-66-3	< 0.006	0.006	0.94
10237	Chloromethane	74-87-3	< 0.006	0.006	0.94
10237	Dibromochloromethane	124-48-1	< 0.006	0.006	0.94
10237	1,2-Dichlorobenzene	95-50-1	< 0.006	0.006	0.94
10237	1,3-Dichlorobenzene	541-73-1	< 0.006	0.006	0.94
10237	1,4-Dichlorobenzene	106-46-7	< 0.006	0.006	0.94
10237	1,1-Dichloroethane	75-34-3	< 0.006	0.006	0.94
10237	1,2-Dichloroethane	107-06-2	< 0.006	0.006	0.94
10237	1,1-Dichloroethene	75-35-4	< 0.006	0.006	0.94
10237	cis-1,2-Dichloroethene	156-59-2	< 0.006	0.006	0.94
10237	trans-1,2-Dichloroethene	156-60-5	< 0.006	0.006	0.94
10237	1,2-Dichloropropane	78-87-5	< 0.006	0.006	0.94
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.006	0.006	0.94
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.006	0.006	0.94
10237	Ethyl t-butyl ether	637-92-3	< 0.006	0.006	0.94
10237	Ethylbenzene	100-41-4	< 0.006	0.006	0.94
10237	di-Isopropyl ether	108-20-3	< 0.006	0.006	0.94
10237	Isopropylbenzene	98-82-8	< 0.006	0.006	0.94
10237	p-Isopropyltoluene	99-87-6	< 0.006	0.006	0.94
10237	Methyl Tertiary Butyl Ether	1634-04-4	< 0.006	0.006	0.94
10237	Methylene Chloride	75-09-2	< 0.006	0.006	0.94
10237	Naphthalene	91-20-3	< 0.006	0.006	0.94
10237	n-Propylbenzene	103-65-1	< 0.006	0.006	0.94
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.006	0.006	0.94
10237	Tetrachloroethene	127-18-4	< 0.006	0.006	0.94
10237	Toluene	108-88-3	< 0.006	0.006	0.94
10237	1,1,1-Trichloroethane	71-55-6	< 0.006	0.006	0.94
10237	1,1,2-Trichloroethane	79-00-5	< 0.006	0.006	0.94
10237	Trichloroethene	79-01-6	< 0.006	0.006	0.94
10237	Trichlorofluoromethane	75-69-4	< 0.006	0.006	0.94
10237	1,2,4-Trimethylbenzene	95-63-6	< 0.006	0.006	0.94
10237	1,3,5-Trimethylbenzene	108-67-8	< 0.006	0.006	0.94
10237	Vinyl Chloride	75-01-4	< 0.006	0.006	0.94
10237	Xylene (Total)	1330-20-7	< 0.006	0.006	0.94

2-Chlorethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: S-4(10) Grab Soil
Fairfax 26140

LLI Sample # SW 6774298
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 14:50 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

S-410

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
	in this method.				
GC Volatiles	**SW-846 8015B**		**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	< 1.2	1.2	23.45
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	**Moisture**	n.a.	**20.2**	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/04/2012 00:30	Andrea E Lando	0.94
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 14:50	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 14:50	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 14:50	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12250A34A	09/07/2012 12:16	Laura M Krieger	23.45
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 14:50	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003A	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: P-2(4.5) Grab Soil
Fairfax 26140

LLI Sample # SW 6774299
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 15:25 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

P-245

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	Acetone	67-64-1	< 1.1	1.1	47.26
10237	Acrolein	107-02-8	< 5.4	5.4	47.26
10237	Acrylonitrile	107-13-1	< 1.1	1.1	47.26
10237	t-Amyl methyl ether	994-05-8	< 0.27	0.27	47.26
10237	Benzene	71-43-2	< 0.27	0.27	47.26
10237	Bromodichloromethane	75-27-4	< 0.27	0.27	47.26
10237	Bromoform	75-25-2	< 0.27	0.27	47.26
10237	Bromomethane	74-83-9	< 0.27	0.27	47.26
10237	2-Butanone	78-93-3	< 0.54	0.54	47.26
10237	t-Butyl alcohol	75-65-0	< 5.4	5.4	47.26
10237	**n-Butylbenzene**	104-51-8	**0.55**	0.27	47.26
10237	sec-Butylbenzene	135-98-8	< 0.27	0.27	47.26
10237	Carbon Tetrachloride	56-23-5	< 0.27	0.27	47.26
10237	Chlorobenzene	108-90-7	< 0.27	0.27	47.26
10237	Chloroethane	75-00-3	< 0.27	0.27	47.26
10237	2-Chloroethyl Vinyl Ether	110-75-8	< 0.54	0.54	47.26
10237	Chloroform	67-66-3	< 0.27	0.27	47.26
10237	Chloromethane	74-87-3	< 0.27	0.27	47.26
10237	Dibromochloromethane	124-48-1	< 0.27	0.27	47.26
10237	1,2-Dichlorobenzene	95-50-1	< 0.27	0.27	47.26
10237	1,3-Dichlorobenzene	541-73-1	< 0.27	0.27	47.26
10237	1,4-Dichlorobenzene	106-46-7	< 0.27	0.27	47.26
10237	1,1-Dichloroethane	75-34-3	< 0.27	0.27	47.26
10237	1,2-Dichloroethane	107-06-2	< 0.27	0.27	47.26
10237	1,1-Dichloroethene	75-35-4	< 0.27	0.27	47.26
10237	cis-1,2-Dichloroethene	156-59-2	< 0.27	0.27	47.26
10237	trans-1,2-Dichloroethene	156-60-5	< 0.27	0.27	47.26
10237	1,2-Dichloropropane	78-87-5	< 0.27	0.27	47.26
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.27	0.27	47.26
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.27	0.27	47.26
10237	Ethyl t-butyl ether	637-92-3	< 0.27	0.27	47.26
10237	**Ethylbenzene**	100-41-4	**0.52**	0.27	47.26
10237	di-Isopropyl ether	108-20-3	< 0.27	0.27	47.26
10237	Isopropylbenzene	98-82-8	< 0.27	0.27	47.26
10237	p-Isopropyltoluene	99-87-6	< 0.27	0.27	47.26
10237	Methyl Tertiary Butyl Ether	1634-04-4	< 0.27	0.27	47.26
10237	Methylene Chloride	75-09-2	< 0.27	0.27	47.26
10237	Naphthalene	91-20-3	< 0.27	0.27	47.26
10237	**n-Propylbenzene**	103-65-1	**0.65**	0.27	47.26
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.27	0.27	47.26
10237	Tetrachloroethene	127-18-4	< 0.27	0.27	47.26
10237	Toluene	108-88-3	< 0.27	0.27	47.26
10237	1,1,1-Trichloroethane	71-55-6	< 0.27	0.27	47.26
10237	1,1,2-Trichloroethane	79-00-5	< 0.27	0.27	47.26
10237	Trichloroethene	79-01-6	< 0.27	0.27	47.26
10237	Trichlorofluoromethane	75-69-4	< 0.27	0.27	47.26
10237	**1,2,4-Trimethylbenzene**	95-63-6	**2.6**	0.27	47.26
10237	1,3,5-Trimethylbenzene	108-67-8	< 0.27	0.27	47.26
10237	Vinyl Chloride	75-01-4	< 0.27	0.27	47.26
10237	**Xylene (Total)**	1330-20-7	**0.39**	0.27	47.26

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: P-2(4.5) Grab Soil
Fairfax 26140

LLI Sample # SW 6774299
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 15:25 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

P-245

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B**		**mg/kg**	**mg/kg**	
01637	**TPH-GRO soil C6-C10**	n.a.	**59**	4.4	95.6
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	**Moisture**	n.a.	**12.9**	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Q122471AA	09/04/2012 00:50	Andrea E Lando	47.26
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 15:25	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 15:25	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 15:25	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12250A34A	09/08/2012 01:38	Laura M Krieger	95.6
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 15:25	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003A	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: D-1(4.5) Grab Soil
Fairfax 26140

LLI Sample # SW 6774300
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 18:10 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

D-145

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	**Acetone**	67-64-1	**0.091**	0.029	1.19
10237	Acrolein	107-02-8	< 0.15	0.15	1.19
10237	Acrylonitrile	107-13-1	< 0.029	0.029	1.19
10237	t-Amyl methyl ether	994-05-8	< 0.007	0.007	1.19
10237	Benzene	71-43-2	< 0.007	0.007	1.19
10237	Bromodichloromethane	75-27-4	< 0.007	0.007	1.19
10237	Bromoform	75-25-2	< 0.007	0.007	1.19
10237	Bromomethane	74-83-9	< 0.007	0.007	1.19
10237	2-Butanone	78-93-3	< 0.015	0.015	1.19
10237	t-Butyl alcohol	75-65-0	< 0.15	0.15	1.19
10237	n-Butylbenzene	104-51-8	< 0.007	0.007	1.19
10237	sec-Butylbenzene	135-98-8	< 0.007	0.007	1.19
10237	Carbon Tetrachloride	56-23-5	< 0.007	0.007	1.19
10237	Chlorobenzene	108-90-7	< 0.007	0.007	1.19
10237	Chloroethane	75-00-3	< 0.007	0.007	1.19
10237	Chloroform	67-66-3	< 0.007	0.007	1.19
10237	Chloromethane	74-87-3	< 0.007	0.007	1.19
10237	Dibromochloromethane	124-48-1	< 0.007	0.007	1.19
10237	1,2-Dichlorobenzene	95-50-1	< 0.007	0.007	1.19
10237	1,3-Dichlorobenzene	541-73-1	< 0.007	0.007	1.19
10237	1,4-Dichlorobenzene	106-46-7	< 0.007	0.007	1.19
10237	1,1-Dichloroethane	75-34-3	< 0.007	0.007	1.19
10237	1,2-Dichloroethane	107-06-2	< 0.007	0.007	1.19
10237	1,1-Dichloroethene	75-35-4	< 0.007	0.007	1.19
10237	cis-1,2-Dichloroethene	156-59-2	< 0.007	0.007	1.19
10237	trans-1,2-Dichloroethene	156-60-5	< 0.007	0.007	1.19
10237	1,2-Dichloropropane	78-87-5	< 0.007	0.007	1.19
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.007	0.007	1.19
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.007	0.007	1.19
10237	Ethyl t-butyl ether	637-92-3	< 0.007	0.007	1.19
10237	Ethylbenzene	100-41-4	< 0.007	0.007	1.19
10237	di-Isopropyl ether	108-20-3	< 0.007	0.007	1.19
10237	Isopropylbenzene	98-82-8	< 0.007	0.007	1.19
10237	p-Isopropyltoluene	99-87-6	< 0.007	0.007	1.19
10237	Methyl Tertiary Butyl Ether	1634-04-4	< 0.007	0.007	1.19
10237	Methylene Chloride	75-09-2	< 0.007	0.007	1.19
10237	Naphthalene	91-20-3	< 0.007	0.007	1.19
10237	n-Propylbenzene	103-65-1	< 0.007	0.007	1.19
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.007	0.007	1.19
10237	Tetrachloroethene	127-18-4	< 0.007	0.007	1.19
10237	**Toluene**	108-88-3	**0.013**	0.007	1.19
10237	1,1,1-Trichloroethane	71-55-6	< 0.007	0.007	1.19
10237	1,1,2-Trichloroethane	79-00-5	< 0.007	0.007	1.19
10237	Trichloroethene	79-01-6	< 0.007	0.007	1.19
10237	Trichlorofluoromethane	75-69-4	< 0.007	0.007	1.19
10237	1,2,4-Trimethylbenzene	95-63-6	< 0.007	0.007	1.19
10237	1,3,5-Trimethylbenzene	108-67-8	< 0.007	0.007	1.19
10237	Vinyl Chloride	75-01-4	< 0.007	0.007	1.19
10237	Xylene (Total)	1330-20-7	< 0.007	0.007	1.19

2-Chlorethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: D-1(4.5) Grab Soil
Fairfax 26140

LLI Sample # SW 6774300
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 18:10 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

D-145

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
	in this method.				
GC Volatiles	**SW-846 8015B**		**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	< 1.0	1.0	20.76
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	**Moisture**	n.a.	**19.0**	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/04/2012 00:53	Andrea E Lando	1.19
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 18:10	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 18:10	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 18:10	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12250A34A	09/07/2012 19:39	Laura M Krieger	20.76
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 18:10	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003A	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: D-2(4) Grab Soil
Fairfax 26140

LLI Sample # SW 6774301
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 18:20 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

D-204

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	**Acetone**	67-64-1	**0.051**	0.020	0.89
10237	Acrolein	107-02-8	< 0.10	0.10	0.89
10237	Acrylonitrile	107-13-1	< 0.020	0.020	0.89
10237	t-Amyl methyl ether	994-05-8	< 0.005	0.005	0.89
10237	Benzene	71-43-2	< 0.005	0.005	0.89
10237	Bromodichloromethane	75-27-4	< 0.005	0.005	0.89
10237	Bromoform	75-25-2	< 0.005	0.005	0.89
10237	Bromomethane	74-83-9	< 0.005	0.005	0.89
10237	2-Butanone	78-93-3	< 0.010	0.010	0.89
10237	t-Butyl alcohol	75-65-0	< 0.10	0.10	0.89
10237	n-Butylbenzene	104-51-8	< 0.005	0.005	0.89
10237	sec-Butylbenzene	135-98-8	< 0.005	0.005	0.89
10237	Carbon Tetrachloride	56-23-5	< 0.005	0.005	0.89
10237	Chlorobenzene	108-90-7	< 0.005	0.005	0.89
10237	Chloroethane	75-00-3	< 0.005	0.005	0.89
10237	Chloroform	67-66-3	< 0.005	0.005	0.89
10237	Chloromethane	74-87-3	< 0.005	0.005	0.89
10237	Dibromochloromethane	124-48-1	< 0.005	0.005	0.89
10237	1,2-Dichlorobenzene	95-50-1	< 0.005	0.005	0.89
10237	1,3-Dichlorobenzene	541-73-1	< 0.005	0.005	0.89
10237	1,4-Dichlorobenzene	106-46-7	< 0.005	0.005	0.89
10237	1,1-Dichloroethane	75-34-3	< 0.005	0.005	0.89
10237	1,2-Dichloroethane	107-06-2	< 0.005	0.005	0.89
10237	1,1-Dichloroethene	75-35-4	< 0.005	0.005	0.89
10237	cis-1,2-Dichloroethene	156-59-2	< 0.005	0.005	0.89
10237	trans-1,2-Dichloroethene	156-60-5	< 0.005	0.005	0.89
10237	1,2-Dichloropropane	78-87-5	< 0.005	0.005	0.89
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.005	0.005	0.89
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.005	0.005	0.89
10237	Ethyl t-butyl ether	637-92-3	< 0.005	0.005	0.89
10237	Ethylbenzene	100-41-4	< 0.005	0.005	0.89
10237	di-Isopropyl ether	108-20-3	< 0.005	0.005	0.89
10237	Isopropylbenzene	98-82-8	< 0.005	0.005	0.89
10237	p-Isopropyltoluene	99-87-6	< 0.005	0.005	0.89
10237	Methyl Tertiary Butyl Ether	1634-04-4	< 0.005	0.005	0.89
10237	Methylene Chloride	75-09-2	< 0.005	0.005	0.89
10237	Naphthalene	91-20-3	< 0.005	0.005	0.89
10237	n-Propylbenzene	103-65-1	< 0.005	0.005	0.89
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.005	0.005	0.89
10237	Tetrachloroethene	127-18-4	< 0.005	0.005	0.89
10237	Toluene	108-88-3	< 0.005	0.005	0.89
10237	1,1,1-Trichloroethane	71-55-6	< 0.005	0.005	0.89
10237	1,1,2-Trichloroethane	79-00-5	< 0.005	0.005	0.89
10237	Trichloroethene	79-01-6	< 0.005	0.005	0.89
10237	Trichlorofluoromethane	75-69-4	< 0.005	0.005	0.89
10237	1,2,4-Trimethylbenzene	95-63-6	< 0.005	0.005	0.89
10237	1,3,5-Trimethylbenzene	108-67-8	< 0.005	0.005	0.89
10237	Vinyl Chloride	75-01-4	< 0.005	0.005	0.89
10237	Xylene (Total)	1330-20-7	< 0.005	0.005	0.89

2-Chlorethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: D-2(4) Grab Soil
Fairfax 26140

LLI Sample # SW 6774301
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 18:20 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

D-204

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
	in this method.				
GC Volatiles	**SW-846 8015B**		**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	< 1.0	1.0	22.73
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	**Moisture**	n.a.	**13.1**	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/04/2012 01:16	Andrea E Lando	0.89
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 18:20	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 18:20	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 18:20	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12250A34A	09/07/2012 20:15	Laura M Krieger	22.73
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 18:20	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003B	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: D-3(4) Grab Soil
Fairfax 26140

LLI Sample # SW 6774302
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 18:30 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

D-304

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	**Acetone**	67-64-1	**0.041**	0.021	0.89
10237	Acrolein	107-02-8	< 0.11	0.11	0.89
10237	Acrylonitrile	107-13-1	< 0.021	0.021	0.89
10237	t-Amyl methyl ether	994-05-8	< 0.005	0.005	0.89
10237	**Benzene**	71-43-2	**0.012**	0.005	0.89
10237	Bromodichloromethane	75-27-4	< 0.005	0.005	0.89
10237	Bromoform	75-25-2	< 0.005	0.005	0.89
10237	Bromomethane	74-83-9	< 0.005	0.005	0.89
10237	2-Butanone	78-93-3	< 0.011	0.011	0.89
10237	t-Butyl alcohol	75-65-0	< 0.11	0.11	0.89
10237	n-Butylbenzene	104-51-8	< 0.005	0.005	0.89
10237	sec-Butylbenzene	135-98-8	< 0.005	0.005	0.89
10237	Carbon Tetrachloride	56-23-5	< 0.005	0.005	0.89
10237	Chlorobenzene	108-90-7	< 0.005	0.005	0.89
10237	Chloroethane	75-00-3	< 0.005	0.005	0.89
10237	Chloroform	67-66-3	< 0.005	0.005	0.89
10237	Chloromethane	74-87-3	< 0.005	0.005	0.89
10237	Dibromochloromethane	124-48-1	< 0.005	0.005	0.89
10237	1,2-Dichlorobenzene	95-50-1	< 0.005	0.005	0.89
10237	1,3-Dichlorobenzene	541-73-1	< 0.005	0.005	0.89
10237	1,4-Dichlorobenzene	106-46-7	< 0.005	0.005	0.89
10237	1,1-Dichloroethane	75-34-3	< 0.005	0.005	0.89
10237	1,2-Dichloroethane	107-06-2	< 0.005	0.005	0.89
10237	1,1-Dichloroethene	75-35-4	< 0.005	0.005	0.89
10237	cis-1,2-Dichloroethene	156-59-2	< 0.005	0.005	0.89
10237	trans-1,2-Dichloroethene	156-60-5	< 0.005	0.005	0.89
10237	1,2-Dichloropropane	78-87-5	< 0.005	0.005	0.89
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.005	0.005	0.89
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.005	0.005	0.89
10237	Ethyl t-butyl ether	637-92-3	< 0.005	0.005	0.89
10237	Ethylbenzene	100-41-4	< 0.005	0.005	0.89
10237	di-Isopropyl ether	108-20-3	< 0.005	0.005	0.89
10237	Isopropylbenzene	98-82-8	< 0.005	0.005	0.89
10237	p-Isopropyltoluene	99-87-6	< 0.005	0.005	0.89
10237	**Methyl Tertiary Butyl Ether**	1634-04-4	**0.009**	0.005	0.89
10237	Methylene Chloride	75-09-2	< 0.005	0.005	0.89
10237	Naphthalene	91-20-3	< 0.005	0.005	0.89
10237	n-Propylbenzene	103-65-1	< 0.005	0.005	0.89
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.005	0.005	0.89
10237	Tetrachloroethene	127-18-4	< 0.005	0.005	0.89
10237	**Toluene**	108-88-3	**0.079**	0.005	0.89
10237	1,1,1-Trichloroethane	71-55-6	< 0.005	0.005	0.89
10237	1,1,2-Trichloroethane	79-00-5	< 0.005	0.005	0.89
10237	Trichloroethene	79-01-6	< 0.005	0.005	0.89
10237	Trichlorofluoromethane	75-69-4	< 0.005	0.005	0.89
10237	1,2,4-Trimethylbenzene	95-63-6	< 0.005	0.005	0.89
10237	1,3,5-Trimethylbenzene	108-67-8	< 0.005	0.005	0.89
10237	Vinyl Chloride	75-01-4	< 0.005	0.005	0.89
10237	**Xylene (Total)**	1330-20-7	**0.009**	0.005	0.89

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: D-3(4) Grab Soil
Fairfax 26140

LLI Sample # SW 6774302
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 18:30 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

D-304

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
	2-Chlorethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards in this method.				
GC Volatiles		**SW-846 8015B**	**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	< 1.2	1.2	24.7
Wet Chemistry		**SM20 2540 G**	**%**	**%**	
00111	**Moisture**	n.a.	**17.0**	0.50	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.				

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/04/2012 01:39	Andrea E Lando	0.89
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 18:30	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 18:30	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 18:30	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12250A34A	09/07/2012 20:51	Laura M Krieger	24.7
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 18:30	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	1	12248820003B	09/04/2012 16:50	Scott W Freisher	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: D-4(4.5) Grab Soil
Fairfax 26140

LLI Sample # SW 6774303
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 18:40 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

D-445

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**mg/kg**	**mg/kg**	
10237	**Acetone**	67-64-1	**0.054**	0.021	0.91
10237	Acrolein	107-02-8	< 0.11	0.11	0.91
10237	Acrylonitrile	107-13-1	< 0.021	0.021	0.91
10237	t-Amyl methyl ether	994-05-8	< 0.005	0.005	0.91
10237	Benzene	71-43-2	< 0.005	0.005	0.91
10237	Bromodichloromethane	75-27-4	< 0.005	0.005	0.91
10237	Bromoform	75-25-2	< 0.005	0.005	0.91
10237	Bromomethane	74-83-9	< 0.005	0.005	0.91
10237	2-Butanone	78-93-3	< 0.011	0.011	0.91
10237	t-Butyl alcohol	75-65-0	< 0.11	0.11	0.91
10237	n-Butylbenzene	104-51-8	< 0.005	0.005	0.91
10237	sec-Butylbenzene	135-98-8	< 0.005	0.005	0.91
10237	Carbon Tetrachloride	56-23-5	< 0.005	0.005	0.91
10237	Chlorobenzene	108-90-7	< 0.005	0.005	0.91
10237	Chloroethane	75-00-3	< 0.005	0.005	0.91
10237	Chloroform	67-66-3	< 0.005	0.005	0.91
10237	Chloromethane	74-87-3	< 0.005	0.005	0.91
10237	Dibromochloromethane	124-48-1	< 0.005	0.005	0.91
10237	1,2-Dichlorobenzene	95-50-1	< 0.005	0.005	0.91
10237	1,3-Dichlorobenzene	541-73-1	< 0.005	0.005	0.91
10237	1,4-Dichlorobenzene	106-46-7	< 0.005	0.005	0.91
10237	1,1-Dichloroethane	75-34-3	< 0.005	0.005	0.91
10237	1,2-Dichloroethane	107-06-2	< 0.005	0.005	0.91
10237	1,1-Dichloroethene	75-35-4	< 0.005	0.005	0.91
10237	cis-1,2-Dichloroethene	156-59-2	< 0.005	0.005	0.91
10237	trans-1,2-Dichloroethene	156-60-5	< 0.005	0.005	0.91
10237	1,2-Dichloropropane	78-87-5	< 0.005	0.005	0.91
10237	cis-1,3-Dichloropropene	10061-01-5	< 0.005	0.005	0.91
10237	trans-1,3-Dichloropropene	10061-02-6	< 0.005	0.005	0.91
10237	Ethyl t-butyl ether	637-92-3	< 0.005	0.005	0.91
10237	Ethylbenzene	100-41-4	< 0.005	0.005	0.91
10237	di-Isopropyl ether	108-20-3	< 0.005	0.005	0.91
10237	Isopropylbenzene	98-82-8	< 0.005	0.005	0.91
10237	p-Isopropyltoluene	99-87-6	< 0.005	0.005	0.91
10237	Methyl Tertiary Butyl Ether	1634-04-4	< 0.005	0.005	0.91
10237	Methylene Chloride	75-09-2	< 0.005	0.005	0.91
10237	Naphthalene	91-20-3	< 0.005	0.005	0.91
10237	n-Propylbenzene	103-65-1	< 0.005	0.005	0.91
10237	1,1,2,2-Tetrachloroethane	79-34-5	< 0.005	0.005	0.91
10237	Tetrachloroethene	127-18-4	< 0.005	0.005	0.91
10237	Toluene	108-88-3	< 0.005	0.005	0.91
10237	1,1,1-Trichloroethane	71-55-6	< 0.005	0.005	0.91
10237	1,1,2-Trichloroethane	79-00-5	< 0.005	0.005	0.91
10237	Trichloroethene	79-01-6	< 0.005	0.005	0.91
10237	Trichlorofluoromethane	75-69-4	< 0.005	0.005	0.91
10237	1,2,4-Trimethylbenzene	95-63-6	< 0.005	0.005	0.91
10237	1,3,5-Trimethylbenzene	108-67-8	< 0.005	0.005	0.91
10237	Vinyl Chloride	75-01-4	< 0.005	0.005	0.91
10237	Xylene (Total)	1330-20-7	< 0.005	0.005	0.91

2-Chlorethyl vinyl ether is an acid labile compound and cannot be reported due to acid preservation of the samples and standards

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: D-4(4.5) Grab Soil
Fairfax 26140

LLI Sample # SW 6774303
LLI Group # 1332614
Account # 12152

Project Name: Fairfax 26140

Collected: 08/29/2012 18:40 by CL

Submitted: 08/31/2012 10:10
Reported: 09/10/2012 14:09

Kleinfelder
1 Speen Street
Framingham MA 01701

D-445

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
	in this method.				
GC Volatiles	**SW-846 8015B**		**mg/kg**	**mg/kg**	
01637	TPH-GRO soil C6-C10	n.a.	< 1	1	21.22
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	**Moisture**	n.a.	**14.7**	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	X122471AA	09/04/2012 02:01	Andrea E Lando	0.91
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201224428674	08/29/2012 18:40	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201224428674	08/29/2012 18:40	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201224428674	08/29/2012 18:40	Client Supplied	1
01637	TPH-GRO soil C6-C10	SW-846 8015B	1	12250A34A	09/07/2012 21:27	Laura M Krieger	21.22
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201224428674	08/29/2012 18:40	Client Supplied	n.a.
00111	Moisture	SM20 2540 G	2	12249820003A	09/05/2012 15:25	Scott W Freisher	1

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Quality Control Summary

Client Name: Kleinfelder Group Number: 1332614
Reported: 09/10/12 at 02:09 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: Q122471AA	Sample number(s): 6774295,6774299							
Acetone	< 1.0	1.0	mg/kg	76	79	32-209	3	30
Acrolein	< 5.0	5.0	mg/kg	77	75	52-139	3	30
Acrylonitrile	< 1.0	1.0	mg/kg	86	84	60-133	3	30
t-Amyl methyl ether	< 0.25	0.25	mg/kg	100	101	56-137	0	30
Benzene	< 0.25	0.25	mg/kg	109	111	80-120	1	30
Bromodichloromethane	< 0.25	0.25	mg/kg	94	97	78-120	3	30
Bromoform	< 0.25	0.25	mg/kg	81	83	70-120	3	30
Bromomethane	< 0.25	0.25	mg/kg	115	113	32-162	2	30
2-Butanone	< 0.50	0.50	mg/kg	71	76	46-153	7	30
t-Butyl alcohol	< 5.0	5.0	mg/kg	97	95	60-149	2	30
n-Butylbenzene	< 0.25	0.25	mg/kg	84	90	72-120	6	30
sec-Butylbenzene	< 0.25	0.25	mg/kg	84	87	75-120	4	30
Carbon Tetrachloride	< 0.25	0.25	mg/kg	97	99	69-122	3	30
Chlorobenzene	< 0.25	0.25	mg/kg	97	97	80-120	0	30
Chloroethane	< 0.25	0.25	mg/kg	77	77	37-154	0	30
2-Chloroethyl Vinyl Ether	< 0.50	0.50	mg/kg	91	89	43-146	2	30
Chloroform	< 0.25	0.25	mg/kg	102	103	80-120	0	30
Chloromethane	< 0.25	0.25	mg/kg	86	84	56-120	2	30
Dibromochloromethane	< 0.25	0.25	mg/kg	91	92	77-120	1	30
1,2-Dichlorobenzene	< 0.25	0.25	mg/kg	90	92	79-120	2	30
1,3-Dichlorobenzene	< 0.25	0.25	mg/kg	91	93	78-120	2	30
1,4-Dichlorobenzene	< 0.25	0.25	mg/kg	91	95	79-120	4	30
1,1-Dichloroethane	< 0.25	0.25	mg/kg	104	106	80-120	3	30
1,2-Dichloroethane	< 0.25	0.25	mg/kg	98	97	71-129	1	30
1,1-Dichloroethene	< 0.25	0.25	mg/kg	114	113	73-129	1	30
cis-1,2-Dichloroethene	< 0.25	0.25	mg/kg	109	111	80-120	2	30
trans-1,2-Dichloroethene	< 0.25	0.25	mg/kg	111	114	79-120	3	30
1,2-Dichloropropane	< 0.25	0.25	mg/kg	102	103	77-120	1	30
cis-1,3-Dichloropropene	< 0.25	0.25	mg/kg	103	106	74-120	2	30
trans-1,3-Dichloropropene	< 0.25	0.25	mg/kg	88	90	77-120	2	30
Ethyl t-butyl ether	< 0.25	0.25	mg/kg	97	98	70-122	1	30
Ethylbenzene	< 0.25	0.25	mg/kg	97	98	80-120	1	30
di-Isopropyl ether	< 0.25	0.25	mg/kg	98	98	73-121	1	30
Isopropylbenzene	< 0.25	0.25	mg/kg	89	90	76-120	1	30
p-Isopropyltoluene	< 0.25	0.25	mg/kg	84	88	75-120	5	30
Methyl Tertiary Butyl Ether	< 0.25	0.25	mg/kg	106	107	74-121	1	30
Methylene Chloride	< 0.25	0.25	mg/kg	115	114	76-124	1	30
Naphthalene	< 0.25	0.25	mg/kg	72	75	59-123	4	30
n-Propylbenzene	< 0.25	0.25	mg/kg	87	89	77-120	3	30
1,1,2,2-Tetrachloroethane	< 0.25	0.25	mg/kg	91	91	71-123	0	30
Tetrachloroethene	< 0.25	0.25	mg/kg	98	99	78-126	1	30
Toluene	< 0.25	0.25	mg/kg	97	99	80-120	2	30
1,1,1-Trichloroethane	< 0.25	0.25	mg/kg	98	100	71-125	2	30
1,1,2-Trichloroethane	< 0.25	0.25	mg/kg	98	99	80-120	1	30
Trichloroethene	< 0.25	0.25	mg/kg	103	103	80-120	1	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1332614
Reported: 09/10/12 at 02:09 PM

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Trichlorofluoromethane	< 0.25	0.25	mg/kg	87	90	58-133	3	30
1,2,4-Trimethylbenzene	< 0.25	0.25	mg/kg	87	88	79-120	2	30
1,3,5-Trimethylbenzene	< 0.25	0.25	mg/kg	86	89	78-120	3	30
Vinyl Chloride	< 0.25	0.25	mg/kg	85	86	53-120	1	30
Xylene (Total)	< 0.25	0.25	mg/kg	97	98	80-120	1	30

Batch number: X122471AA Sample number(s): 6774285-6774294,6774296-6774298,6774300-6774303

Acetone	< 0.020	0.020	mg/kg	132		32-209		
Acrolein	< 0.10	0.10	mg/kg	79		52-139		
Acrylonitrile	< 0.020	0.020	mg/kg	97		60-133		
t-Amyl methyl ether	< 0.005	0.005	mg/kg	91		56-137		
Benzene	< 0.005	0.005	mg/kg	104		80-120		
Bromodichloromethane	< 0.005	0.005	mg/kg	96		78-120		
Bromoform	< 0.005	0.005	mg/kg	88		70-120		
Bromomethane	< 0.005	0.005	mg/kg	72		32-162		
2-Butanone	< 0.010	0.010	mg/kg	84		46-153		
t-Butyl alcohol	< 0.10	0.10	mg/kg	126		60-149		
n-Butylbenzene	< 0.005	0.005	mg/kg	103		72-120		
sec-Butylbenzene	< 0.005	0.005	mg/kg	107		75-120		
Carbon Tetrachloride	< 0.005	0.005	mg/kg	95		69-122		
Chlorobenzene	< 0.005	0.005	mg/kg	102		80-120		
Chloroethane	< 0.005	0.005	mg/kg	69		37-154		
Chloroform	< 0.005	0.005	mg/kg	101		80-120		
Chloromethane	< 0.005	0.005	mg/kg	64		56-120		
Dibromochloromethane	< 0.005	0.005	mg/kg	99		77-120		
1,2-Dichlorobenzene	< 0.005	0.005	mg/kg	102		79-120		
1,3-Dichlorobenzene	< 0.005	0.005	mg/kg	97		78-120		
1,4-Dichlorobenzene	< 0.005	0.005	mg/kg	103		79-120		
1,1-Dichloroethane	< 0.005	0.005	mg/kg	98		80-120		
1,2-Dichloroethane	< 0.005	0.005	mg/kg	94		71-129		
1,1-Dichloroethene	< 0.005	0.005	mg/kg	102		73-129		
cis-1,2-Dichloroethene	< 0.005	0.005	mg/kg	103		80-120		
trans-1,2-Dichloroethene	< 0.005	0.005	mg/kg	102		79-120		
1,2-Dichloropropane	< 0.005	0.005	mg/kg	98		77-120		
cis-1,3-Dichloropropene	< 0.005	0.005	mg/kg	93		74-120		
trans-1,3-Dichloropropene	< 0.005	0.005	mg/kg	87		77-120		
Ethyl t-butyl ether	< 0.005	0.005	mg/kg	92		70-122		
Ethylbenzene	< 0.005	0.005	mg/kg	102		80-120		
di-Isopropyl ether	< 0.005	0.005	mg/kg	91		73-121		
Isopropylbenzene	< 0.005	0.005	mg/kg	107		76-120		
p-Isopropyltoluene	< 0.005	0.005	mg/kg	104		75-120		
Methyl Tertiary Butyl Ether	< 0.005	0.005	mg/kg	96		74-121		
Methylene Chloride	< 0.005	0.005	mg/kg	106		76-124		
Naphthalene	< 0.005	0.005	mg/kg	95		59-123		
n-Propylbenzene	< 0.005	0.005	mg/kg	104		77-120		
1,1,2,2-Tetrachloroethane	< 0.005	0.005	mg/kg	100		71-123		
Tetrachloroethene	< 0.005	0.005	mg/kg	105		78-126		
Toluene	< 0.005	0.005	mg/kg	100		80-120		
1,1,1-Trichloroethane	< 0.005	0.005	mg/kg	88		71-125		
1,1,2-Trichloroethane	< 0.005	0.005	mg/kg	107		80-120		
Trichloroethene	< 0.005	0.005	mg/kg	99		80-120		
Trichlorofluoromethane	< 0.005	0.005	mg/kg	88		58-133		
1,2,4-Trimethylbenzene	< 0.005	0.005	mg/kg	102		79-120		
1,3,5-Trimethylbenzene	< 0.005	0.005	mg/kg	103		78-120		
Vinyl Chloride	< 0.005	0.005	mg/kg	74		53-120		
Xylene (Total)	< 0.005	0.005	mg/kg	105		80-120		

Batch number: 12243A31B Sample number(s): 6774285-6774289

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1332614
Reported: 09/10/12 at 02:09 PM

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
TPH-GRO soil C6-C10	< 1.0	1.0	mg/kg	83	91	67-119	9	30
Batch number: 12250A34A	Sample number(s): 6774290-6774303							
TPH-GRO soil C6-C10	< 1.0	1.0	mg/kg	86	84	67-119	2	30
Batch number: 12248820003A	Sample number(s): 6774285-6774300							
Moisture				100		99-101		
Batch number: 12248820003B	Sample number(s): 6774301-6774302							
Moisture				100		99-101		
Batch number: 12249820003A	Sample number(s): 6774303							
Moisture				100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: X122471AA	Sample number(s): 6774285-6774294,6774296-6774298,6774300-6774303 UNSPK: P773594								
Acetone	179	183	31-195	4	30				
Acrolein	47	39	10-165	25	30				
Acrylonitrile	111	114	48-139	3	30				
t-Amyl methyl ether	88	92	59-123	2	30				
Benzene	-24*	213*	55-143	85*	30				
Bromodichloromethane	74	79	53-136	1	30				
Bromoform	71	76	38-124	0	30				
Bromomethane	73	78	42-168	0	30				
2-Butanone	102	110	37-163	2	30				
t-Butyl alcohol	160*	157*	47-153	8	30				
n-Butylbenzene	14*	20*	30-146	30	30				
sec-Butylbenzene	18*	24*	33-157	27	30				
Carbon Tetrachloride	76	81	45-153	1	30				
Chlorobenzene	-27*	14*	49-135	22	30				
Chloroethane	71	67	39-152	12	30				
Chloroform	-120*	-57*	61-142	36*	30				
Chloromethane	68	69	51-163	5	30				
Dibromochloromethane	77	81	51-128	1	30				
1,2-Dichlorobenzene	409 (2)	149 (2)	36-133	19	30				
1,3-Dichlorobenzene	27*	33*	34-134	14	30				
1,4-Dichlorobenzene	25*	26*	35-136	1	30				
1,1-Dichloroethane	92	103	63-142	5	30				
1,2-Dichloroethane	90	97	68-131	2	30				
1,1-Dichloroethene	100	111	61-149	4	30				
cis-1,2-Dichloroethene	90	131	60-136	26	30				
trans-1,2-Dichloroethene	85	89	59-142	1	30				
1,2-Dichloropropane	78	82	62-135	1	30				
cis-1,3-Dichloropropene	63	71	51-131	5	30				
trans-1,3-Dichloropropene	58	66	49-129	7	30				
Ethyl t-butyl ether	89	95	58-124	1	30				
Ethylbenzene	30*	37*	44-141	14	30				
di-Isopropyl ether	85	89	59-133	2	30				

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1332614
Reported: 09/10/12 at 02:09 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Isopropylbenzene	24*	31*	38-144	19	30				
p-Isopropyltoluene	15*	21*	29-152	27	30				
Methyl Tertiary Butyl Ether	104	107	55-129	4	30				
Methylene Chloride	114	182*	61-141	28	30				
Naphthalene	66	60	10-138	12	30				
n-Propylbenzene	20*	26*	39-157	22	30				
1,1,2,2-Tetrachloroethane	98	99	40-152	5	30				
Tetrachloroethene	4*	40*	42-149	51*	30				
Toluene	48*	60	50-146	15	30				
1,1,1-Trichloroethane	76	79	64-142	3	30				
1,1,2-Trichloroethane	95	98	54-139	3	30				
Trichloroethene	34*	85	53-144	47*	30				
Trichlorofluoromethane	100	100	47-163	6	30				
1,2,4-Trimethylbenzene	23*	29*	37-149	18	30				
1,3,5-Trimethylbenzene	22*	28*	38-150	21	30				
Vinyl Chloride	82	87	50-154	1	30				
Xylene (Total)	33*	40*	44-136	13	30				
Batch number: 12248820003A	Sample number(s): 6774285-6774300					BKG: 6774300			
Moisture						19.0	17.9	6	13
Batch number: 12248820003B	Sample number(s): 6774301-6774302					BKG: P774303			
Moisture						13.2	18.0	31*	13
Batch number: 12249820003A	Sample number(s): 6774303					BKG: 6774303			
Moisture						14.7	15.1	3	13

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL by 8260 (soil)
Batch number: Q122471AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6774295	99	110	96	88
6774299	100	113	99	90
Blank	101	109	95	85
LCS	98	105	94	84
LCSD	101	106	98	90
Limits:	50-141	54-135	52-141	50-131

Analysis Name: TCL by 8260 (soil)
Batch number: X122471AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6774285	102	108	91	93
6774286	103	105	90	92

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder
Reported: 09/10/12 at 02:09 PM

Group Number: 1332614

Surrogate Quality Control

6774287	104	109	93	95
6774288	100	104	93	91
6774289	99	105	93	89
6774290	101	103	92	93
6774291	100	110	92	98
6774292	103	109	91	93
6774293	102	109	92	92
6774294	103	108	95	95
6774296	102	103	90	95
6774297	107	110	90	88
6774298	102	105	91	92
6774300	105	108	95	95
6774301	105	111	89	91
6774302	105	110	96	91
6774303	105	108	93	93
Blank	101	104	91	93
LCS	101	108	100	95
MS	101	113	101	100
MSD	103	113	101	98
Limits:	50-141	54-135	52-141	50-131

Analysis Name: TPH-GRO soil C6-C10
Batch number: 12243A31B

	Trifluorotoluene-F
6774285	78
6774286	89
6774287	79
6774288	75
6774289	67
Blank	84
LCS	90
LCSD	95
Limits:	61-122

Analysis Name: TPH-GRO soil C6-C10
Batch number: 12250A34A

	Trifluorotoluene-F
6774290	79
6774291	73
6774292	88
6774293	77
6774294	120
6774295	101
6774296	84
6774297	72
6774298	112
6774299	89
6774300	81
6774301	79
6774302	83
6774303	81
Blank	88
LCS	92
LCSD	92

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

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Quality Control Summary

Client Name: Kleinfelder
Reported: 09/10/12 at 02:09 PM

Group Number: 1332614

Surrogate Quality Control

Limits: 61-122

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Lancaster Laboratories

Analysis Request/Environmental Services Chain of Custody

Page 1 of 2 Cooler 1 of 2

For Lancaster Laboratories use only Acct. #: 12152

Group #: 1332614 Sample #: 6774285-303

Client:	Fairfax Petroleum	Acct. #:	
Project Name/#:	26140/ Great Falls	PWSID #:	
Project Address:	9901 Georgetown Pike Great Falls, VA		
Project Manager:	Brian Barone	P.O. #:	51141-229130
Sampler:	Charlie Cew	Quote #:	
Name of State where samples were collected:	Virginia		

For Lab Use Only
FSC:
SCR#:

Preservation Codes: H=HCl T=Thiosulfate N=HNO3 B=NaOH S=H2SO4 O=Other

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (Potable / NPDES)	Matrix: Other	Total # of Containers	Full List VOCs-8260	TPH-GRO-8015	Remarks	Temperature of samples upon receipt (if requested)
S-1 (10)	8-29-12	0655	X		X			5	X	X		
S-2 (10)		0700	X		X			5	X	X		
S-3 (9)		0710	X		X			5	X	X		
T-1 (16)		0750	X		X			5	X	X		
T-2 (16)		0800	X		X			5	X	X		
T-3 (16)		0815	X		X			5	X	X		
T-4 (16)		0940	X		X			5	X	X		
T-5 (16)		1010	X		X			5	X	X		
T-6 (16)		1105	X		X			5	X	X		
T-7 (16)		1300	X		X			5	X	X		

Analyses Requested / Preservation Codes: 0 0

Turnaround Time Requested (TAT) (please circle) Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: 5-Day TAT as per Mark Steele
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

Data Package Options (please circle if required)
Type I (validation/NJ reg) TX-TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

SDG Complete? Yes No

State-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicated QC sample and submit triplicate volume)
Internal COC required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	8-30-12	1700	FedEx	8-30-12	

Lancaster Laboratories, Inc. 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 717-656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client

Lancaster Laboratories

Analysis Request/Environmental Services Chain of Custody

For Lancaster Laboratories use only Acct. #: 12152

Page 2 of 2 Cooler ~~2 of~~ 1 of 2 Group #: 1332614 Sample #: 6774285-303

Client: Fairfax Petroleum Acct. #:

Project Name/#: 26140/ Great Falls PWSID #:

Project Address: 9901 Georgetown Pike Great Falls, VA

Project Manager: Brian Barone P.O. #: 51141-229130

Sampler: Charlie Low Quote #:

Name of State where samples were collected: Virginia

For Lab Use Only

FSC:

SCR#:

Preservation Codes: H=HCl T=Thiosulfate N=HNO3 B=NaOH S=H2SO4 O=Other

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (Potable / NPDES)	Matrix: Other	Total # of Containers	Full List VOCs 8260 (O)	TPH-GRO-8015 (O)									Remarks	Temperature of samples upon receipt (if requested)
T-8 (16)	8-29-12	1345	X		X			5	X	X										
T-9 (16)		1350	X		X			5	X	X										
P-1 (5)		1405	X		X			5	X	X										
S-4 (10)		1450	X		X			5	X	X										
P-2 (4.5)		1525	X		X			5	X	X										
D-1 (4.5)		1810	X		X			5	X	X										
D-2 (4)		1820	X		X			5	X	X										
D-3 (4)		1830	X		X			5	X	X										
D-4 (4.5)		1840	X		X			5	X	X										
CY																				

Turnaround Time Requested (TAT) (please circle) Normal Rush

(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed: 5-Day TAT as per Mark Steele

Rush results requested by (please circle): Phone Fax E-mail

Phone #: Fax #:

E-mail address:

Data Package Options (please circle if required)

Type I (validation/NJ reg) TX-TRRP-13

Type II (Tier II) MA MCP CT RCP

Type III (Reduced NJ)

Type IV (CLP SOW)

Type VI (Raw Data Only)

SDG Complete? Yes No

State-specific QC (MS/MSD/Dup)? Yes No

(If yes, indicated QC sample and submit triplicate volume)

Internal COC required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	8-30-12	1700	Fed Ex	8-30-12	—
			[signature]	8/31/12	1010

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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Appendix D
VADEQ AWS Potable Well Sampling Results
[Provided By The VADEQ]

					RAW									
					1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane (EDB)	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane
					Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result
20103028	12938	Meruani Residence	813 Constellation Dr.	21-MAY-2013	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	8897	Knudsen Residence	808 Golden Arrow St.	31-AUG-2009	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				09-MAR-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				29-SEP-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0
				06-DEC-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
				29-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	8898	Kim Res. (fmr Schoonmaker Res.)	809 Golden Arrow St.	09-DEC-2009	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				30-MAR-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				14-JUN-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				14-OCT-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0
				29-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	8917	Kurbanov Residence	808 Constellation Rd.	31-AUG-2009	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				09-DEC-2009	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				09-MAR-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				11-JUN-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				29-SEP-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0
				06-DEC-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
				28-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	8918	Kan Residence	613 Deerfield Pond Ct.	31-AUG-2009	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				09-DEC-2009	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				09-MAR-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				11-JUN-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				29-SEP-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0
				06-DEC-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
				28-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	8937	Boggs Residence	716 Walker Rd.	03-SEP-2009	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				09-DEC-2009	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				09-MAR-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				11-JUN-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				29-SEP-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0
				06-DEC-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
				29-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	8938	WRNS Associates	721 Walker Rd.	03-SEP-2009	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				09-DEC-2009										
				09-MAR-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				11-JUN-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				29-SEP-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0
				06-DEC-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0
				10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
				29-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	9037	West Res. (fmr. Chappelear Res.)	614 Deerfiled Pond Ct.	21-SEP-2009	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				11-DEC-2009	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				09-MAR-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				11-JUN-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
				29-SEP-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0
				06-DEC-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0
				10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
				28-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

					2-Butanone (MEK)	2-Hexanone	2-Methylnaphthalene	4-Methyl-2-Pentanone	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Benzene	Benzo(a)Anthracene
					Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result
20103028	12938	Meruani Residence	813 Constellation Dr.	21-MAY-2013	<10	<10		<10			<20		<1	
	8897	Knudsen Residence	808 Golden Arrow St.	31-AUG-2009	<10.0	<10.0	<2.0	<10.0	<2.0	<2.0	<10.0	<2.0	<2.0	<2.0
				09-MAR-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				29-SEP-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				06-DEC-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				10-AUG-2011	<10	<10		<10			<20		<1	
				29-AUG-2012	<10	<10		<10			<20		<1	
	8898	Kim Res. (fmr Schoonmaker Res.)	809 Golden Arrow St.	09-DEC-2009	<10.0	<10.0		<10.0			<10.0		<2.0	
				30-MAR-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				14-JUN-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				14-OCT-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				29-AUG-2012	37.6	<10		<10			<20		<1	
	8917	Kurbanov Residence	808 Constellation Rd.	31-AUG-2009	<10.0	<10.0	<2.0	<10.0	<2.0	<2.0	<10.0	<2.0	<2.0	<2.0
				09-DEC-2009	<10.0	<10.0		<10.0			<10.0		<2.0	
				09-MAR-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				11-JUN-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				29-SEP-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				06-DEC-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				10-AUG-2011	<10	<10		<10			<20		<1	
				28-AUG-2012	<10	<10		<10			<20		<1	
	8918	Kan Residence	613 Deerfield Pond Ct.	31-AUG-2009	<10.0	<10.0	<2.0	<10.0	<2.0	<2.0	<10.0	<2.0	<2.0	<2.0
				09-DEC-2009	<10.0	<10.0		<10.0			<10.0		<2.0	
				09-MAR-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				11-JUN-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				29-SEP-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				06-DEC-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				10-AUG-2011	<10	<10		<10			<20		<1	
				28-AUG-2012	<10	<10		<10			<20		<1	
	8937	Boggs Residence	716 Walker Rd.	03-SEP-2009	<10.0	<10.0	<2.0	<10.0	<2.0	<2.0	<10.0	<2.0	<2.0	<2.0
				09-DEC-2009	<10.0	<10.0		<10.0			<10.0		<2.0	
				09-MAR-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				11-JUN-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				29-SEP-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				06-DEC-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				10-AUG-2011	7	<10		<10			<20		<1	
				29-AUG-2012	<10	<10		<10			<20		<1	
	8938	WRNS Associates	721 Walker Rd.	03-SEP-2009	<10.0	<10.0	<2.0	<10.0	<2.0	<2.0	<10.0	<2.0	<2.0	<2.0
				09-DEC-2009										
				09-MAR-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				11-JUN-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				29-SEP-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				06-DEC-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				10-AUG-2011	<10	<10		<10			<20		<1	
				29-AUG-2012	<10	<10		<10			<20		<1	
	9037	West Res. (fmr. Chappelear Res.)	614 Deerfiled Pond Ct.	21-SEP-2009	<10.0	<10.0	<2.0	<10.0	<2.0	<2.0	<10.0	<2.0	<2.0	<2.0
				11-DEC-2009	<10.0	<10.0		<10.0			<10.0		<2.0	
				09-MAR-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				11-JUN-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				29-SEP-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				06-DEC-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
				10-AUG-2011	<10	<10		<10			<20		<1	
				28-AUG-2012	<10	<10		<10			<20		<1	

					Benzo(a)Pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene
					Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result
20103028	12938	Meruani Residence	813 Constellation Dr.	21-MAY-2013					<1	<1	<1	<5	<1	<1
	8897	Knudsen Residence	808 Golden Arrow St.	31-AUG-2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-MAR-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				29-SEP-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				06-DEC-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				10-AUG-2011					<1	<1	<1	<5	<1	<1
				29-AUG-2012					<1	<1	<1	<5	<1	<1
	8898	Kim Res. (fmr Schoonmaker Res.)	809 Golden Arrow St.	09-DEC-2009					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				30-MAR-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				14-JUN-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				14-OCT-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				29-AUG-2012					<1	<1	<1	<5	<1	<1
	8917	Kurbanov Residence	808 Constellation Rd.	31-AUG-2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-DEC-2009					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-MAR-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				11-JUN-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				29-SEP-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				06-DEC-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				10-AUG-2011					<1	<1	<1	<5	<1	<1
				28-AUG-2012					<1	<1	<1	<5	<1	<1
	8918	Kan Residence	613 Deerfield Pond Ct.	31-AUG-2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-DEC-2009					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-MAR-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				11-JUN-2010					<2.0	<2.0	<2.0	5.6	<2.0	<2.0
				29-SEP-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				06-DEC-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				10-AUG-2011					<1	<1	<1	<5	<1	<1
				28-AUG-2012					<1	<1	<1	<5	<1	<1
	8937	Boggs Residence	716 Walker Rd.	03-SEP-2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-DEC-2009					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-MAR-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				11-JUN-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				29-SEP-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				06-DEC-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				10-AUG-2011					<1	<1	<1	<5	<1	<1
				29-AUG-2012					<1	<1	<1	<5	<1	<1
	8938	WRNS Associates	721 Walker Rd.	03-SEP-2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-DEC-2009										
				09-MAR-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				11-JUN-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				29-SEP-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				06-DEC-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				10-AUG-2011					<1	<1	<1	<5	<1	<1
				29-AUG-2012					<1	<1	<1	<5	<1	<1
	9037	West Res. (fmr. Chappelear Res.)	614 Deerfiled Pond Ct.	21-SEP-2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				11-DEC-2009					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-MAR-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				11-JUN-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				29-SEP-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				06-DEC-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				10-AUG-2011					<1	<1	<1	<5	<1	<1
				28-AUG-2012					<1	<1	<1	<5	<1	<1

					Chloroethane	Chloroform	Chloromethane	Chrysene	Cis-1,3-Dichloropropene	Dibenz(a,h)Anthracene	Dibromochloromethane	Ethyl-t-Butyl Ether (ETBE)	Ethylbenzene	Flouranthene
					Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result
20103028	12938	Meruani Residence	813 Constellation Dr.	21-MAY-2013	<1	2.2	<1		<1		<1	<1	<1	
	8897	Knudsen Residence	808 Golden Arrow St.	31-AUG-2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-MAR-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				29-SEP-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				06-DEC-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				10-AUG-2011	<1	<1	<1		<1		<1	<1	<1	
				29-AUG-2012	<1	<1	<1		<1		<1	<1	<1	
	8898	Kim Res. (fmr Schoonmaker Res.)	809 Golden Arrow St.	09-DEC-2009	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				30-MAR-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				14-JUN-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				14-OCT-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				29-AUG-2012	<1	<1	<1		<1		<1	<1	<1	
	8917	Kurbanov Residence	808 Constellation Rd.	31-AUG-2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-DEC-2009	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				09-MAR-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				11-JUN-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				29-SEP-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				06-DEC-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				10-AUG-2011	<1	<1	<1		<1		<1	<1	<1	
				28-AUG-2012	<1	<1	<1		<1		<1	<1	<1	
	8918	Kan Residence	613 Deerfield Pond Ct.	31-AUG-2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-DEC-2009	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				09-MAR-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				11-JUN-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				29-SEP-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				06-DEC-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				10-AUG-2011	<1	<1	<1		<1		<1	<1	<1	
				28-AUG-2012	<1	<1	<1		<1		<1	<1	<1	
	8937	Boggs Residence	716 Walker Rd.	03-SEP-2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-DEC-2009	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				09-MAR-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				11-JUN-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				29-SEP-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				06-DEC-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				10-AUG-2011	<1	.6	<1		<1		<1	<1	<1	
				29-AUG-2012	<1	<1	<1		<1		<1	<1	<1	
	8938	WRNS Associates	721 Walker Rd.	03-SEP-2009	<2.0	5.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-DEC-2009										
				09-MAR-2010	<2.0	6	<2.0		<2.0		<2.0	<2.0	<2.0	
				11-JUN-2010	<2.0	5.4	<2.0		<2.0		<2.0	<2.0	<2.0	
				29-SEP-2010	<2.0	5.1	<2.0		<2.0		<2.0	<2.0	<2.0	
				06-DEC-2010	<2.0	6.2	<2.0		<2.0		<2.0	<2.0	<2.0	
				10-AUG-2011	<1	5	<1		<1		<1	<1	<1	
				29-AUG-2012	<1	4.5	<1		<1		<1	<1	<1	
	9037	West Res. (fmr. Chappelear Res.)	614 Deerfiled Pond Ct.	21-SEP-2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				11-DEC-2009	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				09-MAR-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				11-JUN-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				29-SEP-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				06-DEC-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
				10-AUG-2011	<1	<1	.4		<1		<1	<1	<1	
				28-AUG-2012	<1	<1	<1		<1		<1	<1	<1	

					Flourene	Hardness	Ideno(1,2,3-cd)Pyrene	Isopropyl Ether (DIPE)	Methyl-t-Butyl Ether (MTBE)	Methylene Chloride	Naphthalene	Phenanthrene	Pyrene	Styrene
					Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result
20103028	12938	Meruani Residence	813 Constellation Dr.	21-MAY-2013				<5	<5	<1	<1			<1
	8897	Knudsen Residence	808 Golden Arrow St.	31-AUG-2009	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-MAR-2010				<2.0	<2.0	<2.0				<2.0
				29-SEP-2010				<2.0	<2.0	<2.0				<2.0
				06-DEC-2010				<2.0	<2.0	<2.0				<2.0
				10-AUG-2011				<5	<5	<1	<1			<1
				29-AUG-2012				<5	<5	<1	<1			<1
	8898	Kim Res. (fmr Schoonmaker Res.)	809 Golden Arrow St.	09-DEC-2009				<2.0	<2.0	<2.0				<2.0
				30-MAR-2010				<2.0	<2.0	<2.0				<2.0
				14-JUN-2010				<2.0	<2.0	<2.0				<2.0
				14-OCT-2010				<2.0	0.52	<2.0				<2.0
				29-AUG-2012				<5	<5	<1	<1			<1
	8917	Kurbanov Residence	808 Constellation Rd.	31-AUG-2009	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-DEC-2009				<2.0	<2.0	<2.0				<2.0
				09-MAR-2010				<2.0	<2.0	<2.0				<2.0
				11-JUN-2010				<2.0	<2.0	<2.0				<2.0
				29-SEP-2010				<2.0	<2.0	<2.0				<2.0
				06-DEC-2010				<2.0	<2.0	<2.0				<2.0
				10-AUG-2011				<5	<5	<1	<1			<1
				28-AUG-2012				<5	<5	<1	<1			<1
	8918	Kan Residence	613 Deerfield Pond Ct.	31-AUG-2009	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-DEC-2009				<2.0	<2.0	<2.0				<2.0
				09-MAR-2010				<2.0	<2.0	<2.0				<2.0
				11-JUN-2010				<2.0	<2.0	<2.0				<2.0
				29-SEP-2010				<2.0	<2.0	<2.0				<2.0
				06-DEC-2010				<2.0	<2.0	<2.0				<2.0
				10-AUG-2011				<5	<5	<1	<1			<1
				28-AUG-2012				<5	<5	<1	<1			<1
	8937	Boggs Residence	716 Walker Rd.	03-SEP-2009	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-DEC-2009				<2.0	.5	<2.0				<2.0
				09-MAR-2010				<2.0	<2.0	<2.0				<2.0
				11-JUN-2010				<2.0	<2.0	<2.0				<2.0
				29-SEP-2010				<2.0	<2.0	<2.0				<2.0
				06-DEC-2010				<2.0	<2.0	<2.0				<2.0
				10-AUG-2011				<5	<5	<1	<1			<1
				29-AUG-2012				<5	<5	<1	<1			<1
	8938	WRNS Associates	721 Walker Rd.	03-SEP-2009	<2.0	1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				09-DEC-2009		1								
				09-MAR-2010				<2.0	<2.0	<2.0				<2.0
				11-JUN-2010				<2.0	<2.0	<2.0				<2.0
				29-SEP-2010				<2.0	<2.0	<2.0				<2.0
				06-DEC-2010				<2.0	<2.0	<2.0				<2.0
				10-AUG-2011				<5	<5	<1	<1			<1
				29-AUG-2012				<5	<5	<1	<1			<1
	9037	West Res. (fmr. Chappelear Res.)	614 Deerfiled Pond Ct.	21-SEP-2009	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
				11-DEC-2009				<2.0	<2.0	<2.0				<2.0
				09-MAR-2010				<2.0	<2.0	<2.0				<2.0
				11-JUN-2010				<2.0	<2.0	<2.0				<2.0
				29-SEP-2010				<2.0	<2.0	<2.0				<2.0
				06-DEC-2010				<2.0	<2.0	<2.0				<2.0
				10-AUG-2011				<5	<5	<1	<1			<1
				28-AUG-2012				<5	<5	1.4	<1			<1

					Tert-Butanol (TBA)	Tetrachloroethene	Toluene	Trans-1,3-Dichloropropene	Trichloroethene	Vinyl Chloride	Xylenes	pH	t-Amyl Alcohol (TAA)	t-Amyl Ethyl Ether (TAEE)
					Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result
20103028	12938	Meruani Residence	813 Constellation Dr.	21-MAY-2013	<100	<1	<1	<1	<1	<1	<2.0		<10	
	8897	Knudsen Residence	808 Golden Arrow St.	31-AUG-2009	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				09-MAR-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				29-SEP-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				06-DEC-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				10-AUG-2011	<100	<1	<1	<1	<1	<1	<2.0		<10	
				29-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
	8898	Kim Res. (fmr Schoonmaker Res.)	809 Golden Arrow St.	09-DEC-2009	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				30-MAR-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				14-JUN-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				14-OCT-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				29-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
	8917	Kurbanov Residence	808 Constellation Rd.	31-AUG-2009	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				09-DEC-2009	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				09-MAR-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				11-JUN-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				29-SEP-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				06-DEC-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				10-AUG-2011	<100	<1	<1	<1	<1	<1	<2.0		<10	
				28-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
	8918	Kan Residence	613 Deerfield Pond Ct.	31-AUG-2009	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				09-DEC-2009	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				09-MAR-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				11-JUN-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				29-SEP-2010	<15.0	.58	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				06-DEC-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				10-AUG-2011	<100	.5	<1	<1	<1	<1	<2.0		<10	
				28-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
	8937	Boggs Residence	716 Walker Rd.	03-SEP-2009	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	6	<20.0	<2.0
				09-DEC-2009	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				09-MAR-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				11-JUN-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				29-SEP-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				06-DEC-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				10-AUG-2011	<100	<1	<1	<1	<1	<1	<2.0		<10	
				29-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
	8938	WRNS Associates	721 Walker Rd.	03-SEP-2009	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	5.5	<20.0	<2.0
				09-DEC-2009								5.5		
				09-MAR-2010	<15.0	11	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				11-JUN-2010	<15.0	4.2	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				29-SEP-2010	<15.0	1.8	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				06-DEC-2010	<15.0	2.7	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				10-AUG-2011	<100	.6	<1	<1	<1	<1	<2.0		<10	
				29-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
	9037	West Res. (fmr. Chappelear Res.)	614 Deerfiled Pond Ct.	21-SEP-2009	<15.0	2.4	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				11-DEC-2009	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				09-MAR-2010	<15.0	2.3	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				11-JUN-2010	<15.0	2.6	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				29-SEP-2010	<15.0	2.4	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				06-DEC-2010	<15.0	2.8	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
				10-AUG-2011	<100	<1	<1	<1	<1	<1	<2.0		<10	
				28-AUG-2012	<100	1.6	<1	<1	<1	<1	<2.0		<10	

					t-Amyl Methyl Ether (TAME)
					Ama Result
20103028	12938	Meruani Residence	813 Constellation Dr.	21-MAY-2013	<1
	8897	Knudsen Residence	808 Golden Arrow St.	31-AUG-2009	<2.0
				09-MAR-2010	<2.0
				29-SEP-2010	<2.0
				06-DEC-2010	<2.0
				10-AUG-2011	<1
				29-AUG-2012	<1
	8898	Kim Res. (fmr Schoonmaker Res.)	809 Golden Arrow St.	09-DEC-2009	<2.0
				30-MAR-2010	<2.0
				14-JUN-2010	<2.0
				14-OCT-2010	<2.0
				29-AUG-2012	<1
	8917	Kurbanov Residence	808 Constellation Rd.	31-AUG-2009	<2.0
				09-DEC-2009	<2.0
				09-MAR-2010	<2.0
				11-JUN-2010	<2.0
				29-SEP-2010	<2.0
				06-DEC-2010	<2.0
				10-AUG-2011	<1
				28-AUG-2012	<1
	8918	Kan Residence	613 Deerfield Pond Ct.	31-AUG-2009	<2.0
				09-DEC-2009	<2.0
				09-MAR-2010	<2.0
				11-JUN-2010	<2.0
				29-SEP-2010	<2.0
				06-DEC-2010	<2.0
				10-AUG-2011	<1
				28-AUG-2012	<1
	8937	Boggs Residence	716 Walker Rd.	03-SEP-2009	<2.0
				09-DEC-2009	<2.0
				09-MAR-2010	<2.0
				11-JUN-2010	<2.0
				29-SEP-2010	<2.0
				06-DEC-2010	<2.0
				10-AUG-2011	<1
				29-AUG-2012	<1
	8938	WRNS Associates	721 Walker Rd.	03-SEP-2009	<2.0
				09-DEC-2009	
				09-MAR-2010	<2.0
				11-JUN-2010	<2.0
				29-SEP-2010	<2.0
				06-DEC-2010	<2.0
				10-AUG-2011	<1
				29-AUG-2012	<1
	9037	West Res. (fmr. Chappelear Res.)	614 Deerfiled Pond Ct.	21-SEP-2009	<2.0
				11-DEC-2009	<2.0
				09-MAR-2010	<2.0
				11-JUN-2010	<2.0
				29-SEP-2010	<2.0
				06-DEC-2010	<2.0
				10-AUG-2011	<1
				28-AUG-2012	<1

				RAW									
				1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane (EDB)	1,2-Dichloroethane	1,2-Dichloroethene (total)	1,2-Dichloropropane
				Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result
9077	Pence Residence	612 Deerfield Pond Ct.	24-SEP-2009	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			14-APR-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			11-AUG-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
			28-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
9277	Kermanchi Residence	809 Constellation Dr.	21-OCT-2009	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			09-DEC-2009	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			09-MAR-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			28-SEP-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<2.0	<2.0
			06-DEC-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
			28-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
9898	Azali Residence	805 Constellation Dr.	11-AUG-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
			28-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
9899	George Residence	696 Bucks Ln	11-AUG-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
			29-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
9900	Head Residence	700 Innsbruck Ave.	11-AUG-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
			28-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
9901	Terpak Residence	804 Constellation Drive	11-AUG-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
			28-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
9917	Calic Residence	10005 Columbine Street	11-AUG-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			29-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
9918	Park Authority, Fairfax Co.	9818 Georgetown Pike	11-AUG-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
			29-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
9919	Waldroup Residence	804 Golden Arrow Street	11-AUG-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
			28-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
9920	Pan Realty	805 Golden Arrow Street	11-AUG-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
			29-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
9921	Walker Road Assoc.	719 Walker Road	11-AUG-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			29-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
9922	Lessard Residence	695 Bucks Lane	11-AUG-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
			29-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
9923	Dang Han Hoan Residence	817 Constellation Drive	11-AUG-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
			28-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
9924	Halm Residence	706 Innsbruck Avenue	11-AUG-2010	<2.0	<2.0	<2.0	<2.0	<2.0		<0.02	<2.0	<2.0	<2.0
			10-AUG-2011	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
			28-AUG-2012	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

				2-Butanone (MEK)	2-Hexanone	2-Methylnaphthalene	4-Methyl-2-Pentanone	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Benzene	Benzo(a)Anthracene
				Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result
9077	Pence Residence	612 Deerfield Pond Ct.	24-SEP-2009	<10.0	<10.0	<2.0	<10.0	<2.0	<2.0	<10.0	<2.0	<2.0	<2.0
			14-APR-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			11-AUG-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			10-AUG-2011	<10	<10		<10			<20		<1	
			28-AUG-2012	<10	<10		<10			<20		<1	
9277	Kermanchi Residence	809 Constellation Dr.	21-OCT-2009	<10.0	<10.0	<2.0	<10.0	<2.0	<2.0	<10.0	<2.0	<2.0	<2.0
			09-DEC-2009	<10.0	<10.0		<10.0			<10.0		<2.0	
			09-MAR-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			28-SEP-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			06-DEC-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			10-AUG-2011	<10	<10		<10			<20		<1	
			28-AUG-2012	<10	<10		<10			<20		<1	
9898	Azali Residence	805 Constellation Dr.	11-AUG-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			10-AUG-2011	<10	<10		<10			<20		<1	
			28-AUG-2012	<10	<10		<10			<20		<1	
9899	George Residence	696 Bucks Ln	11-AUG-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			10-AUG-2011	<10	<10		<10			<20		<1	
			29-AUG-2012	<10	<10		<10			<20		<1	
9900	Head Residence	700 Innsbruck Ave.	11-AUG-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			10-AUG-2011	<10	<10		<10			<20		<1	
			28-AUG-2012	<10	<10		<10			<20		<1	
9901	Terpak Residence	804 Constellation Drive	11-AUG-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			10-AUG-2011	<10	<10		<10			<20		<1	
			28-AUG-2012	<10	<10		<10			<20		<1	
9917	Calic Residence	10005 Columbine Street	11-AUG-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			29-AUG-2012	<10	<10		<10			<20		<1	
9918	Park Authority, Fairfax Co.	9818 Georgetown Pike	11-AUG-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			10-AUG-2011	<10	<10		<10			<20		<1	
			29-AUG-2012	<10	<10		<10			<20		<1	
9919	Waldroup Residence	804 Golden Arrow Street	11-AUG-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			10-AUG-2011	<10	<10		<10			<20		<1	
			28-AUG-2012	<10	<10		<10			<20		<1	
9920	Pan Realty	805 Golden Arrow Street	11-AUG-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			10-AUG-2011	<10	<10		<10			<20		<1	
			29-AUG-2012	<10	<10		<10			<20		<1	
9921	Walker Road Assoc.	719 Walker Road	11-AUG-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			29-AUG-2012	<10	<10		<10			<20		<1	
9922	Lessard Residence	695 Bucks Lane	11-AUG-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			10-AUG-2011	<10	<10		<10			<20		<1	
			29-AUG-2012	<10	<10		<10			<20		<1	
9923	Dang Han Hoan Residence	817 Constellation Drive	11-AUG-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			10-AUG-2011	<10	<10		<10			<20		<1	
			28-AUG-2012	<10	<10		<10			<20		<1	
9924	Halm Residence	706 Innsbruck Avenue	11-AUG-2010	<10.0	<10.0		<10.0			<10.0		<2.0	
			10-AUG-2011	<10	<10		<10			<20		<1	
			28-AUG-2012	<10	<10		<10			<20		<1	

				Benzo(a)Pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene
				Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result
9077	Pence Residence	612 Deerfield Pond Ct.	24-SEP-2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			14-APR-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			11-AUG-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			10-AUG-2011					<1	<1	<1	1.4	<1	<1
			28-AUG-2012					<1	<1	<1	<5	<1	<1
9277	Kermanchi Residence	809 Constellation Dr.	21-OCT-2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			09-DEC-2009					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			09-MAR-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			28-SEP-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			06-DEC-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			10-AUG-2011					<1	<1	<1	<5	<1	<1
			28-AUG-2012					<1	<1	<1	<5	<1	<1
9898	Azali Residence	805 Constellation Dr.	11-AUG-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			10-AUG-2011					<1	<1	<1	<5	<1	<1
			28-AUG-2012					<1	<1	<1	<5	<1	<1
9899	George Residence	696 Bucks Ln	11-AUG-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			10-AUG-2011					<1	<1	<1	<5	<1	<1
			29-AUG-2012					<1	<1	<1	<5	<1	<1
9900	Head Residence	700 Innsbruck Ave.	11-AUG-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			10-AUG-2011					<1	<1	<1	<5	<1	<1
			28-AUG-2012					<1	<1	<1	<5	<1	<1
9901	Terpak Residence	804 Constellation Drive	11-AUG-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			10-AUG-2011					<1	<1	<1	<5	<1	<1
			28-AUG-2012					<1	<1	<1	<5	<1	<1
9917	Calic Residence	10005 Columbine Street	11-AUG-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			29-AUG-2012					<1	<1	<1	<5	<1	<1
9918	Park Authority, Fairfax Co.	9818 Georgetown Pike	11-AUG-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			10-AUG-2011					<1	<1	<1	<5	<1	<1
			29-AUG-2012					<1	<1	<1	<5	<1	<1
9919	Waldroup Residence	804 Golden Arrow Street	11-AUG-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			10-AUG-2011					<1	<1	<1	<5	<1	<1
			28-AUG-2012					<1	<1	<1	<5	<1	<1
9920	Pan Realty	805 Golden Arrow Street	11-AUG-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			10-AUG-2011					<1	<1	<1	<5	<1	<1
			29-AUG-2012					<1	<1	<1	<5	<1	<1
9921	Walker Road Assoc.	719 Walker Road	11-AUG-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			29-AUG-2012					<1	<1	<1	<5	<1	<1
9922	Lessard Residence	695 Bucks Lane	11-AUG-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			10-AUG-2011					<1	<1	<1	<5	<1	<1
			29-AUG-2012					<1	<1	<1	<5	<1	<1
9923	Dang Han Hoan Residence	817 Constellation Drive	11-AUG-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			10-AUG-2011					<1	<1	<1	<5	<1	<1
			28-AUG-2012					<1	<1	<1	<5	<1	<1
9924	Halm Residence	706 Innsbruck Avenue	11-AUG-2010					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			10-AUG-2011					<1	<1	<1	<5	<1	<1
			28-AUG-2012					<1	<1	<1	<5	<1	<1

				Chloroethane	Chloroform	Chloromethane	Chrysene	Cis-1,3-Dichloropropene	Dibenz(a,h)Anthracene	Dibromochloromethane	Ethyl-t-Butyl Ether (ETBE)	Ethylbenzene	Flouranthene
				Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result
9077	Pence Residence	612 Deerfield Pond Ct.	24-SEP-2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			14-APR-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
			11-AUG-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
			10-AUG-2011	<1	.3	<1		<1		<1	<1	<1	
			28-AUG-2012	<1	<1	<1		<1		<1	<1	<1	
9277	Kermanchi Residence	809 Constellation Dr.	21-OCT-2009	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			09-DEC-2009	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
			09-MAR-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
			28-SEP-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
			06-DEC-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
			10-AUG-2011	<1	<1	<1		<1		<1	<1	<1	
			28-AUG-2012	<1	<1	<1		<1		<1	<1	<1	
9898	Azali Residence	805 Constellation Dr.	11-AUG-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
			10-AUG-2011	<1	<1	<1		<1		<1	<1	<1	
			28-AUG-2012	<1	<1	<1		<1		<1	<1	<1	
9899	George Residence	696 Bucks Ln	11-AUG-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
			10-AUG-2011	<1	<1	<1		<1		<1	<1	<1	
			29-AUG-2012	<1	<1	<1		<1		<1	<1	<1	
9900	Head Residence	700 Innsbruck Ave.	11-AUG-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
			10-AUG-2011	<1	<1	.4		<1		<1	<1	<1	
			28-AUG-2012	<1	<1	<1		<1		<1	<1	<1	
9901	Terpak Residence	804 Constellation Drive	11-AUG-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
			10-AUG-2011	<1	<1	<1		<1		<1	<1	<1	
			28-AUG-2012	<1	<1	<1		<1		<1	<1	<1	
9917	Calic Residence	10005 Columbine Street	11-AUG-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
			29-AUG-2012	<1	<1	<1		<1		<1	<1	<1	
9918	Park Authority, Fairfax Co.	9818 Georgetown Pike	11-AUG-2010	<2.0	6.6	<2.0		<2.0		<2.0	<2.0	<2.0	
			10-AUG-2011	<1	5.2	1.4		<1		<1	<1	<1	
			29-AUG-2012	<1	4.2	<1		<1		<1	<1	<1	
9919	Waldroup Residence	804 Golden Arrow Street	11-AUG-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
			10-AUG-2011	<1	<1	<1		<1		<1	<1	<1	
			28-AUG-2012	<1	<1	<1		<1		<1	<1	<1	
9920	Pan Realty	805 Golden Arrow Street	11-AUG-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
			10-AUG-2011	<1	.3	<1		<1		<1	<1	<1	
			29-AUG-2012	<1	<1	<1		<1		<1	<1	<1	
9921	Walker Road Assoc.	719 Walker Road	11-AUG-2010	<2.0	4	<2.0		<2.0		<2.0	<2.0	<2.0	
			29-AUG-2012	<1	2.8	<1		<1		<1	<1	<1	
9922	Lessard Residence	695 Bucks Lane	11-AUG-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
			10-AUG-2011	<1	<1	<1		<1		<1	<1	<1	
			29-AUG-2012	<1	<1	<1		<1		<1	<1	<1	
9923	Dang Han Hoan Residence	817 Constellation Drive	11-AUG-2010	<2.0	<2.0	<2.0		<2.0		<2.0	<2.0	<2.0	
			10-AUG-2011	<1	<1	<1		<1		<1	<1	<1	
			28-AUG-2012	<1	<1	<1		<1		<1	<1	<1	
9924	Halm Residence	706 Innsbruck Avenue	11-AUG-2010	<2.0	3.4	<2.0		<2.0		<2.0	<2.0	<2.0	
			10-AUG-2011	<1	3.9	<1		<1		<1	<1	<1	
			28-AUG-2012	<1	2.8	<1		<1		<1	<1	<1	

				Flourene	Hardness	Ideno(1,2,3-cd)Pyrene	Isopropyl Ether (DIPE)	Methyl-t-Butyl Ether (MTBE)	Methylene Chloride	Naphthalene	Phenanthrene	Pyrene	Styrene
				Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result
9077	Pence Residence	612 Deerfield Pond Ct.	24-SEP-2009	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			14-APR-2010				<2.0	<2.0	<2.0				<2.0
			11-AUG-2010				<2.0	<2.0	<2.0				<2.0
			10-AUG-2011				<5	<5	<1	<1			<1
			28-AUG-2012				<5	<5	<1	<1			<1
9277	Kermanchi Residence	809 Constellation Dr.	21-OCT-2009	<2.0	6	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
			09-DEC-2009				<2.0	<2.0	<2.0				<2.0
			09-MAR-2010				<2.0	<2.0	<2.0				<2.0
			28-SEP-2010				<2.0	<2.0	<2.0				<2.0
			06-DEC-2010				<2.0	<2.0	<2.0				<2.0
			10-AUG-2011				<5	<5	<1	<1			<1
			28-AUG-2012				<5	<5	<1	<1			<1
9898	Azali Residence	805 Constellation Dr.	11-AUG-2010				<2.0	<2.0	<2.0				<2.0
			10-AUG-2011				<5	<5	<1	<1			<1
			28-AUG-2012				<5	<5	<1	<1			<1
9899	George Residence	696 Bucks Ln	11-AUG-2010		3		<2.0	<2.0	<2.0				<2.0
			10-AUG-2011				<5	<5	<1	<1			<1
			29-AUG-2012				<5	<5	<1	<1			<1
9900	Head Residence	700 Innsbruck Ave.	11-AUG-2010				<2.0	<2.0	<2.0				<2.0
			10-AUG-2011				<5	<5	<1	<1			<1
			28-AUG-2012				<5	<5	<1	<1			<1
9901	Terpak Residence	804 Constellation Drive	11-AUG-2010				<2.0	<2.0	<2.0				<2.0
			10-AUG-2011				<5	<5	<1	<1			<1
			28-AUG-2012				<5	<5	<1	<1			<1
9917	Calic Residence	10005 Columbine Street	11-AUG-2010		3		<2.0	<2.0	<2.0				<2.0
			29-AUG-2012				<5	<5	<1	<1			<1
9918	Park Authority, Fairfax Co.	9818 Georgetown Pike	11-AUG-2010		3		<2.0	<2.0	<2.0				<2.0
			10-AUG-2011				<5	<5	<1	<1			<1
			29-AUG-2012				<5	<5	<1	<1			<1
9919	Waldroup Residence	804 Golden Arrow Street	11-AUG-2010		4		<2.0	<2.0	<2.0				<2.0
			10-AUG-2011				<5	<5	<1	<1			<1
			28-AUG-2012				<5	<5	<1	<1			<1
9920	Pan Realty	805 Golden Arrow Street	11-AUG-2010				<2.0	<2.0	<2.0				<2.0
			10-AUG-2011				<5	<5	<1	<1			<1
			29-AUG-2012				<5	<5	<1	<1			<1
9921	Walker Road Assoc.	719 Walker Road	11-AUG-2010		3		<2.0	<2.0	<2.0				<2.0
			29-AUG-2012				<5	<5	<1	<1			<1
9922	Lessard Residence	695 Bucks Lane	11-AUG-2010		6		<2.0	<2.0	<2.0				<2.0
			10-AUG-2011				<5	<5	<1	<1			<1
			29-AUG-2012				<5	<5	<1	<1			<1
9923	Dang Han Hoan Residence	817 Constellation Drive	11-AUG-2010				<2.0	<2.0	<2.0				<2.0
			10-AUG-2011				<5	<5	<1	<1			<1
			28-AUG-2012				<5	<5	<1	<1			<1
9924	Halm Residence	706 Innsbruck Avenue	11-AUG-2010		4		<2.0	<2.0	<2.0				<2.0
			10-AUG-2011				<5	<5	<1	<1			<1
			28-AUG-2012				<5	<5	<1	<1			<1

				Tert-Butanol (TBA)	Tetrachloroethene	Toluene	Trans-1,3-Dichloropropene	Trichloroethene	Vinyl Chloride	Xylenes	pH	t-Amyl Alcohol (TAA)	t-Amyl Ethyl Ether (TAEE)
				Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result	Ama Result
9077	Pence Residence	612 Deerfield Pond Ct.	24-SEP-2009	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
			14-APR-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
			11-AUG-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
			10-AUG-2011	<100	<1	<1	<1	<1	<1	<2.0		<10	
			28-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
9277	Kermanchi Residence	809 Constellation Dr.	21-OCT-2009	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	6.5	<20.0	<2.0
			09-DEC-2009	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
			09-MAR-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
			28-SEP-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
			06-DEC-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
			10-AUG-2011	<100	<1	<1	<1	<1	<1	<2.0		<10	
			28-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
9898	Azali Residence	805 Constellation Dr.	11-AUG-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
			10-AUG-2011	<100	<1	<1	<1	<1	<1	<2.0		<10	
			28-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
9899	George Residence	696 Bucks Ln	11-AUG-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	6.5	<20.0	<2.0
			10-AUG-2011	<100	<1	<1	<1	<1	<1	<2.0		<10	
			29-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
9900	Head Residence	700 Innsbruck Ave.	11-AUG-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
			10-AUG-2011	<100	<1	<1	<1	<1	<1	<2.0		<10	
			28-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
9901	Terpak Residence	804 Constellation Drive	11-AUG-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<20.0	<2.0
			10-AUG-2011	<100	<1	<1	<1	<1	<1	<2.0		<10	
			28-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
9917	Calic Residence	10005 Columbine Street	11-AUG-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	6.8	<20.0	<2.0
			29-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
9918	Park Authority, Fairfax Co.	9818 Georgetown Pike	11-AUG-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	6.8	<20.0	<2.0
			10-AUG-2011	<100	<1	<1	<1	<1	<1	<2.0		<10	
			29-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
9919	Waldroup Residence	804 Golden Arrow Street	11-AUG-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	7.2	<20.0	<2.0
			10-AUG-2011	<100	<1	<1	<1	<1	<1	<2.0		<10	
			28-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
9920	Pan Realty	805 Golden Arrow Street	11-AUG-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	6.8	<20.0	<2.0
			10-AUG-2011	<100	<1	<1	<1	<1	<1	<2.0		<10	
			29-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
9921	Walker Road Assoc.	719 Walker Road	11-AUG-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	6.5	<20.0	<2.0
			29-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
9922	Lessard Residence	695 Bucks Lane	11-AUG-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	7.5	<20.0	<2.0
			10-AUG-2011	<100	<1	<1	<1	<1	<1	<2.0		<10	
			29-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
9923	Dang Han Hoan Residence	817 Constellation Drive	11-AUG-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	7.5	<20.0	<2.0
			10-AUG-2011	<100	<1	<1	<1	<1	<1	<2.0		<10	
			28-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	
9924	Halm Residence	706 Innsbruck Avenue	11-AUG-2010	<15.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	6.5	<20.0	<2.0
			10-AUG-2011	<100	<1	<1	<1	<1	<1	<2.0		<10	
			28-AUG-2012	<100	<1	<1	<1	<1	<1	<2.0		<10	

				t-Amyl Methyl Ether (TAME)
				Ama Result
9077	Pence Residence	612 Deerfield Pond Ct.	24-SEP-2009	<2.0
			14-APR-2010	<2.0
			11-AUG-2010	<2.0
			10-AUG-2011	<1
			28-AUG-2012	<1
9277	Kermanchi Residence	809 Constellation Dr.	21-OCT-2009	<2.0
			09-DEC-2009	<2.0
			09-MAR-2010	<2.0
			28-SEP-2010	<2.0
			06-DEC-2010	<2.0
			10-AUG-2011	<1
			28-AUG-2012	<1
9898	Azali Residence	805 Constellation Dr.	11-AUG-2010	<2.0
			10-AUG-2011	<1
			28-AUG-2012	<1
9899	George Residence	696 Bucks Ln	11-AUG-2010	<2.0
			10-AUG-2011	<1
			29-AUG-2012	<1
9900	Head Residence	700 Innsbruck Ave.	11-AUG-2010	<2.0
			10-AUG-2011	<1
			28-AUG-2012	<1
9901	Terpak Residence	804 Constellation Drive	11-AUG-2010	<2.0
			10-AUG-2011	<1
			28-AUG-2012	<1
9917	Calic Residence	10005 Columbine Street	11-AUG-2010	<2.0
			29-AUG-2012	<1
9918	Park Authority, Fairfax Co.	9818 Georgetown Pike	11-AUG-2010	<2.0
			10-AUG-2011	<1
			29-AUG-2012	<1
9919	Waldroup Residence	804 Golden Arrow Street	11-AUG-2010	<2.0
			10-AUG-2011	<1
			28-AUG-2012	<1
9920	Pan Realty	805 Golden Arrow Street	11-AUG-2010	<2.0
			10-AUG-2011	<1
			29-AUG-2012	<1
9921	Walker Road Assoc.	719 Walker Road	11-AUG-2010	<2.0
			29-AUG-2012	<1
9922	Lessard Residence	695 Bucks Lane	11-AUG-2010	<2.0
			10-AUG-2011	<1
			29-AUG-2012	<1
9923	Dang Han Hoan Residence	817 Constellation Drive	11-AUG-2010	<2.0
			10-AUG-2011	<1
			28-AUG-2012	<1
9924	Halm Residence	706 Innsbruck Avenue	11-AUG-2010	<2.0
			10-AUG-2011	<1
			28-AUG-2012	<1

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

22 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: PARK AUTHORITY, FAIRFAX CO.

Enclosed are the results of analyses for samples received by the laboratory on 08/14/13 12:41.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081420-01	Nonpotable Water	08/14/13 09:40	08/14/13 12:41
FIELD BLANK		3081420-02	Nonpotable Water	08/14/13 09:40	08/14/13 12:41

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

RAW

3081420-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 14:05	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 14:05	ECM	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 14:05	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 14:05	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Chloroform	**3.9**	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 14:05	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 14:05	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

RAW

3081420-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*98 %*		*08/16/13*	*08/16/13 14:05*		
Surrogate: Toluene-d8		*88-110*	*103 %*		*08/16/13*	*08/16/13 14:05*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*100 %*		*08/16/13*	*08/16/13 14:05*		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

FIELD BLANK

3081420-02 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 16:42	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 16:42	ECM	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 16:42	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 16:42	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 16:42	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 16:42	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

FIELD BLANK

3081420-02 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Xylenes, Total	**1.4**	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	J
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*98 %*		*08/16/13*	*08/16/13 16:42*		
Surrogate: Toluene-d8		*88-110*	*102 %*		*08/16/13*	*08/16/13 16:42*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*100 %*		*08/16/13*	*08/16/13 16:42*		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*49.34*		ug/L	*50.0*		*99*	*80-120*			
Surrogate: Toluene-d8	*51.20*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.10*		ug/L	*50.0*		*100*	*86-115*			
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	3.9	2.0	ug/L	5.00		78	50-150			
Ethyl tert-butyl ether (ETBE)	4.2	2.0	ug/L	5.00		83	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	4.8	2.0	ug/L	5.00		96	50-150			
Bromodichloromethane	5.1	2.0	ug/L	5.00		102	50-150			
Bromoform	4.6	2.0	ug/L	5.00		92	50-150			
Bromomethane	4.5	2.0	ug/L	5.00		91	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	4.7	2.0	ug/L	5.00		94	50-150			
Carbon tetrachloride	4.4	2.0	ug/L	5.00		88	50-150			
Chlorobenzene	5.1	2.0	ug/L	5.00		102	50-150			
Chloroethane	5.0	2.0	ug/L	5.00		100	50-150			
Chloroform	5.1	2.0	ug/L	5.00		103	50-150			
Chloromethane	4.3	2.0	ug/L	5.00		85	50-150			
Dibromochloromethane	5.0	2.0	ug/L	5.00		99	50-150			
1,2-Dibromo-3-chloropropane	3.3	2.0	ug/L	5.00		65	50-150			
1,2-Dibromoethane (EDB)	4.7	2.0	ug/L	5.00		94	50-150			
1,1-Dichloroethane	4.8	2.0	ug/L	5.00		97	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		90	50-150			
cis-1,2-Dichloroethene	4.6	2.0	ug/L	5.00		91	50-150			
trans-1,2-Dichloroethene	4.5	2.0	ug/L	5.00		89	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	4.9	2.0	ug/L	5.00		97	50-150			
cis-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		82	50-150			
trans-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		83	50-150			
Ethylbenzene	5.0	2.0	ug/L	5.00		99	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	3.9	2.0	ug/L	5.00		79	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.4	2.0	ug/L	5.00		87	50-150			
Naphthalene	3.2	2.0	ug/L	5.00		65	50-150			
Styrene	3.8	2.0	ug/L	5.00		77	50-150			
1,1,2,2-Tetrachloroethane	5.4	2.0	ug/L	5.00		108	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		96	50-150			
Toluene	4.8	2.0	ug/L	5.00		97	50-150			
1,1,1-Trichloroethane	4.4	2.0	ug/L	5.00		89	50-150			
1,1,2-Trichloroethane	4.8	2.0	ug/L	5.00		96	50-150			
Trichloroethene	4.6	2.0	ug/L	5.00		92	50-150			
Vinyl chloride	3.6	2.0	ug/L	5.00		73	50-150			
o-Xylene	4.0	2.0	ug/L	5.00		80	50-150			
m- & p-Xylenes	9.1	2.0	ug/L	10.0		91	50-150			
Surrogate: 1,2-Dichloroethane-d4	*50.04*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*51.02*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*51.10*		ug/L	*50.0*		*102*	*86-115*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

Notes and Definitions

J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): Rusty Stoner

P.O. Number:

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Park Authority, Fairfax Co.																		
PC# 20103028																		
[redacted]			x															
			x															
			x															
			x															
RAW	8/14/13	9:40 AM	x			3	1											3081420-01
Field Blank	8/14/13	9:40 AM	X			3	1											3081420-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Rusty Stoner	8/14/13	K. McAdoo			
(Printed) Rusty Stoner	12:41 pm	(Printed) Karla McAdoo	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	Page ____ of ____

MSS-F001-09/12

@ 3.0 on ice

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

03 September 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: Nokesville Veterinary Clinic

Enclosed are the results of analyses for samples received by the laboratory on 08/29/13 13:47.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3082906-01	Water	08/29/13 09:30	08/29/13 13:47

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

RAW

3082906-01 (Water)
Sample Date: 08/29/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/30/13	08/30/13 15:58	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Acetone	ND	ug/L	10.0	1	08/30/13	08/30/13 15:58	ECM	
Benzene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Bromoform	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Bromomethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/30/13	08/30/13 15:58	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/30/13	08/30/13 15:58	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Chloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Chloroform	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Chloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/30/13	08/30/13 15:58	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/30/13	08/30/13 15:58	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

RAW

3082906-01 (Water)
Sample Date: 08/29/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Styrene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Toluene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*95 %*		*08/30/13*	*08/30/13 15:58*		
Surrogate: Toluene-d8		*88-110*	*101 %*		*08/30/13*	*08/30/13 15:58*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*95 %*		*08/30/13*	*08/30/13 15:58*		
SEMIVOLATILE ORGANICS BY EPA METHOD 8270D (GC/MS)								
Acenaphthene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Acenaphthylene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Anthracene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Benzo[a]anthracene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Benzo[b]fluoranthene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Benzo[k]fluoranthene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Benzo[ghi]perylene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Benzo[a]pyrene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Chrysene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Dibenzo[a,h]anthracene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Fluoranthene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Fluorene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Indeno[1,2,3-cd]pyrene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
2-Methylnaphthalene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Naphthalene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Phenanthrene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Pyrene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Surrogate: 2-Fluorophenol		*21-110*	*49 %*		*08/29/13*	*08/30/13 18:32*		
Surrogate: Phenol-d5		*10-110*	*34 %*		*08/29/13*	*08/30/13 18:32*		
Surrogate: Nitrobenzene-d5		*35-114*	*77 %*		*08/29/13*	*08/30/13 18:32*		
Surrogate: 2,4,6-Tribromophenol		*10-123*	*85 %*		*08/29/13*	*08/30/13 18:32*		

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

RAW

3082906-01 (Water)
Sample Date: 08/29/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
SEMIVOLATILE ORGANICS BY EPA METHOD 8270D (GC/MS) (continued)								
Surrogate: 2-Fluorobiphenyl		*43-116*	*75 %*		*08/29/13*	*08/30/13 18:32*		
Surrogate: Terphenyl-d14		*33-141*	*68 %*		*08/29/13*	*08/30/13 18:32*		

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Blank (B308230-BLK1)				Prepared & Analyzed: 08/30/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Blank (B308230-BLK1)				Prepared & Analyzed: 08/30/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*46.79*		ug/L	*50.0*		*94*	*80-120*			
Surrogate: Toluene-d8	*50.33*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.22*		ug/L	*50.0*		*92*	*86-115*			
LCS (B308230-BS1)				Prepared & Analyzed: 08/30/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	4.6	2.0	ug/L	5.00		92	50-150			
Ethyl tert-butyl ether (ETBE)	4.9	2.0	ug/L	5.00		98	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	5.1	2.0	ug/L	5.00		101	50-150			
Bromodichloromethane	5.2	2.0	ug/L	5.00		104	50-150			
Bromoform	4.5	2.0	ug/L	5.00		90	50-150			
Bromomethane	5.9	2.0	ug/L	5.00		119	50-150			
2-Butanone (MEK)	6.3	10.0	ug/L	10.0		63	50-150			J
tert-Butanol (TBA)	21.3	15.0	ug/L	25.0		85	50-150			
Carbon disulfide	5.6	2.0	ug/L	5.00		111	50-150			
Carbon tetrachloride	5.3	2.0	ug/L	5.00		106	50-150			
Chlorobenzene	5.0	2.0	ug/L	5.00		99	50-150			
Chloroethane	5.1	2.0	ug/L	5.00		102	50-150			
Chloroform	5.1	2.0	ug/L	5.00		101	50-150			
Chloromethane	5.0	2.0	ug/L	5.00		100	50-150			
Dibromochloromethane	5.1	2.0	ug/L	5.00		102	50-150			
1,2-Dibromo-3-chloropropane	4.4	2.0	ug/L	5.00		88	50-150			
1,2-Dibromoethane (EDB)	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethane	5.1	2.0	ug/L	5.00		102	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		101	50-150			
1,1-Dichloroethene	5.8	2.0	ug/L	5.00		116	50-150			
cis-1,2-Dichloroethene	4.7	2.0	ug/L	5.00		94	50-150			
trans-1,2-Dichloroethene	5.4	2.0	ug/L	5.00		107	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
LCS (B308230-BS1)				Prepared & Analyzed: 08/30/13						
1,2-Dichloropropane	5.4	2.0	ug/L	5.00		107	50-150			
cis-1,3-Dichloropropene	5.0	2.0	ug/L	5.00		99	50-150			
trans-1,3-Dichloropropene	4.8	2.0	ug/L	5.00		96	50-150			
Ethylbenzene	4.6	2.0	ug/L	5.00		93	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	5.0	2.0	ug/L	5.00		101	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	10.0	10.0	ug/L	10.0		100	50-150			
Methyl tert-butyl ether (MTBE)	5.0	2.0	ug/L	5.00		99	50-150			
Naphthalene	4.5	2.0	ug/L	5.00		89	50-150			
Styrene	4.1	2.0	ug/L	5.00		83	50-150			
1,1,2,2-Tetrachloroethane	4.7	2.0	ug/L	5.00		94	50-150			
Tetrachloroethene	5.3	2.0	ug/L	5.00		105	50-150			
Toluene	5.1	2.0	ug/L	5.00		102	50-150			
1,1,1-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
1,1,2-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Trichloroethene	5.1	2.0	ug/L	5.00		103	50-150			
Vinyl chloride	4.8	2.0	ug/L	5.00		97	50-150			
o-Xylene	4.9	2.0	ug/L	5.00		97	50-150			
m- & p-Xylenes	9.0	2.0	ug/L	10.0		90	50-150			
Surrogate: 1,2-Dichloroethane-d4	*46.96*		ug/L	*50.0*		*94*	*80-120*			
Surrogate: Toluene-d8	*50.63*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*48.83*		ug/L	*50.0*		*98*	*86-115*			
Matrix Spike (B308230-MS1)		**Source: 3083009-02**		Prepared & Analyzed: 08/30/13						
Benzene	49.3	2.0	ug/L	50.0	ND	99	76-127			
Chlorobenzene	51.8	2.0	ug/L	50.0	ND	104	75-130			
1,1-Dichloroethene	49.5	2.0	ug/L	50.0	ND	99	61-145			
Toluene	49.7	2.0	ug/L	50.0	ND	99	76-125			
Trichloroethene	48.7	2.0	ug/L	50.0	ND	97	71-120			
Surrogate: 1,2-Dichloroethane-d4	*46.73*		ug/L	*50.0*		*93*	*80-120*			
Surrogate: Toluene-d8	*49.78*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.20*		ug/L	*50.0*		*92*	*86-115*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Matrix Spike Dup (B308230-MSD1)		**Source: 3083009-02**		Prepared & Analyzed: 08/30/13						
Benzene	47.2	2.0	ug/L	50.0	ND	94	76-127	4	11	
Chlorobenzene	45.0	2.0	ug/L	50.0	ND	90	75-130	14	13	
1,1-Dichloroethene	49.0	2.0	ug/L	50.0	ND	98	61-145	1	14	
Toluene	46.4	2.0	ug/L	50.0	ND	93	76-125	7	13	
Trichloroethene	45.7	2.0	ug/L	50.0	ND	91	71-120	6	14	
Surrogate: 1,2-Dichloroethane-d4	*46.65*		ug/L	*50.0*		*93*	*80-120*			
Surrogate: Toluene-d8	*49.56*		ug/L	*50.0*		*99*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*45.86*		ug/L	*50.0*		*92*	*86-115*			

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

SEMIVOLATILE ORGANICS BY EPA METHOD 8270D (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308222 - 3510-GCMS(Sep Funnel)										
Blank (B308222-BLK1)				Prepared: 08/29/13 Analyzed: 08/30/13						
Acenaphthene	ND	2.0	ug/L							
Acenaphthylene	ND	2.0	ug/L							
Anthracene	ND	2.0	ug/L							
Benzo[a]anthracene	ND	2.0	ug/L							
Benzo[b]fluoranthene	ND	2.0	ug/L							
Benzo[k]fluoranthene	ND	2.0	ug/L							
Benzo[ghi]perylene	ND	2.0	ug/L							
Benzo[a]pyrene	ND	2.0	ug/L							
Chrysene	ND	2.0	ug/L							
Dibenzo[a,h]anthracene	ND	2.0	ug/L							
Fluoranthene	ND	2.0	ug/L							
Fluorene	ND	2.0	ug/L							
Indeno[1,2,3-cd]pyrene	ND	2.0	ug/L							
2-Methylnaphthalene	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Phenanthrene	ND	2.0	ug/L							
Pyrene	ND	2.0	ug/L							
Surrogate: 2-Fluorophenol	*48.3*		ug/L	*100*		*48*	*21-110*			
Surrogate: Phenol-d5	*33.3*		ug/L	*100*		*33*	*10-110*			
Surrogate: Nitrobenzene-d5	*39.3*		ug/L	*50.0*		*79*	*35-114*			
Surrogate: 2,4,6-Tribromophenol	*86.0*		ug/L	*100*		*86*	*10-123*			
Surrogate: 2-Fluorobiphenyl	*38.0*		ug/L	*50.0*		*76*	*43-116*			
Surrogate: Terphenyl-d14	*35.9*		ug/L	*50.0*		*72*	*33-141*			
LCS (B308222-BS1)				Prepared: 08/29/13 Analyzed: 08/30/13						
Acenaphthene	23.6	2.0	ug/L	25.0		94	70-130			
Acenaphthylene	24.8	2.0	ug/L	25.0		99	70-130			
Anthracene	23.4	2.0	ug/L	25.0		93	70-130			
Benzo[a]anthracene	22.7	2.0	ug/L	25.0		91	70-130			
Benzo[b]fluoranthene	26.2	2.0	ug/L	25.0		105	70-130			
Benzo[k]fluoranthene	26.0	2.0	ug/L	25.0		104	70-130			
Benzo[ghi]perylene	13.8	2.0	ug/L	25.0		55	70-130			
Benzo[a]pyrene	23.0	2.0	ug/L	25.0		92	70-130			
Chrysene	24.1	2.0	ug/L	25.0		96	70-130			
Dibenzo[a,h]anthracene	15.1	2.0	ug/L	25.0		61	70-130			
Fluoranthene	21.5	2.0	ug/L	25.0		86	70-130			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
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www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

SEMIVOLATILE ORGANICS BY EPA METHOD 8270D (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308222 - 3510-GCMS(Sep Funnel)										
LCS (B308222-BS1)				Prepared: 08/29/13 Analyzed: 08/30/13						
Fluorene	23.5	2.0	ug/L	25.0		94	70-130			
Indeno[1,2,3-cd]pyrene	14.8	2.0	ug/L	25.0		59	70-130			
2-Methylnaphthalene	ND	2.0	ug/L				70-130			
Naphthalene	23.4	2.0	ug/L	25.0		94	70-130			
Phenanthrene	24.3	2.0	ug/L	25.0		97	70-130			
Pyrene	20.1	2.0	ug/L	25.0		81	70-130			
Surrogate: 2-Fluorophenol	*46.6*		ug/L	*100*		*47*	*21-110*			
Surrogate: Phenol-d5	*32.7*		ug/L	*100*		*33*	*10-110*			
Surrogate: Nitrobenzene-d5	*38.8*		ug/L	*50.0*		*78*	*35-114*			
Surrogate: 2,4,6-Tribromophenol	*83.2*		ug/L	*100*		*83*	*10-123*			
Surrogate: 2-Fluorobiphenyl	*38.8*		ug/L	*50.0*		*78*	*43-116*			
Surrogate: Terphenyl-d14	*33.7*		ug/L	*50.0*		*67*	*33-141*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

Notes and Definitions

J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): ED

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410-247-7600 • Fax 410-247-7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Nokesville Veterinary Clinic																		
PC # 20043120																		
PREPM			x															
			x															
			x															
			x															
RAW	8-29-13	9:30	x			5	X			X								3082906-01

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
ED Plummer	8-29-13				
(Printed) Ed Plummer	1347	(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	4.7°C, ice Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

30 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: MACINTOSH RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/27/13 15:20.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PREPM		3082705-01	Water	08/23/13 09:00	08/27/13 15:20
RAW		3082705-02	Water	08/23/13 09:05	08/27/13 15:20

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

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VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

PREPM

3082705-01 (Water)
Sample Date: 08/23/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/28/13	08/28/13 15:05	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Acetone	ND	ug/L	10.0	1	08/28/13	08/28/13 15:05	ECM	
Benzene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Bromoform	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Bromomethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/28/13	08/28/13 15:05	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/28/13	08/28/13 15:05	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Chloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Chloroform	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Chloromethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/28/13	08/28/13 15:05	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/28/13	08/28/13 15:05	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

PREPM

3082705-01 (Water)
Sample Date: 08/23/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Styrene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Toluene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*95 %*		*08/28/13*	*08/28/13 15:05*		
Surrogate: Toluene-d8		*88-110*	*97 %*		*08/28/13*	*08/28/13 15:05*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*92 %*		*08/28/13*	*08/28/13 15:05*		

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Will Brewington, Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

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VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

RAW

3082705-02 (Water)
Sample Date: 08/23/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/28/13	08/28/13 15:40	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Acetone	ND	ug/L	10.0	1	08/28/13	08/28/13 15:40	ECM	
Benzene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Bromoform	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Bromomethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/28/13	08/28/13 15:40	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/28/13	08/28/13 15:40	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Chloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Chloroform	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Chloromethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/28/13	08/28/13 15:40	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/28/13	08/28/13 15:40	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Naphthalene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Styrene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

RAW

3082705-02 (Water)
Sample Date: 08/23/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Tetrachloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Toluene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*94 %*		*08/28/13*	*08/28/13 15:40*		
Surrogate: Toluene-d8		*88-110*	*98 %*		*08/28/13*	*08/28/13 15:40*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*95 %*		*08/28/13*	*08/28/13 15:40*		

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VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308213 - GCMS-WATER-VOLATILES										
Blank (B308213-BLK1)				Prepared & Analyzed: 08/28/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Analytical Results

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VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308213 - GCMS-WATER-VOLATILES										
Blank (B308213-BLK1)				Prepared & Analyzed: 08/28/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*46.10*		ug/L	*50.0*		*92*	*80-120*			
Surrogate: Toluene-d8	*48.97*		ug/L	*50.0*		*98*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.61*		ug/L	*50.0*		*93*	*86-115*			
LCS (B308213-BS1)				Prepared & Analyzed: 08/28/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	4.6	2.0	ug/L	5.00		92	50-150			
Ethyl tert-butyl ether (ETBE)	4.4	2.0	ug/L	5.00		89	50-150			
Acetone	ND	5.0	ug/L	10.0			50-150			
Benzene	4.7	2.0	ug/L	5.00		95	50-150			
Bromodichloromethane	4.8	2.0	ug/L	5.00		96	50-150			
Bromoform	4.3	2.0	ug/L	5.00		86	50-150			
Bromomethane	4.7	2.0	ug/L	5.00		95	50-150			
2-Butanone (MEK)	5.7	5.0	ug/L	10.0		57	50-150			
tert-Butanol (TBA)	26.0	15.0	ug/L	25.0		104	50-150			
Carbon disulfide	5.0	2.0	ug/L	5.00		100	50-150			
Carbon tetrachloride	4.6	2.0	ug/L	5.00		91	50-150			
Chlorobenzene	4.6	2.0	ug/L	5.00		92	50-150			
Chloroethane	4.9	2.0	ug/L	5.00		98	50-150			
Chloroform	4.9	2.0	ug/L	5.00		98	50-150			
Chloromethane	4.4	2.0	ug/L	5.00		87	50-150			
Dibromochloromethane	4.4	2.0	ug/L	5.00		88	50-150			
1,2-Dibromo-3-chloropropane	4.5	2.0	ug/L	5.00		90	50-150			
1,2-Dibromoethane (EDB)	4.6	2.0	ug/L	5.00		92	50-150			
1,1-Dichloroethane	4.7	2.0	ug/L	5.00		93	50-150			
1,2-Dichloroethane	4.7	2.0	ug/L	5.00		94	50-150			
1,1-Dichloroethene	5.4	2.0	ug/L	5.00		109	50-150			
cis-1,2-Dichloroethene	4.6	2.0	ug/L	5.00		91	50-150			
trans-1,2-Dichloroethene	5.2	2.0	ug/L	5.00		104	50-150			

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Analytical Results

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VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308213 - GCMS-WATER-VOLATILES										
LCS (B308213-BS1)				Prepared & Analyzed: 08/28/13						
1,2-Dichloropropane	4.6	2.0	ug/L	5.00		91	50-150			
cis-1,3-Dichloropropene	4.3	2.0	ug/L	5.00		86	50-150			
trans-1,3-Dichloropropene	4.2	2.0	ug/L	5.00		83	50-150			
Ethylbenzene	4.2	2.0	ug/L	5.00		84	50-150			
2-Hexanone	5.3	5.0	ug/L	10.0		53	50-150			
Diisopropyl ether (DIPE)	4.3	2.0	ug/L	5.00		85	50-150			
Methylene chloride	5.4	2.0	ug/L	5.00		107	0-200			
4-Methyl-2-pentanone	8.8	10.0	ug/L	10.0		88	50-150			J
Methyl tert-butyl ether (MTBE)	5.1	2.0	ug/L	5.00		101	50-150			
Naphthalene	4.5	2.0	ug/L	5.00		90	50-150			
Styrene	4.1	2.0	ug/L	5.00		81	50-150			
1,1,2,2-Tetrachloroethane	4.4	2.0	ug/L	5.00		87	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		96	50-150			
Toluene	4.5	2.0	ug/L	5.00		89	50-150			
1,1,1-Trichloroethane	4.9	2.0	ug/L	5.00		97	50-150			
1,1,2-Trichloroethane	4.9	2.0	ug/L	5.00		99	50-150			
Trichloroethene	4.7	2.0	ug/L	5.00		94	50-150			
Vinyl chloride	4.3	2.0	ug/L	5.00		85	50-150			
o-Xylene	4.3	2.0	ug/L	5.00		86	50-150			
m- & p-Xylenes	8.6	2.0	ug/L	10.0		86	50-150			
Surrogate: 1,2-Dichloroethane-d4	*44.14*		ug/L	*50.0*		*88*	*80-120*			
Surrogate: Toluene-d8	*49.29*		ug/L	*50.0*		*99*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*47.34*		ug/L	*50.0*		*95*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

Notes and Definitions

J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID:15100

Sampler(s): SH

P.O. Number:

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270						Preservative/Remarks	MSS Lab ID
MacIntosh Residence																	
PC# 20063093																	
PREPM	8-23	900	x			3	X										3082705-01
			x														
			x														
			x														
RAW	823	905	x			3	X										3082705-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
SH	8/27 3:20	[signature]			
(Printed) Scott Herbert		(Printed) William Brewer	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks
			☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	4.8°C
(Printed)		(Printed)		Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

21 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: KNUDSON RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/15/13 13:50.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KNUDSON RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:15

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081506-02	Water	08/15/13 09:00	08/15/13 13:50

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KNUDSON RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:15

RAW

3081506-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 18:41	CMK	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:41	CMK	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 18:41	CMK	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 18:41	CMK	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:41	CMK	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:41	CMK	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KNUDSON RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:15

RAW

3081506-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*109 %*		*08/16/13*	*08/16/13 18:41*		
Surrogate: Toluene-d8		*88-110*	*96 %*		*08/16/13*	*08/16/13 18:41*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*89 %*		*08/16/13*	*08/16/13 18:41*		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KNUDSON RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:15

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KNUDSON RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:15

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*53.19*		ug/L	*50.0*		*106*	*80-120*			
Surrogate: Toluene-d8	*49.99*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.56*		ug/L	*50.0*		*93*	*86-115*			
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	5.2	2.0	ug/L	5.00		103	50-150			
Ethyl tert-butyl ether (ETBE)	5.1	2.0	ug/L	5.00		102	50-150			
Acetone	11.9	10.0	ug/L	10.0		119	50-150			
Benzene	5.3	2.0	ug/L	5.00		107	50-150			
Bromodichloromethane	5.6	2.0	ug/L	5.00		113	50-150			
Bromoform	5.0	2.0	ug/L	5.00		100	50-150			
Bromomethane	5.6	2.0	ug/L	5.00		111	50-150			
2-Butanone (MEK)	6.8	5.0	ug/L	10.0		68	50-150			
tert-Butanol (TBA)	27.7	15.0	ug/L	25.0		111	50-150			
Carbon disulfide	5.7	2.0	ug/L	5.00		113	50-150			
Carbon tetrachloride	5.8	2.0	ug/L	5.00		117	50-150			
Chlorobenzene	5.2	2.0	ug/L	5.00		104	50-150			
Chloroethane	5.5	2.0	ug/L	5.00		110	50-150			
Chloroform	5.8	2.0	ug/L	5.00		116	50-150			
Chloromethane	4.2	2.0	ug/L	5.00		83	50-150			
Dibromochloromethane	5.5	2.0	ug/L	5.00		110	50-150			
1,2-Dibromo-3-chloropropane	5.4	2.0	ug/L	5.00		108	50-150			
1,2-Dibromoethane (EDB)	4.9	2.0	ug/L	5.00		98	50-150			
1,1-Dichloroethane	5.7	2.0	ug/L	5.00		114	50-150			
1,2-Dichloroethane	5.8	2.0	ug/L	5.00		115	50-150			
1,1-Dichloroethene	6.4	2.0	ug/L	5.00		129	50-150			
cis-1,2-Dichloroethene	5.2	2.0	ug/L	5.00		105	50-150			
trans-1,2-Dichloroethene	6.1	2.0	ug/L	5.00		122	50-150			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KNUDSON RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:15

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	5.5	2.0	ug/L	5.00		111	50-150			
cis-1,3-Dichloropropene	4.9	2.0	ug/L	5.00		98	50-150			
trans-1,3-Dichloropropene	4.8	2.0	ug/L	5.00		96	50-150			
Ethylbenzene	4.5	2.0	ug/L	5.00		90	50-150			
2-Hexanone	11.3	10.0	ug/L	10.0		113	50-150			
Diisopropyl ether (DIPE)	5.1	2.0	ug/L	5.00		101	50-150			
Methylene chloride	6.6	2.0	ug/L	5.00		132	0-200			
4-Methyl-2-pentanone	10.3	10.0	ug/L	10.0		103	50-150			
Methyl tert-butyl ether (MTBE)	5.5	2.0	ug/L	5.00		110	50-150			
Naphthalene	4.3	2.0	ug/L	5.00		86	50-150			
Styrene	3.9	2.0	ug/L	5.00		79	50-150			
1,1,2,2-Tetrachloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Tetrachloroethene	5.1	2.0	ug/L	5.00		102	50-150			
Toluene	5.0	2.0	ug/L	5.00		100	50-150			
1,1,1-Trichloroethane	5.8	2.0	ug/L	5.00		116	50-150			
1,1,2-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Trichloroethene	5.5	2.0	ug/L	5.00		110	50-150			
Vinyl chloride	5.0	2.0	ug/L	5.00		100	50-150			
o-Xylene	4.5	2.0	ug/L	5.00		90	50-150			
m- & p-Xylenes	8.8	2.0	ug/L	10.0		88	50-150			
Surrogate: 1,2-Dichloroethane-d4	*52.27*		ug/L	*50.0*		*105*	*80-120*			
Surrogate: Toluene-d8	*49.98*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*47.21*		ug/L	*50.0*		*94*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KNUDSON RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:15

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID:15100

Sampler(s): SH

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Knudson Residence																		
PC# 20103028																		
PREPM			x															
			x															
			x															
Field Blank	815	805	x			3	X											3081506-01
RAW	815	900	x			3	X											-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
SH	815				
(Printed) Scott Herbert	1500	(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	4.5°C Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

21 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: KIM RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/15/13 13:50.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KIM RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:18

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081509-02	Water	08/15/13 10:15	08/15/13 13:50

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KIM RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:18

RAW

3081509-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 19:46	CMK	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 19:46	CMK	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 19:46	CMK	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 19:46	CMK	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 19:46	CMK	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 19:46	CMK	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KIM RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:18

RAW

3081509-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*110 %*		*08/16/13*	*08/16/13 19:46*		
Surrogate: Toluene-d8		*88-110*	*98 %*		*08/16/13*	*08/16/13 19:46*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*91 %*		*08/16/13*	*08/16/13 19:46*		

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KIM RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:18

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KIM RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:18

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*53.19*		ug/L	*50.0*		*106*	*80-120*			
Surrogate: Toluene-d8	*49.99*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.56*		ug/L	*50.0*		*93*	*86-115*			
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	5.2	2.0	ug/L	5.00		103	50-150			
Ethyl tert-butyl ether (ETBE)	5.1	2.0	ug/L	5.00		102	50-150			
Acetone	11.9	10.0	ug/L	10.0		119	50-150			
Benzene	5.3	2.0	ug/L	5.00		107	50-150			
Bromodichloromethane	5.6	2.0	ug/L	5.00		113	50-150			
Bromoform	5.0	2.0	ug/L	5.00		100	50-150			
Bromomethane	5.6	2.0	ug/L	5.00		111	50-150			
2-Butanone (MEK)	6.8	5.0	ug/L	10.0		68	50-150			
tert-Butanol (TBA)	27.7	15.0	ug/L	25.0		111	50-150			
Carbon disulfide	5.7	2.0	ug/L	5.00		113	50-150			
Carbon tetrachloride	5.8	2.0	ug/L	5.00		117	50-150			
Chlorobenzene	5.2	2.0	ug/L	5.00		104	50-150			
Chloroethane	5.5	2.0	ug/L	5.00		110	50-150			
Chloroform	5.8	2.0	ug/L	5.00		116	50-150			
Chloromethane	4.2	2.0	ug/L	5.00		83	50-150			
Dibromochloromethane	5.5	2.0	ug/L	5.00		110	50-150			
1,2-Dibromo-3-chloropropane	5.4	2.0	ug/L	5.00		108	50-150			
1,2-Dibromoethane (EDB)	4.9	2.0	ug/L	5.00		98	50-150			
1,1-Dichloroethane	5.7	2.0	ug/L	5.00		114	50-150			
1,2-Dichloroethane	5.8	2.0	ug/L	5.00		115	50-150			
1,1-Dichloroethene	6.4	2.0	ug/L	5.00		129	50-150			
cis-1,2-Dichloroethene	5.2	2.0	ug/L	5.00		105	50-150			
trans-1,2-Dichloroethene	6.1	2.0	ug/L	5.00		122	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KIM RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:18

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	5.5	2.0	ug/L	5.00		111	50-150			
cis-1,3-Dichloropropene	4.9	2.0	ug/L	5.00		98	50-150			
trans-1,3-Dichloropropene	4.8	2.0	ug/L	5.00		96	50-150			
Ethylbenzene	4.5	2.0	ug/L	5.00		90	50-150			
2-Hexanone	11.3	10.0	ug/L	10.0		113	50-150			
Diisopropyl ether (DIPE)	5.1	2.0	ug/L	5.00		101	50-150			
Methylene chloride	6.6	2.0	ug/L	5.00		132	0-200			
4-Methyl-2-pentanone	10.3	10.0	ug/L	10.0		103	50-150			
Methyl tert-butyl ether (MTBE)	5.5	2.0	ug/L	5.00		110	50-150			
Naphthalene	4.3	2.0	ug/L	5.00		86	50-150			
Styrene	3.9	2.0	ug/L	5.00		79	50-150			
1,1,2,2-Tetrachloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Tetrachloroethene	5.1	2.0	ug/L	5.00		102	50-150			
Toluene	5.0	2.0	ug/L	5.00		100	50-150			
1,1,1-Trichloroethane	5.8	2.0	ug/L	5.00		116	50-150			
1,1,2-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Trichloroethene	5.5	2.0	ug/L	5.00		110	50-150			
Vinyl chloride	5.0	2.0	ug/L	5.00		100	50-150			
o-Xylene	4.5	2.0	ug/L	5.00		90	50-150			
m- & p-Xylenes	8.8	2.0	ug/L	10.0		88	50-150			
Surrogate: 1,2-Dichloroethane-d4	*52.27*		ug/L	*50.0*		*105*	*80-120*			
Surrogate: Toluene-d8	*49.98*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*47.21*		ug/L	*50.0*		*94*	*86-115*			

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KIM RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:18

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA	Project Manager: Rusty Stoner
Project Name: VA Project	Project ID:15100
Sampler(s): SH	P.O. Number:

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Kim Residence																		
PC# 20103028																		
PREPM			x															
			x															
			x															
Field Blank	815	1020	x			3	X											3081509-01
RAW	815	1015	x			3	2											-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
SH	815	[signature]			
(Printed) Scott Hubert	1:50	(Printed) [illegible]	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

21 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: KAN RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/14/13 12:46.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KAN RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:05

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081501-01	Nonpotable Water	08/14/13 11:10	08/14/13 12:46

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KAN RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:05

RAW

3081501-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 18:40	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:40	ECM	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 18:40	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 18:40	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:40	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:40	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KAN RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:05

RAW

3081501-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*100 %*		*08/16/13*	*08/16/13 18:40*		
Surrogate: Toluene-d8		*88-110*	*102 %*		*08/16/13*	*08/16/13 18:40*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*101 %*		*08/16/13*	*08/16/13 18:40*		

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KAN RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:05

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KAN RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:05

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*49.34*		ug/L	*50.0*		*99*	*80-120*			
Surrogate: Toluene-d8	*51.20*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.10*		ug/L	*50.0*		*100*	*86-115*			
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	3.9	2.0	ug/L	5.00		78	50-150			
Ethyl tert-butyl ether (ETBE)	4.2	2.0	ug/L	5.00		83	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	4.8	2.0	ug/L	5.00		96	50-150			
Bromodichloromethane	5.1	2.0	ug/L	5.00		102	50-150			
Bromoform	4.6	2.0	ug/L	5.00		92	50-150			
Bromomethane	4.5	2.0	ug/L	5.00		91	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	4.7	2.0	ug/L	5.00		94	50-150			
Carbon tetrachloride	4.4	2.0	ug/L	5.00		88	50-150			
Chlorobenzene	5.1	2.0	ug/L	5.00		102	50-150			
Chloroethane	5.0	2.0	ug/L	5.00		100	50-150			
Chloroform	5.1	2.0	ug/L	5.00		103	50-150			
Chloromethane	4.3	2.0	ug/L	5.00		85	50-150			
Dibromochloromethane	5.0	2.0	ug/L	5.00		99	50-150			
1,2-Dibromo-3-chloropropane	3.3	2.0	ug/L	5.00		65	50-150			
1,2-Dibromoethane (EDB)	4.7	2.0	ug/L	5.00		94	50-150			
1,1-Dichloroethane	4.8	2.0	ug/L	5.00		97	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		90	50-150			
cis-1,2-Dichloroethene	4.6	2.0	ug/L	5.00		91	50-150			
trans-1,2-Dichloroethene	4.5	2.0	ug/L	5.00		89	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KAN RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:05

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	4.9	2.0	ug/L	5.00		97	50-150			
cis-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		82	50-150			
trans-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		83	50-150			
Ethylbenzene	5.0	2.0	ug/L	5.00		99	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	3.9	2.0	ug/L	5.00		79	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.4	2.0	ug/L	5.00		87	50-150			
Naphthalene	3.2	2.0	ug/L	5.00		65	50-150			
Styrene	3.8	2.0	ug/L	5.00		77	50-150			
1,1,2,2-Tetrachloroethane	5.4	2.0	ug/L	5.00		108	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		96	50-150			
Toluene	4.8	2.0	ug/L	5.00		97	50-150			
1,1,1-Trichloroethane	4.4	2.0	ug/L	5.00		89	50-150			
1,1,2-Trichloroethane	4.8	2.0	ug/L	5.00		96	50-150			
Trichloroethene	4.6	2.0	ug/L	5.00		92	50-150			
Vinyl chloride	3.6	2.0	ug/L	5.00		73	50-150			
o-Xylene	4.0	2.0	ug/L	5.00		80	50-150			
m- & p-Xylenes	9.1	2.0	ug/L	10.0		91	50-150			
Surrogate: 1,2-Dichloroethane-d4	*50.04*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*51.02*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*51.10*		ug/L	*50.0*		*102*	*86-115*			

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KAN RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:05

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410-247-7600 • Fax 410-247-7602
labman@mdspectral.com

Matrix Codes: NW (nonpotable water)
PW (potable water)

Company Name: STONER

Project Manager: Rusty Stoner

Project Name: VA Proj

Project ID: 15150

Sampler(s): Rusty Stoner

P.O. Number:

Analysis Requested: 8260

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	Preservative: 1+1 HCL, H_2SO_4, Methanol, $Na_2S_2O_3$, $NaHCO_3$	Field pH, Residual Chlorine, QC Request, Trip Blank, Field Blank	MSS Lab ID
KAW									
RAW	8/14		✓			3 ✓			3081501-01
Field Blank	8/14		✓			3 ✓			-02

Relinquished by (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
(Printed)	8/14/13 1246	(Printed) Karla McAdoo	(Printed)		(Printed)

Relinquished by (Signature)	Date/Time	Received by Lab: (Signature)
(Printed)		(Printed)

Turn Around Time:
- ☐ Normal (7 day)
- ☐ 5 day
- ☐ 4 day
- ☐ 3 day
- ☐ Rush (2 day)
- ☐ Next Day
- ☐ Other: _____
- ☐ Specific Due Date: _____

Lab Use:
Temp: 3.0c
- ☑ Received on Ice
- ☑ Received same day
- ☑ Preservation Appropriate

Delivery Method:
- Courier
- Client
- UPS
- FedEx
- USPS
- Other:

Special Instructions/QC Requirements & Comments:

Sample Disposal:
- ☐ Return to Client
- ☐ Disposal by lab
- ☐ Archive for _____ days

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

21 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: BOGGS RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/14/13 12:41.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: BOGGS RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:04

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081422-01	Nonpotable Water	08/14/13 12:10	08/14/13 12:41

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Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: BOGGS RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:04

RAW

3081422-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 16:02	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 16:02	ECM	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 16:02	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 16:02	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 16:02	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 16:02	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: BOGGS RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:04

RAW

3081422-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*99 %*		*08/16/13*	*08/16/13 16:02*		
Surrogate: Toluene-d8		*88-110*	*101 %*		*08/16/13*	*08/16/13 16:02*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*97 %*		*08/16/13*	*08/16/13 16:02*		

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Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: BOGGS RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:04

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: BOGGS RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:04

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*49.34*		ug/L	*50.0*		*99*	*80-120*			
Surrogate: Toluene-d8	*51.20*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.10*		ug/L	*50.0*		*100*	*86-115*			
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	3.9	2.0	ug/L	5.00		78	50-150			
Ethyl tert-butyl ether (ETBE)	4.2	2.0	ug/L	5.00		83	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	4.8	2.0	ug/L	5.00		96	50-150			
Bromodichloromethane	5.1	2.0	ug/L	5.00		102	50-150			
Bromoform	4.6	2.0	ug/L	5.00		92	50-150			
Bromomethane	4.5	2.0	ug/L	5.00		91	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	4.7	2.0	ug/L	5.00		94	50-150			
Carbon tetrachloride	4.4	2.0	ug/L	5.00		88	50-150			
Chlorobenzene	5.1	2.0	ug/L	5.00		102	50-150			
Chloroethane	5.0	2.0	ug/L	5.00		100	50-150			
Chloroform	5.1	2.0	ug/L	5.00		103	50-150			
Chloromethane	4.3	2.0	ug/L	5.00		85	50-150			
Dibromochloromethane	5.0	2.0	ug/L	5.00		99	50-150			
1,2-Dibromo-3-chloropropane	3.3	2.0	ug/L	5.00		65	50-150			
1,2-Dibromoethane (EDB)	4.7	2.0	ug/L	5.00		94	50-150			
1,1-Dichloroethane	4.8	2.0	ug/L	5.00		97	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		90	50-150			
cis-1,2-Dichloroethene	4.6	2.0	ug/L	5.00		91	50-150			
trans-1,2-Dichloroethene	4.5	2.0	ug/L	5.00		89	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: BOGGS RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:04

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	4.9	2.0	ug/L	5.00		97	50-150			
cis-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		82	50-150			
trans-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		83	50-150			
Ethylbenzene	5.0	2.0	ug/L	5.00		99	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	3.9	2.0	ug/L	5.00		79	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.4	2.0	ug/L	5.00		87	50-150			
Naphthalene	3.2	2.0	ug/L	5.00		65	50-150			
Styrene	3.8	2.0	ug/L	5.00		77	50-150			
1,1,2,2-Tetrachloroethane	5.4	2.0	ug/L	5.00		108	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		96	50-150			
Toluene	4.8	2.0	ug/L	5.00		97	50-150			
1,1,1-Trichloroethane	4.4	2.0	ug/L	5.00		89	50-150			
1,1,2-Trichloroethane	4.8	2.0	ug/L	5.00		96	50-150			
Trichloroethene	4.6	2.0	ug/L	5.00		92	50-150			
Vinyl chloride	3.6	2.0	ug/L	5.00		73	50-150			
o-Xylene	4.0	2.0	ug/L	5.00		80	50-150			
m- & p-Xylenes	9.1	2.0	ug/L	10.0		91	50-150			
Surrogate: 1,2-Dichloroethane-d4	*50.04*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*51.02*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*51.10*		ug/L	*50.0*		*102*	*86-115*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: BOGGS RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:04

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID:15100

Sampler(s): Rusty Stoner

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Boggs Residence																		
PC# 20103028																		
~~BDEPM~~			x															
			x															
			x															
			x															
RAW	8/14/13	12:10 PM	x			3	1											3081422-01
Field Blank	8/14/13	12:10 PM	X			3	1											3081422-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
(Printed) Rusty Stoner	8/14/13 12:41PM	(Printed) Kurla McAdoo	(Printed)		(Printed)
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks	
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	Page ____ of ____	

MSS-F001-09/12

* 3.0 on ice

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

23 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: WRNS ASSOCIATES

Enclosed are the results of analyses for samples received by the laboratory on 08/14/13 18:15.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081424-01	Nonpotable Water	08/14/13 10:10	08/14/13 18:15
FIELD BLANK		3081424-02	Nonpotable Water	08/14/13 10:10	08/14/13 18:15

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

RAW

3081424-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 18:01	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:01	ECM	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 18:01	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 18:01	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Chloroform	**5.1**	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:01	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:01	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

RAW

3081424-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*95 %*		*08/16/13*	*08/16/13 18:01*		
Surrogate: Toluene-d8		*88-110*	*101 %*		*08/16/13*	*08/16/13 18:01*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*100 %*		*08/16/13*	*08/16/13 18:01*		

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

FIELD BLANK

3081424-02 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/19/13	08/19/13 17:55	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Acetone	ND	ug/L	10.0	1	08/19/13	08/19/13 17:55	ECM	
Benzene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Bromoform	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Bromomethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/19/13	08/19/13 17:55	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/19/13	08/19/13 17:55	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Chloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Chloroform	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Chloromethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/19/13	08/19/13 17:55	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/19/13	08/19/13 17:55	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Naphthalene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Styrene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

FIELD BLANK

3081424-02 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Tetrachloroethene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Toluene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Xylenes, Total	**1.2**	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	J
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*103 %*		*08/19/13*	*08/19/13 17:55*		
Surrogate: Toluene-d8		*88-110*	*104 %*		*08/19/13*	*08/19/13 17:55*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*103 %*		*08/19/13*	*08/19/13 17:55*		

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
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VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*49.34*		ug/L	*50.0*		*99*	*80-120*			
Surrogate: Toluene-d8	*51.20*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.10*		ug/L	*50.0*		*100*	*86-115*			
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	3.9	2.0	ug/L	5.00		78	50-150			
Ethyl tert-butyl ether (ETBE)	4.2	2.0	ug/L	5.00		83	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	4.8	2.0	ug/L	5.00		96	50-150			
Bromodichloromethane	5.1	2.0	ug/L	5.00		102	50-150			
Bromoform	4.6	2.0	ug/L	5.00		92	50-150			
Bromomethane	4.5	2.0	ug/L	5.00		91	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	4.7	2.0	ug/L	5.00		94	50-150			
Carbon tetrachloride	4.4	2.0	ug/L	5.00		88	50-150			
Chlorobenzene	5.1	2.0	ug/L	5.00		102	50-150			
Chloroethane	5.0	2.0	ug/L	5.00		100	50-150			
Chloroform	5.1	2.0	ug/L	5.00		103	50-150			
Chloromethane	4.3	2.0	ug/L	5.00		85	50-150			
Dibromochloromethane	5.0	2.0	ug/L	5.00		99	50-150			
1,2-Dibromo-3-chloropropane	3.3	2.0	ug/L	5.00		65	50-150			
1,2-Dibromoethane (EDB)	4.7	2.0	ug/L	5.00		94	50-150			
1,1-Dichloroethane	4.8	2.0	ug/L	5.00		97	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		90	50-150			
cis-1,2-Dichloroethene	4.6	2.0	ug/L	5.00		91	50-150			
trans-1,2-Dichloroethene	4.5	2.0	ug/L	5.00		89	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	4.9	2.0	ug/L	5.00		97	50-150			
cis-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		82	50-150			
trans-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		83	50-150			
Ethylbenzene	5.0	2.0	ug/L	5.00		99	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	3.9	2.0	ug/L	5.00		79	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.4	2.0	ug/L	5.00		87	50-150			
Naphthalene	3.2	2.0	ug/L	5.00		65	50-150			
Styrene	3.8	2.0	ug/L	5.00		77	50-150			
1,1,2,2-Tetrachloroethane	5.4	2.0	ug/L	5.00		108	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		96	50-150			
Toluene	4.8	2.0	ug/L	5.00		97	50-150			
1,1,1-Trichloroethane	4.4	2.0	ug/L	5.00		89	50-150			
1,1,2-Trichloroethane	4.8	2.0	ug/L	5.00		96	50-150			
Trichloroethene	4.6	2.0	ug/L	5.00		92	50-150			
Vinyl chloride	3.6	2.0	ug/L	5.00		73	50-150			
o-Xylene	4.0	2.0	ug/L	5.00		80	50-150			
m- & p-Xylenes	9.1	2.0	ug/L	10.0		91	50-150			
Surrogate: 1,2-Dichloroethane-d4	*50.04*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*51.02*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*51.10*		ug/L	*50.0*		*102*	*86-115*			
Batch B308133 - GCMS-WATER-VOLATILES										
Blank (B308133-BLK1)				Prepared & Analyzed: 08/19/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
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VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308133 - GCMS-WATER-VOLATILES										
Blank (B308133-BLK1)				Prepared & Analyzed: 08/19/13						
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*51.52*		ug/L	*50.0*		*103*	*80-120*			
Surrogate: Toluene-d8	*52.41*		ug/L	*50.0*		*105*	*88-110*			

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
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VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308133 - GCMS-WATER-VOLATILES										
Blank (B308133-BLK1)				Prepared & Analyzed: 08/19/13						
Surrogate: 4-Bromofluorobenzene	*52.51*		ug/L	*50.0*		*105*	*86-115*			
LCS (B308133-BS1)				Prepared & Analyzed: 08/19/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	4.3	2.0	ug/L	5.00		86	50-150			
Ethyl tert-butyl ether (ETBE)	4.5	2.0	ug/L	5.00		90	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	5.1	2.0	ug/L	5.00		101	50-150			
Bromodichloromethane	5.3	2.0	ug/L	5.00		105	50-150			
Bromoform	5.1	2.0	ug/L	5.00		102	50-150			
Bromomethane	4.3	2.0	ug/L	5.00		86	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	20.7	15.0	ug/L	25.0		83	50-150			
Carbon disulfide	4.8	2.0	ug/L	5.00		96	50-150			
Carbon tetrachloride	4.7	2.0	ug/L	5.00		93	50-150			
Chlorobenzene	5.7	2.0	ug/L	5.00		115	50-150			
Chloroethane	4.6	2.0	ug/L	5.00		93	50-150			
Chloroform	5.4	2.0	ug/L	5.00		108	50-150			
Chloromethane	4.5	2.0	ug/L	5.00		89	50-150			
Dibromochloromethane	5.3	2.0	ug/L	5.00		106	50-150			
1,2-Dibromo-3-chloropropane	4.9	2.0	ug/L	5.00		98	50-150			
1,2-Dibromoethane (EDB)	5.1	2.0	ug/L	5.00		101	50-150			
1,1-Dichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
1,2-Dichloroethane	5.3	2.0	ug/L	5.00		105	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		89	50-150			
cis-1,2-Dichloroethene	5.0	2.0	ug/L	5.00		100	50-150			
trans-1,2-Dichloroethene	4.9	2.0	ug/L	5.00		99	50-150			
1,2-Dichloropropane	5.1	2.0	ug/L	5.00		101	50-150			
cis-1,3-Dichloropropene	4.3	2.0	ug/L	5.00		87	50-150			
trans-1,3-Dichloropropene	4.2	2.0	ug/L	5.00		85	50-150			
Ethylbenzene	5.0	2.0	ug/L	5.00		100	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	4.0	2.0	ug/L	5.00		80	50-150			
Methylene chloride	6.1	2.0	ug/L	5.00		123	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.7	2.0	ug/L	5.00		94	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308133 - GCMS-WATER-VOLATILES										
LCS (B308133-BS1)				Prepared & Analyzed: 08/19/13						
Naphthalene	3.9	2.0	ug/L	5.00		79	50-150			
Styrene	4.3	2.0	ug/L	5.00		86	50-150			
1,1,2,2-Tetrachloroethane	5.4	2.0	ug/L	5.00		108	50-150			
Tetrachloroethene	5.1	2.0	ug/L	5.00		102	50-150			
Toluene	5.2	2.0	ug/L	5.00		105	50-150			
1,1,1-Trichloroethane	5.1	2.0	ug/L	5.00		102	50-150			
1,1,2-Trichloroethane	5.7	2.0	ug/L	5.00		115	50-150			
Trichloroethene	5.0	2.0	ug/L	5.00		99	50-150			
Vinyl chloride	3.6	2.0	ug/L	5.00		73	50-150			
o-Xylene	4.3	2.0	ug/L	5.00		85	50-150			
m- & p-Xylenes	9.6	2.0	ug/L	10.0		96	50-150			
Surrogate: 1,2-Dichloroethane-d4	*51.80*		ug/L	*50.0*		*104*	*80-120*			
Surrogate: Toluene-d8	*50.72*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*51.53*		ug/L	*50.0*		*103*	*86-115*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

Notes and Definitions

J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): Rusty Stoner

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
WRNS Associates																		
PC# 20103028																		
[redacted]			x															
			x															
			x															
			x															
RAW	8/14/13	10:10 AM	x			3	1											3081424-01
Field Blank	8/14/13	10:10 AM	X			3	1											3081424-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Rusty Stoner	8/14/13	K. McAdoo			
(Printed) Rusty Stoner	12:4pm	(Printed) Karla McAdoo	(Printed)		(Printed)
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks	
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	Page ____ of ____	

MSS-F001-09/12

3.0 on ice

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

04 September 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: KERMANCHI RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/30/13 09:45.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KERMANCHI RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:25

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3083008-01	Water	08/28/13 08:30	08/30/13 09:45

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KERMANCHI RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:25

RAW

3083008-01 (Water)
Sample Date: 08/28/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/30/13	08/30/13 18:44	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Acetone	ND	ug/L	10.0	1	08/30/13	08/30/13 18:44	ECM	
Benzene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Bromoform	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Bromomethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/30/13	08/30/13 18:44	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/30/13	08/30/13 18:44	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Chloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Chloroform	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Chloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/30/13	08/30/13 18:44	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/30/13	08/30/13 18:44	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KERMANCHI RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:25

RAW

3083008-01 (Water)
Sample Date: 08/28/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Styrene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Toluene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*97 %*		*08/30/13*	*08/30/13 18:44*		
Surrogate: Toluene-d8		*88-110*	*100 %*		*08/30/13*	*08/30/13 18:44*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*96 %*		*08/30/13*	*08/30/13 18:44*		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KERMANCHI RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:25

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Blank (B308230-BLK1)				Prepared & Analyzed: 08/30/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KERMANCHI RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:25

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Blank (B308230-BLK1)				Prepared & Analyzed: 08/30/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*46.79*		ug/L	*50.0*		*94*	*80-120*			
Surrogate: Toluene-d8	*50.33*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.22*		ug/L	*50.0*		*92*	*86-115*			
LCS (B308230-BS1)				Prepared & Analyzed: 08/30/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	4.6	2.0	ug/L	5.00		92	50-150			
Ethyl tert-butyl ether (ETBE)	4.9	2.0	ug/L	5.00		98	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	5.1	2.0	ug/L	5.00		101	50-150			
Bromodichloromethane	5.2	2.0	ug/L	5.00		104	50-150			
Bromoform	4.5	2.0	ug/L	5.00		90	50-150			
Bromomethane	5.9	2.0	ug/L	5.00		119	50-150			
2-Butanone (MEK)	6.3	10.0	ug/L	10.0		63	50-150			J
tert-Butanol (TBA)	21.3	15.0	ug/L	25.0		85	50-150			
Carbon disulfide	5.6	2.0	ug/L	5.00		111	50-150			
Carbon tetrachloride	5.3	2.0	ug/L	5.00		106	50-150			
Chlorobenzene	5.0	2.0	ug/L	5.00		99	50-150			
Chloroethane	5.1	2.0	ug/L	5.00		102	50-150			
Chloroform	5.1	2.0	ug/L	5.00		101	50-150			
Chloromethane	5.0	2.0	ug/L	5.00		100	50-150			
Dibromochloromethane	5.1	2.0	ug/L	5.00		102	50-150			
1,2-Dibromo-3-chloropropane	4.4	2.0	ug/L	5.00		88	50-150			
1,2-Dibromoethane (EDB)	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethane	5.1	2.0	ug/L	5.00		102	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		101	50-150			
1,1-Dichloroethene	5.8	2.0	ug/L	5.00		116	50-150			
cis-1,2-Dichloroethene	4.7	2.0	ug/L	5.00		94	50-150			
trans-1,2-Dichloroethene	5.4	2.0	ug/L	5.00		107	50-150			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KERMANCHI RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:25

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
LCS (B308230-BS1)				Prepared & Analyzed: 08/30/13						
1,2-Dichloropropane	5.4	2.0	ug/L	5.00		107	50-150			
cis-1,3-Dichloropropene	5.0	2.0	ug/L	5.00		99	50-150			
trans-1,3-Dichloropropene	4.8	2.0	ug/L	5.00		96	50-150			
Ethylbenzene	4.6	2.0	ug/L	5.00		93	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	5.0	2.0	ug/L	5.00		101	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	10.0	10.0	ug/L	10.0		100	50-150			
Methyl tert-butyl ether (MTBE)	5.0	2.0	ug/L	5.00		99	50-150			
Naphthalene	4.5	2.0	ug/L	5.00		89	50-150			
Styrene	4.1	2.0	ug/L	5.00		83	50-150			
1,1,2,2-Tetrachloroethane	4.7	2.0	ug/L	5.00		94	50-150			
Tetrachloroethene	5.3	2.0	ug/L	5.00		105	50-150			
Toluene	5.1	2.0	ug/L	5.00		102	50-150			
1,1,1-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
1,1,2-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Trichloroethene	5.1	2.0	ug/L	5.00		103	50-150			
Vinyl chloride	4.8	2.0	ug/L	5.00		97	50-150			
o-Xylene	4.9	2.0	ug/L	5.00		97	50-150			
m- & p-Xylenes	9.0	2.0	ug/L	10.0		90	50-150			
Surrogate: 1,2-Dichloroethane-d4	*46.96*		ug/L	*50.0*		*94*	*80-120*			
Surrogate: Toluene-d8	*50.63*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*48.83*		ug/L	*50.0*		*98*	*86-115*			
Matrix Spike (B308230-MS1)		**Source: 3083009-02**		Prepared & Analyzed: 08/30/13						
Benzene	49.3	2.0	ug/L	50.0	ND	99	76-127			
Chlorobenzene	51.8	2.0	ug/L	50.0	ND	104	75-130			
1,1-Dichloroethene	49.5	2.0	ug/L	50.0	ND	99	61-145			
Toluene	49.7	2.0	ug/L	50.0	ND	99	76-125			
Trichloroethene	48.7	2.0	ug/L	50.0	ND	97	71-120			
Surrogate: 1,2-Dichloroethane-d4	*46.73*		ug/L	*50.0*		*93*	*80-120*			
Surrogate: Toluene-d8	*49.78*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.20*		ug/L	*50.0*		*92*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KERMANCHI RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:25

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Matrix Spike Dup (B308230-MSD1)		**Source: 3083009-02**		Prepared & Analyzed: 08/30/13						
Benzene	47.2	2.0	ug/L	50.0	ND	94	76-127	4	11	
Chlorobenzene	45.0	2.0	ug/L	50.0	ND	90	75-130	14	13	
1,1-Dichloroethene	49.0	2.0	ug/L	50.0	ND	98	61-145	1	14	
Toluene	46.4	2.0	ug/L	50.0	ND	93	76-125	7	13	
Trichloroethene	45.7	2.0	ug/L	50.0	ND	91	71-120	6	14	
Surrogate: 1,2-Dichloroethane-d4	*46.65*		ug/L	*50.0*		*93*	*80-120*			
Surrogate: Toluene-d8	*49.56*		ug/L	*50.0*		*99*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*45.86*		ug/L	*50.0*		*92*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KERMANCHI RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:25

Notes and Definitions

J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): Rusty Stoner

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270	Preservative/Remarks	MSS Lab ID
Kermanchi Residence												
PC# 20103028												
~~[illegible]~~			x									
			x									
			x									
			x									
RAW	8/28/13	8:30 AM	x			3	1					3083008-01
Field Blank	8/28/13	8:38 AM	X			3	1					3083008-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Rusty Stoner	8/30 9:45	[signature]			
(Printed) Rusty Stoner		(Printed) S Hamone	(Printed)		(Printed)
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks	
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	3.5°C on Ice	

Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

22 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: GEORGE RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/14/13 12:41.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081421-01	Nonpotable Water	08/14/13 09:10	08/14/13 12:41
FIELD BLANK		3081421-02	Nonpotable Water	08/14/13 09:10	08/14/13 12:41

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

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VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

RAW

3081421-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 14:45	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 14:45	ECM	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 14:45	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 14:45	ECM	
Carbon disulfide	**0.6**	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	J
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 14:45	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 14:45	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	

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Analytical Results

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VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

RAW

3081421-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*100 %*		*08/16/13*	*08/16/13 14:45*		
Surrogate: Toluene-d8		*88-110*	*103 %*		*08/16/13*	*08/16/13 14:45*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*98 %*		*08/16/13*	*08/16/13 14:45*		

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Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

FIELD BLANK

3081421-02 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/20/13	08/20/13 16:59	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Acetone	ND	ug/L	10.0	1	08/20/13	08/20/13 16:59	ECM	
Benzene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Bromoform	**0.8**	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	J
Bromomethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/20/13	08/20/13 16:59	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/20/13	08/20/13 16:59	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Chloroethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Chloroform	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Chloromethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/20/13	08/20/13 16:59	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/20/13	08/20/13 16:59	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Naphthalene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Styrene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	

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Analytical Results

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VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

FIELD BLANK

3081421-02 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Tetrachloroethene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Toluene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Xylenes, Total	**1.4**	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	J
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*100 %*		*08/20/13*	*08/20/13 16:59*		
Surrogate: Toluene-d8		*88-110*	*103 %*		*08/20/13*	*08/20/13 16:59*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*97 %*		*08/20/13*	*08/20/13 16:59*		

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Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*49.34*		ug/L	*50.0*		*99*	*80-120*			
Surrogate: Toluene-d8	*51.20*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.10*		ug/L	*50.0*		*100*	*86-115*			
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	3.9	2.0	ug/L	5.00		78	50-150			
Ethyl tert-butyl ether (ETBE)	4.2	2.0	ug/L	5.00		83	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	4.8	2.0	ug/L	5.00		96	50-150			
Bromodichloromethane	5.1	2.0	ug/L	5.00		102	50-150			
Bromoform	4.6	2.0	ug/L	5.00		92	50-150			
Bromomethane	4.5	2.0	ug/L	5.00		91	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	4.7	2.0	ug/L	5.00		94	50-150			
Carbon tetrachloride	4.4	2.0	ug/L	5.00		88	50-150			
Chlorobenzene	5.1	2.0	ug/L	5.00		102	50-150			
Chloroethane	5.0	2.0	ug/L	5.00		100	50-150			
Chloroform	5.1	2.0	ug/L	5.00		103	50-150			
Chloromethane	4.3	2.0	ug/L	5.00		85	50-150			
Dibromochloromethane	5.0	2.0	ug/L	5.00		99	50-150			
1,2-Dibromo-3-chloropropane	3.3	2.0	ug/L	5.00		65	50-150			
1,2-Dibromoethane (EDB)	4.7	2.0	ug/L	5.00		94	50-150			
1,1-Dichloroethane	4.8	2.0	ug/L	5.00		97	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		90	50-150			
cis-1,2-Dichloroethene	4.6	2.0	ug/L	5.00		91	50-150			
trans-1,2-Dichloroethene	4.5	2.0	ug/L	5.00		89	50-150			

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VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	4.9	2.0	ug/L	5.00		97	50-150			
cis-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		82	50-150			
trans-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		83	50-150			
Ethylbenzene	5.0	2.0	ug/L	5.00		99	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	3.9	2.0	ug/L	5.00		79	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.4	2.0	ug/L	5.00		87	50-150			
Naphthalene	3.2	2.0	ug/L	5.00		65	50-150			
Styrene	3.8	2.0	ug/L	5.00		77	50-150			
1,1,2,2-Tetrachloroethane	5.4	2.0	ug/L	5.00		108	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		96	50-150			
Toluene	4.8	2.0	ug/L	5.00		97	50-150			
1,1,1-Trichloroethane	4.4	2.0	ug/L	5.00		89	50-150			
1,1,2-Trichloroethane	4.8	2.0	ug/L	5.00		96	50-150			
Trichloroethene	4.6	2.0	ug/L	5.00		92	50-150			
Vinyl chloride	3.6	2.0	ug/L	5.00		73	50-150			
o-Xylene	4.0	2.0	ug/L	5.00		80	50-150			
m- & p-Xylenes	9.1	2.0	ug/L	10.0		91	50-150			
Surrogate: 1,2-Dichloroethane-d4	*50.04*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*51.02*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*51.10*		ug/L	*50.0*		*102*	*86-115*			
Batch B308149 - GCMS-WATER-VOLATILES										
Blank (B308149-BLK1)				Prepared & Analyzed: 08/20/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308149 - GCMS-WATER-VOLATILES										
Blank (B308149-BLK1)				Prepared & Analyzed: 08/20/13						
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*50.59*		ug/L	*50.0*		*101*	*80-120*			
Surrogate: Toluene-d8	*50.98*		ug/L	*50.0*		*102*	*88-110*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308149 - GCMS-WATER-VOLATILES										
Blank (B308149-BLK1)				Prepared & Analyzed: 08/20/13						
Surrogate: 4-Bromofluorobenzene	*51.37*		ug/L	*50.0*		*103*	*86-115*			
LCS (B308149-BS1)				Prepared & Analyzed: 08/20/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	4.1	2.0	ug/L	5.00		82	50-150			
Ethyl tert-butyl ether (ETBE)	4.1	2.0	ug/L	5.00		81	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	4.7	2.0	ug/L	5.00		94	50-150			
Bromodichloromethane	5.0	2.0	ug/L	5.00		100	50-150			
Bromoform	4.1	2.0	ug/L	5.00		82	50-150			
Bromomethane	4.9	2.0	ug/L	5.00		98	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	4.8	2.0	ug/L	5.00		95	50-150			
Carbon tetrachloride	4.4	2.0	ug/L	5.00		88	50-150			
Chlorobenzene	4.8	2.0	ug/L	5.00		95	50-150			
Chloroethane	4.8	2.0	ug/L	5.00		97	50-150			
Chloroform	5.2	2.0	ug/L	5.00		104	50-150			
Chloromethane	5.1	2.0	ug/L	5.00		102	50-150			
Dibromochloromethane	4.6	2.0	ug/L	5.00		92	50-150			
1,2-Dibromo-3-chloropropane	3.8	2.0	ug/L	5.00		77	50-150			
1,2-Dibromoethane (EDB)	4.2	2.0	ug/L	5.00		84	50-150			
1,1-Dichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		100	50-150			
1,1-Dichloroethene	4.6	2.0	ug/L	5.00		92	50-150			
cis-1,2-Dichloroethene	4.4	2.0	ug/L	5.00		87	50-150			
trans-1,2-Dichloroethene	4.7	2.0	ug/L	5.00		93	50-150			
1,2-Dichloropropane	4.8	2.0	ug/L	5.00		95	50-150			
cis-1,3-Dichloropropene	3.9	2.0	ug/L	5.00		78	50-150			
trans-1,3-Dichloropropene	3.7	2.0	ug/L	5.00		74	50-150			
Ethylbenzene	4.7	2.0	ug/L	5.00		94	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	4.2	2.0	ug/L	5.00		84	50-150			
Methylene chloride	5.3	2.0	ug/L	5.00		106	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.4	2.0	ug/L	5.00		87	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308149 - GCMS-WATER-VOLATILES										
LCS (B308149-BS1)				Prepared & Analyzed: 08/20/13						
Naphthalene	3.0	2.0	ug/L	5.00		60	50-150			
Styrene	3.5	2.0	ug/L	5.00		70	50-150			
1,1,2,2-Tetrachloroethane	5.1	2.0	ug/L	5.00		102	50-150			
Tetrachloroethene	4.6	2.0	ug/L	5.00		91	50-150			
Toluene	4.4	2.0	ug/L	5.00		88	50-150			
1,1,1-Trichloroethane	4.6	2.0	ug/L	5.00		91	50-150			
1,1,2-Trichloroethane	4.7	2.0	ug/L	5.00		95	50-150			
Trichloroethene	4.5	2.0	ug/L	5.00		90	50-150			
Vinyl chloride	4.1	2.0	ug/L	5.00		81	50-150			
o-Xylene	3.7	2.0	ug/L	5.00		75	50-150			
m- & p-Xylenes	8.3	2.0	ug/L	10.0		83	50-150			
Surrogate: 1,2-Dichloroethane-d4	*52.22*		ug/L	*50.0*		*104*	*80-120*			
Surrogate: Toluene-d8	*50.62*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.63*		ug/L	*50.0*		*101*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

Notes and Definitions

J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): Rusty Stoner

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
George Residence																		
PC# 20103028																		
[redacted]			x															
			x															
			x															
			x															
RAW	8/14/13	9:19 AM	x			2	1											3081421-01
Field Blank	8/14/13	9:10 AM				3	1											3081421-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Rusty Stoner	8/14/13 12:4 pm	K. McAdoo			
(Printed) Rusty Stoner		(Printed) Karla McAdoo	(Printed)		(Printed)
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks	
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	Page ____ of ____	

MSS-F001-09/12

30 on ice

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

04 September 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: HEAD RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/30/13 09:45.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: HEAD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:23

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3083006-01	Water	08/28/13 11:00	08/30/13 09:45

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: HEAD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:23

RAW

3083006-01 (Water)
Sample Date: 08/28/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/30/13	08/30/13 18:13	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Acetone	ND	ug/L	10.0	1	08/30/13	08/30/13 18:13	ECM	
Benzene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Bromoform	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Bromomethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/30/13	08/30/13 18:13	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/30/13	08/30/13 18:13	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Chloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Chloroform	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Chloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/30/13	08/30/13 18:13	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/30/13	08/30/13 18:13	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: HEAD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:23

RAW

3083006-01 (Water)
Sample Date: 08/28/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Styrene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Toluene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*94 %*		*08/30/13*	*08/30/13 18:13*		
Surrogate: Toluene-d8		*88-110*	*100 %*		*08/30/13*	*08/30/13 18:13*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*97 %*		*08/30/13*	*08/30/13 18:13*		

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: HEAD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:23

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Blank (B308230-BLK1)				Prepared & Analyzed: 08/30/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: HEAD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:23

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Blank (B308230-BLK1)				Prepared & Analyzed: 08/30/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*46.79*		ug/L	*50.0*		*94*	*80-120*			
Surrogate: Toluene-d8	*50.33*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.22*		ug/L	*50.0*		*92*	*86-115*			
LCS (B308230-BS1)				Prepared & Analyzed: 08/30/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	4.6	2.0	ug/L	5.00		92	50-150			
Ethyl tert-butyl ether (ETBE)	4.9	2.0	ug/L	5.00		98	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	5.1	2.0	ug/L	5.00		101	50-150			
Bromodichloromethane	5.2	2.0	ug/L	5.00		104	50-150			
Bromoform	4.5	2.0	ug/L	5.00		90	50-150			
Bromomethane	5.9	2.0	ug/L	5.00		119	50-150			
2-Butanone (MEK)	6.3	10.0	ug/L	10.0		63	50-150			J
tert-Butanol (TBA)	21.3	15.0	ug/L	25.0		85	50-150			
Carbon disulfide	5.6	2.0	ug/L	5.00		111	50-150			
Carbon tetrachloride	5.3	2.0	ug/L	5.00		106	50-150			
Chlorobenzene	5.0	2.0	ug/L	5.00		99	50-150			
Chloroethane	5.1	2.0	ug/L	5.00		102	50-150			
Chloroform	5.1	2.0	ug/L	5.00		101	50-150			
Chloromethane	5.0	2.0	ug/L	5.00		100	50-150			
Dibromochloromethane	5.1	2.0	ug/L	5.00		102	50-150			
1,2-Dibromo-3-chloropropane	4.4	2.0	ug/L	5.00		88	50-150			
1,2-Dibromoethane (EDB)	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethane	5.1	2.0	ug/L	5.00		102	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		101	50-150			
1,1-Dichloroethene	5.8	2.0	ug/L	5.00		116	50-150			
cis-1,2-Dichloroethene	4.7	2.0	ug/L	5.00		94	50-150			
trans-1,2-Dichloroethene	5.4	2.0	ug/L	5.00		107	50-150			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: HEAD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:23

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
LCS (B308230-BS1)				Prepared & Analyzed: 08/30/13						
1,2-Dichloropropane	5.4	2.0	ug/L	5.00		107	50-150			
cis-1,3-Dichloropropene	5.0	2.0	ug/L	5.00		99	50-150			
trans-1,3-Dichloropropene	4.8	2.0	ug/L	5.00		96	50-150			
Ethylbenzene	4.6	2.0	ug/L	5.00		93	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	5.0	2.0	ug/L	5.00		101	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	10.0	10.0	ug/L	10.0		100	50-150			
Methyl tert-butyl ether (MTBE)	5.0	2.0	ug/L	5.00		99	50-150			
Naphthalene	4.5	2.0	ug/L	5.00		89	50-150			
Styrene	4.1	2.0	ug/L	5.00		83	50-150			
1,1,2,2-Tetrachloroethane	4.7	2.0	ug/L	5.00		94	50-150			
Tetrachloroethene	5.3	2.0	ug/L	5.00		105	50-150			
Toluene	5.1	2.0	ug/L	5.00		102	50-150			
1,1,1-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
1,1,2-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Trichloroethene	5.1	2.0	ug/L	5.00		103	50-150			
Vinyl chloride	4.8	2.0	ug/L	5.00		97	50-150			
o-Xylene	4.9	2.0	ug/L	5.00		97	50-150			
m- & p-Xylenes	9.0	2.0	ug/L	10.0		90	50-150			
Surrogate: 1,2-Dichloroethane-d4	*46.96*		ug/L	*50.0*		*94*	*80-120*			
Surrogate: Toluene-d8	*50.63*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*48.83*		ug/L	*50.0*		*98*	*86-115*			
Matrix Spike (B308230-MS1)		**Source: 3083009-02**		Prepared & Analyzed: 08/30/13						
Benzene	49.3	2.0	ug/L	50.0	ND	99	76-127			
Chlorobenzene	51.8	2.0	ug/L	50.0	ND	104	75-130			
1,1-Dichloroethene	49.5	2.0	ug/L	50.0	ND	99	61-145			
Toluene	49.7	2.0	ug/L	50.0	ND	99	76-125			
Trichloroethene	48.7	2.0	ug/L	50.0	ND	97	71-120			
Surrogate: 1,2-Dichloroethane-d4	*46.73*		ug/L	*50.0*		*93*	*80-120*			
Surrogate: Toluene-d8	*49.78*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.20*		ug/L	*50.0*		*92*	*86-115*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: HEAD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:23

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Matrix Spike Dup (B308230-MSD1)		**Source: 3083009-02**		Prepared & Analyzed: 08/30/13						
Benzene	47.2	2.0	ug/L	50.0	ND	94	76-127	4	11	
Chlorobenzene	45.0	2.0	ug/L	50.0	ND	90	75-130	14	13	
1,1-Dichloroethene	49.0	2.0	ug/L	50.0	ND	98	61-145	1	14	
Toluene	46.4	2.0	ug/L	50.0	ND	93	76-125	7	13	
Trichloroethene	45.7	2.0	ug/L	50.0	ND	91	71-120	6	14	
Surrogate: 1,2-Dichloroethane-d4	*46.65*		ug/L	*50.0*		*93*	*80-120*			
Surrogate: Toluene-d8	*49.56*		ug/L	*50.0*		*99*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*45.86*		ug/L	*50.0*		*92*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: HEAD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:23

Notes and Definitions

J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): Rusty Stoner

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410-247-7600 • Fax 410-247-7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Head Residence																		
PC # 20103028																		
PREPM			x															
			x															
			x															
			x															
RAW	8/28/13	11:00 AM	x			3	1											3083006-01ABC
Field Blank	8/28/13	11:00 AM	✓			3	1											3083006-02ABC

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Rusty Stoner	8/30	[signature]			
(Printed) Rusty Stoner	945	(Printed) S Hanna	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks
(Printed)		(Printed)	Data Summary Above + QC Above + Calibration Above + Raw Data EDD	3.5°C on Ice

Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

21 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: TERPAK RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/15/13 13:50.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: TERPAK RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:17

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081507-02	Water	08/15/13 10:45	08/15/13 13:50

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: TERPAK RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:17

RAW

3081507-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 19:14	CMK	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 19:14	CMK	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 19:14	CMK	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 19:14	CMK	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 19:14	CMK	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 19:14	CMK	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: TERPAK RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:17

RAW

3081507-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*111 %*		*08/16/13*	*08/16/13 19:14*		
Surrogate: Toluene-d8		*88-110*	*98 %*		*08/16/13*	*08/16/13 19:14*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*91 %*		*08/16/13*	*08/16/13 19:14*		

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: TERPAK RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:17

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: TERPAK RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:17

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*53.19*		ug/L	*50.0*		*106*	*80-120*			
Surrogate: Toluene-d8	*49.99*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.56*		ug/L	*50.0*		*93*	*86-115*			
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	5.2	2.0	ug/L	5.00		103	50-150			
Ethyl tert-butyl ether (ETBE)	5.1	2.0	ug/L	5.00		102	50-150			
Acetone	11.9	10.0	ug/L	10.0		119	50-150			
Benzene	5.3	2.0	ug/L	5.00		107	50-150			
Bromodichloromethane	5.6	2.0	ug/L	5.00		113	50-150			
Bromoform	5.0	2.0	ug/L	5.00		100	50-150			
Bromomethane	5.6	2.0	ug/L	5.00		111	50-150			
2-Butanone (MEK)	6.8	5.0	ug/L	10.0		68	50-150			
tert-Butanol (TBA)	27.7	15.0	ug/L	25.0		111	50-150			
Carbon disulfide	5.7	2.0	ug/L	5.00		113	50-150			
Carbon tetrachloride	5.8	2.0	ug/L	5.00		117	50-150			
Chlorobenzene	5.2	2.0	ug/L	5.00		104	50-150			
Chloroethane	5.5	2.0	ug/L	5.00		110	50-150			
Chloroform	5.8	2.0	ug/L	5.00		116	50-150			
Chloromethane	4.2	2.0	ug/L	5.00		83	50-150			
Dibromochloromethane	5.5	2.0	ug/L	5.00		110	50-150			
1,2-Dibromo-3-chloropropane	5.4	2.0	ug/L	5.00		108	50-150			
1,2-Dibromoethane (EDB)	4.9	2.0	ug/L	5.00		98	50-150			
1,1-Dichloroethane	5.7	2.0	ug/L	5.00		114	50-150			
1,2-Dichloroethane	5.8	2.0	ug/L	5.00		115	50-150			
1,1-Dichloroethene	6.4	2.0	ug/L	5.00		129	50-150			
cis-1,2-Dichloroethene	5.2	2.0	ug/L	5.00		105	50-150			
trans-1,2-Dichloroethene	6.1	2.0	ug/L	5.00		122	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: TERPAK RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:17

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	5.5	2.0	ug/L	5.00		111	50-150			
cis-1,3-Dichloropropene	4.9	2.0	ug/L	5.00		98	50-150			
trans-1,3-Dichloropropene	4.8	2.0	ug/L	5.00		96	50-150			
Ethylbenzene	4.5	2.0	ug/L	5.00		90	50-150			
2-Hexanone	11.3	10.0	ug/L	10.0		113	50-150			
Diisopropyl ether (DIPE)	5.1	2.0	ug/L	5.00		101	50-150			
Methylene chloride	6.6	2.0	ug/L	5.00		132	0-200			
4-Methyl-2-pentanone	10.3	10.0	ug/L	10.0		103	50-150			
Methyl tert-butyl ether (MTBE)	5.5	2.0	ug/L	5.00		110	50-150			
Naphthalene	4.3	2.0	ug/L	5.00		86	50-150			
Styrene	3.9	2.0	ug/L	5.00		79	50-150			
1,1,2,2-Tetrachloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Tetrachloroethene	5.1	2.0	ug/L	5.00		102	50-150			
Toluene	5.0	2.0	ug/L	5.00		100	50-150			
1,1,1-Trichloroethane	5.8	2.0	ug/L	5.00		116	50-150			
1,1,2-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Trichloroethene	5.5	2.0	ug/L	5.00		110	50-150			
Vinyl chloride	5.0	2.0	ug/L	5.00		100	50-150			
o-Xylene	4.5	2.0	ug/L	5.00		90	50-150			
m- & p-Xylenes	8.8	2.0	ug/L	10.0		88	50-150			
Surrogate: 1,2-Dichloroethane-d4	*52.27*		ug/L	*50.0*		*105*	*80-120*			
Surrogate: Toluene-d8	*49.98*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*47.21*		ug/L	*50.0*		*94*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: TERPAK RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:17

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA	Project Manager: Rusty Stoner
Project Name: VA Project	Project ID:15100
Sampler(s): [signature]	P.O. Number:

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Terpak Residence																		
PC#20103028																		
PREPM			x															
			x															
			x															
Field Blank	815	1050	x			3	x											3081507-01
RAW	815	1045	x			3	x											-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	815	[signature]			
(Printed) [signature]	1:50	(Printed) [signature]	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	4.5°C

Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

27 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: Pence Residence

Enclosed are the results of analyses for samples received by the laboratory on 08/22/13 13:28.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Pence Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 13:37

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3082204-01	Liquid	08/22/13 09:00	08/22/13 13:28

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Pence Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 13:37

RAW

3082204-01 (Liquid)
Sample Date: 08/22/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/23/13	08/23/13 14:56	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Acetone	ND	ug/L	10.0	1	08/23/13	08/23/13 14:56	ECM	
Benzene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Bromoform	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Bromomethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/23/13	08/23/13 14:56	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/23/13	08/23/13 14:56	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Chloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Chloroform	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Chloromethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/23/13	08/23/13 14:56	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/23/13	08/23/13 14:56	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Pence Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 13:37

RAW

3082204-01 (Liquid)
Sample Date: 08/22/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Styrene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Toluene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*98 %*		*08/23/13*	*08/23/13 14:56*		
Surrogate: Toluene-d8		*88-110*	*101 %*		*08/23/13*	*08/23/13 14:56*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*100 %*		*08/23/13*	*08/23/13 14:56*		

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Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Pence Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 13:37

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308178 - GCMS-WATER-VOLATILES										
Blank (B308178-BLK1)				Prepared & Analyzed: 08/23/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Pence Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 13:37

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308178 - GCMS-WATER-VOLATILES										
Blank (B308178-BLK1)				Prepared & Analyzed: 08/23/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*50.00*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*50.30*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.22*		ug/L	*50.0*		*100*	*86-115*			
LCS (B308178-BS1)				Prepared & Analyzed: 08/23/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	4.7	2.0	ug/L	5.00		94	50-150			
Ethyl tert-butyl ether (ETBE)	4.7	2.0	ug/L	5.00		93	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	5.0	2.0	ug/L	5.00		99	50-150			
Bromodichloromethane	4.9	2.0	ug/L	5.00		98	50-150			
Bromoform	4.6	2.0	ug/L	5.00		91	50-150			
Bromomethane	4.2	2.0	ug/L	5.00		84	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	5.0	2.0	ug/L	5.00		101	50-150			
Carbon tetrachloride	4.8	2.0	ug/L	5.00		96	50-150			
Chlorobenzene	4.8	2.0	ug/L	5.00		96	50-150			
Chloroethane	4.8	2.0	ug/L	5.00		96	50-150			
Chloroform	5.1	2.0	ug/L	5.00		103	50-150			
Chloromethane	4.2	2.0	ug/L	5.00		85	50-150			
Dibromochloromethane	4.6	2.0	ug/L	5.00		92	50-150			
1,2-Dibromo-3-chloropropane	4.7	2.0	ug/L	5.00		93	50-150			
1,2-Dibromoethane (EDB)	4.4	2.0	ug/L	5.00		87	50-150			
1,1-Dichloroethane	5.1	2.0	ug/L	5.00		102	50-150			
1,2-Dichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		91	50-150			
cis-1,2-Dichloroethene	4.8	2.0	ug/L	5.00		96	50-150			
trans-1,2-Dichloroethene	5.0	2.0	ug/L	5.00		100	50-150			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Pence Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 13:37

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308178 - GCMS-WATER-VOLATILES										
LCS (B308178-BS1)				Prepared & Analyzed: 08/23/13						
1,2-Dichloropropane	4.7	2.0	ug/L	5.00		94	50-150			
cis-1,3-Dichloropropene	3.8	2.0	ug/L	5.00		75	50-150			
trans-1,3-Dichloropropene	3.5	2.0	ug/L	5.00		70	50-150			
Ethylbenzene	4.8	2.0	ug/L	5.00		95	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	3.5	2.0	ug/L	5.00		70	50-150			
Methylene chloride	5.7	2.0	ug/L	5.00		114	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.7	2.0	ug/L	5.00		94	50-150			
Naphthalene	3.1	2.0	ug/L	5.00		61	50-150			
Styrene	3.6	2.0	ug/L	5.00		72	50-150			
1,1,2,2-Tetrachloroethane	5.1	2.0	ug/L	5.00		102	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		95	50-150			
Toluene	4.8	2.0	ug/L	5.00		97	50-150			
1,1,1-Trichloroethane	4.9	2.0	ug/L	5.00		98	50-150			
1,1,2-Trichloroethane	4.9	2.0	ug/L	5.00		98	50-150			
Trichloroethene	5.3	2.0	ug/L	5.00		106	50-150			
Vinyl chloride	4.1	2.0	ug/L	5.00		82	50-150			
o-Xylene	4.0	2.0	ug/L	5.00		79	50-150			
m- & p-Xylenes	9.3	2.0	ug/L	10.0		93	50-150			
Surrogate: 1,2-Dichloroethane-d4	*49.97*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*49.15*		ug/L	*50.0*		*98*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*49.44*		ug/L	*50.0*		*99*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Pence Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 13:37

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): S H

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Pence Residence																		
PC# 20103028																		
PREPM			x															
			x															
			x															
Field Blank	822	905	x			3	x											02
RAW	822	900	x			3	x											3082204-01

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
(Printed) Scott Herbert	8/22 10:55	(Printed) Cory Koons	(Printed)		(Printed)
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks	
(Printed)		(Printed)	Data Summary Above + QC Above + Calibration Above + Raw Data EDD	6°C on Ice	Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

22 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: PARK AUTHORITY, FAIRFAX CO.

Enclosed are the results of analyses for samples received by the laboratory on 08/14/13 12:41.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081420-01	Nonpotable Water	08/14/13 09:40	08/14/13 12:41
FIELD BLANK		3081420-02	Nonpotable Water	08/14/13 09:40	08/14/13 12:41

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

RAW

3081420-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 14:05	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 14:05	ECM	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 14:05	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 14:05	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Chloroform	**3.9**	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 14:05	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 14:05	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

RAW

3081420-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 14:05	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*98 %*		*08/16/13*	*08/16/13 14:05*		
Surrogate: Toluene-d8		*88-110*	*103 %*		*08/16/13*	*08/16/13 14:05*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*100 %*		*08/16/13*	*08/16/13 14:05*		

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

FIELD BLANK

3081420-02 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 16:42	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 16:42	ECM	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 16:42	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 16:42	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 16:42	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 16:42	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

FIELD BLANK

3081420-02 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	
Xylenes, Total	**1.4**	ug/L	2.0	1	08/16/13	08/16/13 16:42	ECM	J
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*98 %*		*08/16/13*	*08/16/13 16:42*		
Surrogate: Toluene-d8		*88-110*	*102 %*		*08/16/13*	*08/16/13 16:42*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*100 %*		*08/16/13*	*08/16/13 16:42*		

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*49.34*		ug/L	*50.0*		*99*	*80-120*			
Surrogate: Toluene-d8	*51.20*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.10*		ug/L	*50.0*		*100*	*86-115*			
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	3.9	2.0	ug/L	5.00		78	50-150			
Ethyl tert-butyl ether (ETBE)	4.2	2.0	ug/L	5.00		83	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	4.8	2.0	ug/L	5.00		96	50-150			
Bromodichloromethane	5.1	2.0	ug/L	5.00		102	50-150			
Bromoform	4.6	2.0	ug/L	5.00		92	50-150			
Bromomethane	4.5	2.0	ug/L	5.00		91	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	4.7	2.0	ug/L	5.00		94	50-150			
Carbon tetrachloride	4.4	2.0	ug/L	5.00		88	50-150			
Chlorobenzene	5.1	2.0	ug/L	5.00		102	50-150			
Chloroethane	5.0	2.0	ug/L	5.00		100	50-150			
Chloroform	5.1	2.0	ug/L	5.00		103	50-150			
Chloromethane	4.3	2.0	ug/L	5.00		85	50-150			
Dibromochloromethane	5.0	2.0	ug/L	5.00		99	50-150			
1,2-Dibromo-3-chloropropane	3.3	2.0	ug/L	5.00		65	50-150			
1,2-Dibromoethane (EDB)	4.7	2.0	ug/L	5.00		94	50-150			
1,1-Dichloroethane	4.8	2.0	ug/L	5.00		97	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		90	50-150			
cis-1,2-Dichloroethene	4.6	2.0	ug/L	5.00		91	50-150			
trans-1,2-Dichloroethene	4.5	2.0	ug/L	5.00		89	50-150			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	4.9	2.0	ug/L	5.00		97	50-150			
cis-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		82	50-150			
trans-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		83	50-150			
Ethylbenzene	5.0	2.0	ug/L	5.00		99	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	3.9	2.0	ug/L	5.00		79	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.4	2.0	ug/L	5.00		87	50-150			
Naphthalene	3.2	2.0	ug/L	5.00		65	50-150			
Styrene	3.8	2.0	ug/L	5.00		77	50-150			
1,1,2,2-Tetrachloroethane	5.4	2.0	ug/L	5.00		108	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		96	50-150			
Toluene	4.8	2.0	ug/L	5.00		97	50-150			
1,1,1-Trichloroethane	4.4	2.0	ug/L	5.00		89	50-150			
1,1,2-Trichloroethane	4.8	2.0	ug/L	5.00		96	50-150			
Trichloroethene	4.6	2.0	ug/L	5.00		92	50-150			
Vinyl chloride	3.6	2.0	ug/L	5.00		73	50-150			
o-Xylene	4.0	2.0	ug/L	5.00		80	50-150			
m- & p-Xylenes	9.1	2.0	ug/L	10.0		91	50-150			
Surrogate: 1,2-Dichloroethane-d4	*50.04*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*51.02*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*51.10*		ug/L	*50.0*		*102*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PARK AUTHORITY, FAIRFAX CO.

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:36

Notes and Definitions

J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): Rusty Stoner

P.O. Number:

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Park Authority, Fairfax Co.																		
PC# 20103028																		
[redacted]			x															
			x															
			x															
			x															
RAW	8/14/13	9:40 AM	x			3	1											3081420-01
Field Blank	8/14/13	9:40 AM	X			3	1											3081420-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Rusty Stoner	8/14/13	K. McAdoo			
(Printed) Rusty Stoner	12:41 pm	(Printed) Karla McAdoo	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	Page ____ of ____

MSS-F001-09/12

@ 3.0 on ice

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

03 September 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: Nokesville Veterinary Clinic

Enclosed are the results of analyses for samples received by the laboratory on 08/29/13 13:47.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3082906-01	Water	08/29/13 09:30	08/29/13 13:47

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

RAW

3082906-01 (Water)
Sample Date: 08/29/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/30/13	08/30/13 15:58	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Acetone	ND	ug/L	10.0	1	08/30/13	08/30/13 15:58	ECM	
Benzene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Bromoform	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Bromomethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/30/13	08/30/13 15:58	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/30/13	08/30/13 15:58	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Chloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Chloroform	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Chloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/30/13	08/30/13 15:58	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/30/13	08/30/13 15:58	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

RAW

3082906-01 (Water)
Sample Date: 08/29/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Styrene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Toluene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/30/13	08/30/13 15:58	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*95 %*		*08/30/13*	*08/30/13 15:58*		
Surrogate: Toluene-d8		*88-110*	*101 %*		*08/30/13*	*08/30/13 15:58*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*95 %*		*08/30/13*	*08/30/13 15:58*		
SEMIVOLATILE ORGANICS BY EPA METHOD 8270D (GC/MS)								
Acenaphthene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Acenaphthylene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Anthracene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Benzo[a]anthracene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Benzo[b]fluoranthene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Benzo[k]fluoranthene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Benzo[ghi]perylene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Benzo[a]pyrene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Chrysene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Dibenzo[a,h]anthracene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Fluoranthene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Fluorene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Indeno[1,2,3-cd]pyrene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
2-Methylnaphthalene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Naphthalene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Phenanthrene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Pyrene	ND	ug/L	2.4	1	08/29/13	08/30/13 18:32	WB	
Surrogate: 2-Fluorophenol		*21-110*	*49 %*		*08/29/13*	*08/30/13 18:32*		
Surrogate: Phenol-d5		*10-110*	*34 %*		*08/29/13*	*08/30/13 18:32*		
Surrogate: Nitrobenzene-d5		*35-114*	*77 %*		*08/29/13*	*08/30/13 18:32*		
Surrogate: 2,4,6-Tribromophenol		*10-123*	*85 %*		*08/29/13*	*08/30/13 18:32*		

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

RAW

3082906-01 (Water)
Sample Date: 08/29/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
SEMIVOLATILE ORGANICS BY EPA METHOD 8270D (GC/MS) (continued)								
Surrogate: 2-Fluorobiphenyl		*43-116*	*75 %*		*08/29/13*	*08/30/13 18:32*		
Surrogate: Terphenyl-d14		*33-141*	*68 %*		*08/29/13*	*08/30/13 18:32*		

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Blank (B308230-BLK1)				Prepared & Analyzed: 08/30/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Blank (B308230-BLK1)				Prepared & Analyzed: 08/30/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*46.79*		ug/L	*50.0*		*94*	*80-120*			
Surrogate: Toluene-d8	*50.33*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.22*		ug/L	*50.0*		*92*	*86-115*			
LCS (B308230-BS1)				Prepared & Analyzed: 08/30/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	4.6	2.0	ug/L	5.00		92	50-150			
Ethyl tert-butyl ether (ETBE)	4.9	2.0	ug/L	5.00		98	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	5.1	2.0	ug/L	5.00		101	50-150			
Bromodichloromethane	5.2	2.0	ug/L	5.00		104	50-150			
Bromoform	4.5	2.0	ug/L	5.00		90	50-150			
Bromomethane	5.9	2.0	ug/L	5.00		119	50-150			
2-Butanone (MEK)	6.3	10.0	ug/L	10.0		63	50-150			J
tert-Butanol (TBA)	21.3	15.0	ug/L	25.0		85	50-150			
Carbon disulfide	5.6	2.0	ug/L	5.00		111	50-150			
Carbon tetrachloride	5.3	2.0	ug/L	5.00		106	50-150			
Chlorobenzene	5.0	2.0	ug/L	5.00		99	50-150			
Chloroethane	5.1	2.0	ug/L	5.00		102	50-150			
Chloroform	5.1	2.0	ug/L	5.00		101	50-150			
Chloromethane	5.0	2.0	ug/L	5.00		100	50-150			
Dibromochloromethane	5.1	2.0	ug/L	5.00		102	50-150			
1,2-Dibromo-3-chloropropane	4.4	2.0	ug/L	5.00		88	50-150			
1,2-Dibromoethane (EDB)	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethane	5.1	2.0	ug/L	5.00		102	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		101	50-150			
1,1-Dichloroethene	5.8	2.0	ug/L	5.00		116	50-150			
cis-1,2-Dichloroethene	4.7	2.0	ug/L	5.00		94	50-150			
trans-1,2-Dichloroethene	5.4	2.0	ug/L	5.00		107	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
LCS (B308230-BS1)				Prepared & Analyzed: 08/30/13						
1,2-Dichloropropane	5.4	2.0	ug/L	5.00		107	50-150			
cis-1,3-Dichloropropene	5.0	2.0	ug/L	5.00		99	50-150			
trans-1,3-Dichloropropene	4.8	2.0	ug/L	5.00		96	50-150			
Ethylbenzene	4.6	2.0	ug/L	5.00		93	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	5.0	2.0	ug/L	5.00		101	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	10.0	10.0	ug/L	10.0		100	50-150			
Methyl tert-butyl ether (MTBE)	5.0	2.0	ug/L	5.00		99	50-150			
Naphthalene	4.5	2.0	ug/L	5.00		89	50-150			
Styrene	4.1	2.0	ug/L	5.00		83	50-150			
1,1,2,2-Tetrachloroethane	4.7	2.0	ug/L	5.00		94	50-150			
Tetrachloroethene	5.3	2.0	ug/L	5.00		105	50-150			
Toluene	5.1	2.0	ug/L	5.00		102	50-150			
1,1,1-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
1,1,2-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Trichloroethene	5.1	2.0	ug/L	5.00		103	50-150			
Vinyl chloride	4.8	2.0	ug/L	5.00		97	50-150			
o-Xylene	4.9	2.0	ug/L	5.00		97	50-150			
m- & p-Xylenes	9.0	2.0	ug/L	10.0		90	50-150			
Surrogate: 1,2-Dichloroethane-d4	*46.96*		ug/L	*50.0*		*94*	*80-120*			
Surrogate: Toluene-d8	*50.63*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*48.83*		ug/L	*50.0*		*98*	*86-115*			
Matrix Spike (B308230-MS1)		**Source: 3083009-02**		Prepared & Analyzed: 08/30/13						
Benzene	49.3	2.0	ug/L	50.0	ND	99	76-127			
Chlorobenzene	51.8	2.0	ug/L	50.0	ND	104	75-130			
1,1-Dichloroethene	49.5	2.0	ug/L	50.0	ND	99	61-145			
Toluene	49.7	2.0	ug/L	50.0	ND	99	76-125			
Trichloroethene	48.7	2.0	ug/L	50.0	ND	97	71-120			
Surrogate: 1,2-Dichloroethane-d4	*46.73*		ug/L	*50.0*		*93*	*80-120*			
Surrogate: Toluene-d8	*49.78*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.20*		ug/L	*50.0*		*92*	*86-115*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Matrix Spike Dup (B308230-MSD1)		**Source: 3083009-02**		Prepared & Analyzed: 08/30/13						
Benzene	47.2	2.0	ug/L	50.0	ND	94	76-127	4	11	
Chlorobenzene	45.0	2.0	ug/L	50.0	ND	90	75-130	14	13	
1,1-Dichloroethene	49.0	2.0	ug/L	50.0	ND	98	61-145	1	14	
Toluene	46.4	2.0	ug/L	50.0	ND	93	76-125	7	13	
Trichloroethene	45.7	2.0	ug/L	50.0	ND	91	71-120	6	14	
Surrogate: 1,2-Dichloroethane-d4	*46.65*		ug/L	*50.0*		*93*	*80-120*			
Surrogate: Toluene-d8	*49.56*		ug/L	*50.0*		*99*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*45.86*		ug/L	*50.0*		*92*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

SEMIVOLATILE ORGANICS BY EPA METHOD 8270D (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308222 - 3510-GCMS(Sep Funnel)										
Blank (B308222-BLK1)				Prepared: 08/29/13 Analyzed: 08/30/13						
Acenaphthene	ND	2.0	ug/L							
Acenaphthylene	ND	2.0	ug/L							
Anthracene	ND	2.0	ug/L							
Benzo[a]anthracene	ND	2.0	ug/L							
Benzo[b]fluoranthene	ND	2.0	ug/L							
Benzo[k]fluoranthene	ND	2.0	ug/L							
Benzo[ghi]perylene	ND	2.0	ug/L							
Benzo[a]pyrene	ND	2.0	ug/L							
Chrysene	ND	2.0	ug/L							
Dibenzo[a,h]anthracene	ND	2.0	ug/L							
Fluoranthene	ND	2.0	ug/L							
Fluorene	ND	2.0	ug/L							
Indeno[1,2,3-cd]pyrene	ND	2.0	ug/L							
2-Methylnaphthalene	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Phenanthrene	ND	2.0	ug/L							
Pyrene	ND	2.0	ug/L							
Surrogate: 2-Fluorophenol	*48.3*		ug/L	*100*		*48*	*21-110*			
Surrogate: Phenol-d5	*33.3*		ug/L	*100*		*33*	*10-110*			
Surrogate: Nitrobenzene-d5	*39.3*		ug/L	*50.0*		*79*	*35-114*			
Surrogate: 2,4,6-Tribromophenol	*86.0*		ug/L	*100*		*86*	*10-123*			
Surrogate: 2-Fluorobiphenyl	*38.0*		ug/L	*50.0*		*76*	*43-116*			
Surrogate: Terphenyl-d14	*35.9*		ug/L	*50.0*		*72*	*33-141*			
LCS (B308222-BS1)				Prepared: 08/29/13 Analyzed: 08/30/13						
Acenaphthene	23.6	2.0	ug/L	25.0		94	70-130			
Acenaphthylene	24.8	2.0	ug/L	25.0		99	70-130			
Anthracene	23.4	2.0	ug/L	25.0		93	70-130			
Benzo[a]anthracene	22.7	2.0	ug/L	25.0		91	70-130			
Benzo[b]fluoranthene	26.2	2.0	ug/L	25.0		105	70-130			
Benzo[k]fluoranthene	26.0	2.0	ug/L	25.0		104	70-130			
Benzo[ghi]perylene	13.8	2.0	ug/L	25.0		55	70-130			
Benzo[a]pyrene	23.0	2.0	ug/L	25.0		92	70-130			
Chrysene	24.1	2.0	ug/L	25.0		96	70-130			
Dibenzo[a,h]anthracene	15.1	2.0	ug/L	25.0		61	70-130			
Fluoranthene	21.5	2.0	ug/L	25.0		86	70-130			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

SEMIVOLATILE ORGANICS BY EPA METHOD 8270D (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308222 - 3510-GCMS(Sep Funnel)										
LCS (B308222-BS1)				Prepared: 08/29/13 Analyzed: 08/30/13						
Fluorene	23.5	2.0	ug/L	25.0		94	70-130			
Indeno[1,2,3-cd]pyrene	14.8	2.0	ug/L	25.0		59	70-130			
2-Methylnaphthalene	ND	2.0	ug/L				70-130			
Naphthalene	23.4	2.0	ug/L	25.0		94	70-130			
Phenanthrene	24.3	2.0	ug/L	25.0		97	70-130			
Pyrene	20.1	2.0	ug/L	25.0		81	70-130			
Surrogate: 2-Fluorophenol	*46.6*		ug/L	*100*		*47*	*21-110*			
Surrogate: Phenol-d5	*32.7*		ug/L	*100*		*33*	*10-110*			
Surrogate: Nitrobenzene-d5	*38.8*		ug/L	*50.0*		*78*	*35-114*			
Surrogate: 2,4,6-Tribromophenol	*83.2*		ug/L	*100*		*83*	*10-123*			
Surrogate: 2-Fluorobiphenyl	*38.8*		ug/L	*50.0*		*78*	*43-116*			
Surrogate: Terphenyl-d14	*33.7*		ug/L	*50.0*		*67*	*33-141*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Nokesville Veterinary Clinic

Project Number: PC-2004-3120
Project Manager: Rusty Stoner

Reported:
09/03/13 13:47

Notes and Definitions

J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): ED

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410-247-7600 • Fax 410-247-7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Nokesville Veterinary Clinic																		
PC # 20043120																		
PREPM			x															
			x															
			x															
			x															
RAW	8-29-13	9:30	x			5	X			X								3082906-01

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
ED Plummer	8-29-13				
(Printed) Ed Plummer	1347	(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	4.7°C, ice Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

30 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: MACINTOSH RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/27/13 15:20.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PREPM		3082705-01	Water	08/23/13 09:00	08/27/13 15:20
RAW		3082705-02	Water	08/23/13 09:05	08/27/13 15:20

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

PREPM

3082705-01 (Water)
Sample Date: 08/23/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/28/13	08/28/13 15:05	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Acetone	ND	ug/L	10.0	1	08/28/13	08/28/13 15:05	ECM	
Benzene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Bromoform	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Bromomethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/28/13	08/28/13 15:05	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/28/13	08/28/13 15:05	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Chloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Chloroform	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Chloromethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/28/13	08/28/13 15:05	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/28/13	08/28/13 15:05	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

PREPM

3082705-01 (Water)
Sample Date: 08/23/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Styrene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Toluene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/28/13	08/28/13 15:05	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*95 %*		*08/28/13*	*08/28/13 15:05*		
Surrogate: Toluene-d8		*88-110*	*97 %*		*08/28/13*	*08/28/13 15:05*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*92 %*		*08/28/13*	*08/28/13 15:05*		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

RAW

3082705-02 (Water)
Sample Date: 08/23/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/28/13	08/28/13 15:40	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Acetone	ND	ug/L	10.0	1	08/28/13	08/28/13 15:40	ECM	
Benzene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Bromoform	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Bromomethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/28/13	08/28/13 15:40	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/28/13	08/28/13 15:40	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Chloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Chloroform	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Chloromethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/28/13	08/28/13 15:40	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/28/13	08/28/13 15:40	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Naphthalene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Styrene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

RAW

3082705-02 (Water)
Sample Date: 08/23/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Tetrachloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Toluene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/28/13	08/28/13 15:40	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*94 %*		*08/28/13*	*08/28/13 15:40*		
Surrogate: Toluene-d8		*88-110*	*98 %*		*08/28/13*	*08/28/13 15:40*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*95 %*		*08/28/13*	*08/28/13 15:40*		

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Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308213 - GCMS-WATER-VOLATILES										
Blank (B308213-BLK1)				Prepared & Analyzed: 08/28/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308213 - GCMS-WATER-VOLATILES										
Blank (B308213-BLK1)				Prepared & Analyzed: 08/28/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*46.10*		ug/L	*50.0*		*92*	*80-120*			
Surrogate: Toluene-d8	*48.97*		ug/L	*50.0*		*98*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.61*		ug/L	*50.0*		*93*	*86-115*			
LCS (B308213-BS1)				Prepared & Analyzed: 08/28/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	4.6	2.0	ug/L	5.00		92	50-150			
Ethyl tert-butyl ether (ETBE)	4.4	2.0	ug/L	5.00		89	50-150			
Acetone	ND	5.0	ug/L	10.0			50-150			
Benzene	4.7	2.0	ug/L	5.00		95	50-150			
Bromodichloromethane	4.8	2.0	ug/L	5.00		96	50-150			
Bromoform	4.3	2.0	ug/L	5.00		86	50-150			
Bromomethane	4.7	2.0	ug/L	5.00		95	50-150			
2-Butanone (MEK)	5.7	5.0	ug/L	10.0		57	50-150			
tert-Butanol (TBA)	26.0	15.0	ug/L	25.0		104	50-150			
Carbon disulfide	5.0	2.0	ug/L	5.00		100	50-150			
Carbon tetrachloride	4.6	2.0	ug/L	5.00		91	50-150			
Chlorobenzene	4.6	2.0	ug/L	5.00		92	50-150			
Chloroethane	4.9	2.0	ug/L	5.00		98	50-150			
Chloroform	4.9	2.0	ug/L	5.00		98	50-150			
Chloromethane	4.4	2.0	ug/L	5.00		87	50-150			
Dibromochloromethane	4.4	2.0	ug/L	5.00		88	50-150			
1,2-Dibromo-3-chloropropane	4.5	2.0	ug/L	5.00		90	50-150			
1,2-Dibromoethane (EDB)	4.6	2.0	ug/L	5.00		92	50-150			
1,1-Dichloroethane	4.7	2.0	ug/L	5.00		93	50-150			
1,2-Dichloroethane	4.7	2.0	ug/L	5.00		94	50-150			
1,1-Dichloroethene	5.4	2.0	ug/L	5.00		109	50-150			
cis-1,2-Dichloroethene	4.6	2.0	ug/L	5.00		91	50-150			
trans-1,2-Dichloroethene	5.2	2.0	ug/L	5.00		104	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308213 - GCMS-WATER-VOLATILES										
LCS (B308213-BS1)				Prepared & Analyzed: 08/28/13						
1,2-Dichloropropane	4.6	2.0	ug/L	5.00		91	50-150			
cis-1,3-Dichloropropene	4.3	2.0	ug/L	5.00		86	50-150			
trans-1,3-Dichloropropene	4.2	2.0	ug/L	5.00		83	50-150			
Ethylbenzene	4.2	2.0	ug/L	5.00		84	50-150			
2-Hexanone	5.3	5.0	ug/L	10.0		53	50-150			
Diisopropyl ether (DIPE)	4.3	2.0	ug/L	5.00		85	50-150			
Methylene chloride	5.4	2.0	ug/L	5.00		107	0-200			
4-Methyl-2-pentanone	8.8	10.0	ug/L	10.0		88	50-150			J
Methyl tert-butyl ether (MTBE)	5.1	2.0	ug/L	5.00		101	50-150			
Naphthalene	4.5	2.0	ug/L	5.00		90	50-150			
Styrene	4.1	2.0	ug/L	5.00		81	50-150			
1,1,2,2-Tetrachloroethane	4.4	2.0	ug/L	5.00		87	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		96	50-150			
Toluene	4.5	2.0	ug/L	5.00		89	50-150			
1,1,1-Trichloroethane	4.9	2.0	ug/L	5.00		97	50-150			
1,1,2-Trichloroethane	4.9	2.0	ug/L	5.00		99	50-150			
Trichloroethene	4.7	2.0	ug/L	5.00		94	50-150			
Vinyl chloride	4.3	2.0	ug/L	5.00		85	50-150			
o-Xylene	4.3	2.0	ug/L	5.00		86	50-150			
m- & p-Xylenes	8.6	2.0	ug/L	10.0		86	50-150			
Surrogate: 1,2-Dichloroethane-d4	*44.14*		ug/L	*50.0*		*88*	*80-120*			
Surrogate: Toluene-d8	*49.29*		ug/L	*50.0*		*99*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*47.34*		ug/L	*50.0*		*95*	*86-115*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: MACINTOSH RESIDENCE

Project Number: PC-2006-3093
Project Manager: Rusty Stoner

Reported:
08/30/13 16:50

Notes and Definitions

J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA
Project Manager: Rusty Stoner
Project Name: VA Project
Project ID:15100
Sampler(s): SH
P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270						Preservative/Remarks	MSS Lab ID
MacIntosh Residence																	
PC# 20063093																	
PREPM	8-23	900	x			3	X										3082705-01
			x														
			x														
			x														
RAW	8 23	905	x			3	X										3082705-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
SH	8/27 3:20	[signature]			
(Printed) Scott Herbert		(Printed) William Brewer	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks
			☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	4.8°C
(Printed)		(Printed)		Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

21 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: KNUDSON RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/15/13 13:50.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KNUDSON RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:15

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081506-02	Water	08/15/13 09:00	08/15/13 13:50

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KNUDSON RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:15

RAW

3081506-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 18:41	CMK	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:41	CMK	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 18:41	CMK	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 18:41	CMK	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:41	CMK	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:41	CMK	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	

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Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KNUDSON RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:15

RAW

3081506-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 18:41	CMK	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*109 %*		*08/16/13*	*08/16/13 18:41*		
Surrogate: Toluene-d8		*88-110*	*96 %*		*08/16/13*	*08/16/13 18:41*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*89 %*		*08/16/13*	*08/16/13 18:41*		

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KNUDSON RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:15

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KNUDSON RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:15

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*53.19*		ug/L	*50.0*		*106*	*80-120*			
Surrogate: Toluene-d8	*49.99*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.56*		ug/L	*50.0*		*93*	*86-115*			
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	5.2	2.0	ug/L	5.00		103	50-150			
Ethyl tert-butyl ether (ETBE)	5.1	2.0	ug/L	5.00		102	50-150			
Acetone	11.9	10.0	ug/L	10.0		119	50-150			
Benzene	5.3	2.0	ug/L	5.00		107	50-150			
Bromodichloromethane	5.6	2.0	ug/L	5.00		113	50-150			
Bromoform	5.0	2.0	ug/L	5.00		100	50-150			
Bromomethane	5.6	2.0	ug/L	5.00		111	50-150			
2-Butanone (MEK)	6.8	5.0	ug/L	10.0		68	50-150			
tert-Butanol (TBA)	27.7	15.0	ug/L	25.0		111	50-150			
Carbon disulfide	5.7	2.0	ug/L	5.00		113	50-150			
Carbon tetrachloride	5.8	2.0	ug/L	5.00		117	50-150			
Chlorobenzene	5.2	2.0	ug/L	5.00		104	50-150			
Chloroethane	5.5	2.0	ug/L	5.00		110	50-150			
Chloroform	5.8	2.0	ug/L	5.00		116	50-150			
Chloromethane	4.2	2.0	ug/L	5.00		83	50-150			
Dibromochloromethane	5.5	2.0	ug/L	5.00		110	50-150			
1,2-Dibromo-3-chloropropane	5.4	2.0	ug/L	5.00		108	50-150			
1,2-Dibromoethane (EDB)	4.9	2.0	ug/L	5.00		98	50-150			
1,1-Dichloroethane	5.7	2.0	ug/L	5.00		114	50-150			
1,2-Dichloroethane	5.8	2.0	ug/L	5.00		115	50-150			
1,1-Dichloroethene	6.4	2.0	ug/L	5.00		129	50-150			
cis-1,2-Dichloroethene	5.2	2.0	ug/L	5.00		105	50-150			
trans-1,2-Dichloroethene	6.1	2.0	ug/L	5.00		122	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KNUDSON RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:15

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	5.5	2.0	ug/L	5.00		111	50-150			
cis-1,3-Dichloropropene	4.9	2.0	ug/L	5.00		98	50-150			
trans-1,3-Dichloropropene	4.8	2.0	ug/L	5.00		96	50-150			
Ethylbenzene	4.5	2.0	ug/L	5.00		90	50-150			
2-Hexanone	11.3	10.0	ug/L	10.0		113	50-150			
Diisopropyl ether (DIPE)	5.1	2.0	ug/L	5.00		101	50-150			
Methylene chloride	6.6	2.0	ug/L	5.00		132	0-200			
4-Methyl-2-pentanone	10.3	10.0	ug/L	10.0		103	50-150			
Methyl tert-butyl ether (MTBE)	5.5	2.0	ug/L	5.00		110	50-150			
Naphthalene	4.3	2.0	ug/L	5.00		86	50-150			
Styrene	3.9	2.0	ug/L	5.00		79	50-150			
1,1,2,2-Tetrachloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Tetrachloroethene	5.1	2.0	ug/L	5.00		102	50-150			
Toluene	5.0	2.0	ug/L	5.00		100	50-150			
1,1,1-Trichloroethane	5.8	2.0	ug/L	5.00		116	50-150			
1,1,2-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Trichloroethene	5.5	2.0	ug/L	5.00		110	50-150			
Vinyl chloride	5.0	2.0	ug/L	5.00		100	50-150			
o-Xylene	4.5	2.0	ug/L	5.00		90	50-150			
m- & p-Xylenes	8.8	2.0	ug/L	10.0		88	50-150			
Surrogate: 1,2-Dichloroethane-d4	*52.27*		ug/L	*50.0*		*105*	*80-120*			
Surrogate: Toluene-d8	*49.98*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*47.21*		ug/L	*50.0*		*94*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KNUDSON RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:15

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID:15100

Sampler(s): SH

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Knudson Residence																		
PC# 20103028																		
PREPM			x															
			x															
			x															
Field Blank	815	805	x			3	X											3081506-01
RAW	815	900	x			3	X											-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
SH	815				
(Printed) Scott Herbert	1500	(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	4.5°C Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

21 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: KIM RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/15/13 13:50.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KIM RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:18

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081509-02	Water	08/15/13 10:15	08/15/13 13:50

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KIM RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:18

RAW

3081509-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 19:46	CMK	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 19:46	CMK	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 19:46	CMK	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 19:46	CMK	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 19:46	CMK	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 19:46	CMK	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KIM RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:18

RAW

3081509-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 19:46	CMK	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*110 %*		*08/16/13*	*08/16/13 19:46*		
Surrogate: Toluene-d8		*88-110*	*98 %*		*08/16/13*	*08/16/13 19:46*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*91 %*		*08/16/13*	*08/16/13 19:46*		

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KIM RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:18

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KIM RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:18

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*53.19*		ug/L	*50.0*		*106*	*80-120*			
Surrogate: Toluene-d8	*49.99*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.56*		ug/L	*50.0*		*93*	*86-115*			
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	5.2	2.0	ug/L	5.00		103	50-150			
Ethyl tert-butyl ether (ETBE)	5.1	2.0	ug/L	5.00		102	50-150			
Acetone	11.9	10.0	ug/L	10.0		119	50-150			
Benzene	5.3	2.0	ug/L	5.00		107	50-150			
Bromodichloromethane	5.6	2.0	ug/L	5.00		113	50-150			
Bromoform	5.0	2.0	ug/L	5.00		100	50-150			
Bromomethane	5.6	2.0	ug/L	5.00		111	50-150			
2-Butanone (MEK)	6.8	5.0	ug/L	10.0		68	50-150			
tert-Butanol (TBA)	27.7	15.0	ug/L	25.0		111	50-150			
Carbon disulfide	5.7	2.0	ug/L	5.00		113	50-150			
Carbon tetrachloride	5.8	2.0	ug/L	5.00		117	50-150			
Chlorobenzene	5.2	2.0	ug/L	5.00		104	50-150			
Chloroethane	5.5	2.0	ug/L	5.00		110	50-150			
Chloroform	5.8	2.0	ug/L	5.00		116	50-150			
Chloromethane	4.2	2.0	ug/L	5.00		83	50-150			
Dibromochloromethane	5.5	2.0	ug/L	5.00		110	50-150			
1,2-Dibromo-3-chloropropane	5.4	2.0	ug/L	5.00		108	50-150			
1,2-Dibromoethane (EDB)	4.9	2.0	ug/L	5.00		98	50-150			
1,1-Dichloroethane	5.7	2.0	ug/L	5.00		114	50-150			
1,2-Dichloroethane	5.8	2.0	ug/L	5.00		115	50-150			
1,1-Dichloroethene	6.4	2.0	ug/L	5.00		129	50-150			
cis-1,2-Dichloroethene	5.2	2.0	ug/L	5.00		105	50-150			
trans-1,2-Dichloroethene	6.1	2.0	ug/L	5.00		122	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KIM RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:18

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	5.5	2.0	ug/L	5.00		111	50-150			
cis-1,3-Dichloropropene	4.9	2.0	ug/L	5.00		98	50-150			
trans-1,3-Dichloropropene	4.8	2.0	ug/L	5.00		96	50-150			
Ethylbenzene	4.5	2.0	ug/L	5.00		90	50-150			
2-Hexanone	11.3	10.0	ug/L	10.0		113	50-150			
Diisopropyl ether (DIPE)	5.1	2.0	ug/L	5.00		101	50-150			
Methylene chloride	6.6	2.0	ug/L	5.00		132	0-200			
4-Methyl-2-pentanone	10.3	10.0	ug/L	10.0		103	50-150			
Methyl tert-butyl ether (MTBE)	5.5	2.0	ug/L	5.00		110	50-150			
Naphthalene	4.3	2.0	ug/L	5.00		86	50-150			
Styrene	3.9	2.0	ug/L	5.00		79	50-150			
1,1,2,2-Tetrachloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Tetrachloroethene	5.1	2.0	ug/L	5.00		102	50-150			
Toluene	5.0	2.0	ug/L	5.00		100	50-150			
1,1,1-Trichloroethane	5.8	2.0	ug/L	5.00		116	50-150			
1,1,2-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Trichloroethene	5.5	2.0	ug/L	5.00		110	50-150			
Vinyl chloride	5.0	2.0	ug/L	5.00		100	50-150			
o-Xylene	4.5	2.0	ug/L	5.00		90	50-150			
m- & p-Xylenes	8.8	2.0	ug/L	10.0		88	50-150			
Surrogate: 1,2-Dichloroethane-d4	*52.27*		ug/L	*50.0*		*105*	*80-120*			
Surrogate: Toluene-d8	*49.98*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*47.21*		ug/L	*50.0*		*94*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KIM RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:18

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA	Project Manager: Rusty Stoner
Project Name: VA Project	Project ID:15100
Sampler(s): SH	P.O. Number:

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Kim Residence																		
PC# 20103028																		
PREPM			x															
			x															
			x															
Field Blank	815	1020	x			3	X											3081509-01
RAW	815	1015	x			3	2											-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
SH	815	[signature]			
(Printed) Scott Hubert	1:50	(Printed) [illegible]	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

21 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: KAN RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/14/13 12:46.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KAN RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:05

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081501-01	Nonpotable Water	08/14/13 11:10	08/14/13 12:46

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KAN RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:05

RAW

3081501-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 18:40	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:40	ECM	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 18:40	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 18:40	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:40	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:40	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KAN RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:05

RAW

3081501-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 18:40	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*100 %*		*08/16/13*	*08/16/13 18:40*		
Surrogate: Toluene-d8		*88-110*	*102 %*		*08/16/13*	*08/16/13 18:40*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*101 %*		*08/16/13*	*08/16/13 18:40*		

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KAN RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:05

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KAN RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:05

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*49.34*		ug/L	*50.0*		*99*	*80-120*			
Surrogate: Toluene-d8	*51.20*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.10*		ug/L	*50.0*		*100*	*86-115*			
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	3.9	2.0	ug/L	5.00		78	50-150			
Ethyl tert-butyl ether (ETBE)	4.2	2.0	ug/L	5.00		83	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	4.8	2.0	ug/L	5.00		96	50-150			
Bromodichloromethane	5.1	2.0	ug/L	5.00		102	50-150			
Bromoform	4.6	2.0	ug/L	5.00		92	50-150			
Bromomethane	4.5	2.0	ug/L	5.00		91	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	4.7	2.0	ug/L	5.00		94	50-150			
Carbon tetrachloride	4.4	2.0	ug/L	5.00		88	50-150			
Chlorobenzene	5.1	2.0	ug/L	5.00		102	50-150			
Chloroethane	5.0	2.0	ug/L	5.00		100	50-150			
Chloroform	5.1	2.0	ug/L	5.00		103	50-150			
Chloromethane	4.3	2.0	ug/L	5.00		85	50-150			
Dibromochloromethane	5.0	2.0	ug/L	5.00		99	50-150			
1,2-Dibromo-3-chloropropane	3.3	2.0	ug/L	5.00		65	50-150			
1,2-Dibromoethane (EDB)	4.7	2.0	ug/L	5.00		94	50-150			
1,1-Dichloroethane	4.8	2.0	ug/L	5.00		97	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		90	50-150			
cis-1,2-Dichloroethene	4.6	2.0	ug/L	5.00		91	50-150			
trans-1,2-Dichloroethene	4.5	2.0	ug/L	5.00		89	50-150			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KAN RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:05

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	4.9	2.0	ug/L	5.00		97	50-150			
cis-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		82	50-150			
trans-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		83	50-150			
Ethylbenzene	5.0	2.0	ug/L	5.00		99	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	3.9	2.0	ug/L	5.00		79	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.4	2.0	ug/L	5.00		87	50-150			
Naphthalene	3.2	2.0	ug/L	5.00		65	50-150			
Styrene	3.8	2.0	ug/L	5.00		77	50-150			
1,1,2,2-Tetrachloroethane	5.4	2.0	ug/L	5.00		108	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		96	50-150			
Toluene	4.8	2.0	ug/L	5.00		97	50-150			
1,1,1-Trichloroethane	4.4	2.0	ug/L	5.00		89	50-150			
1,1,2-Trichloroethane	4.8	2.0	ug/L	5.00		96	50-150			
Trichloroethene	4.6	2.0	ug/L	5.00		92	50-150			
Vinyl chloride	3.6	2.0	ug/L	5.00		73	50-150			
o-Xylene	4.0	2.0	ug/L	5.00		80	50-150			
m- & p-Xylenes	9.1	2.0	ug/L	10.0		91	50-150			
Surrogate: 1,2-Dichloroethane-d4	*50.04*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*51.02*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*51.10*		ug/L	*50.0*		*102*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KAN RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:05

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410-247-7600 • Fax 410-247-7602
labman@mdspectral.com

Matrix Codes: NW (nonpotable water)
PW (potable water)

Company Name: STONER

Project Manager: Rusty Stoner

Project Name: VA Proj

Project ID: 15150

Sampler(s): Rusty Stoner

P.O. Number:

Analysis Requested: 8260

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	Preservative: 1+1 HCL, H_2SO_4, Methanol, $Na_2S_2O_3$, $NaHCO_3$	Field pH, Residual Chlorine, QC Request, Trip Blank, Field Blank	MSS Lab ID
KAW									
RAW	8/14		✓			3 ✓			3081501-01
Field Blank	8/14		✓			3 ✓			-02

Relinquished by (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
(Printed)	8/14/13 1246	(Printed) Karla McAdoo	(Printed)		(Printed)

Relinquished by (Signature)	Date/Time	Received by Lab: (Signature)
(Printed)		(Printed)

Turn Around Time:
- ☐ Normal (7 day)
- ☐ 5 day
- ☐ 4 day
- ☐ 3 day
- ☐ Rush (2 day)
- ☐ Next Day
- ☐ Other: _____
- ☐ Specific Due Date: _____

Lab Use:
Temp: 3.0c
- ☑ Received on Ice
- ☑ Received same day
- ☑ Preservation Appropriate

Delivery Method:
- Courier
- Client
- UPS
- FedEx
- USPS
- Other:

Special Instructions/QC Requirements & Comments:

Sample Disposal:
- ☐ Return to Client
- ☐ Disposal by lab
- ☐ Archive for _____ days

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

21 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: BOGGS RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/14/13 12:41.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: BOGGS RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:04

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081422-01	Nonpotable Water	08/14/13 12:10	08/14/13 12:41

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
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410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: BOGGS RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:04

RAW

3081422-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 16:02	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 16:02	ECM	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 16:02	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 16:02	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 16:02	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 16:02	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: BOGGS RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:04

RAW

3081422-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 16:02	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*99 %*		*08/16/13*	*08/16/13 16:02*		
Surrogate: Toluene-d8		*88-110*	*101 %*		*08/16/13*	*08/16/13 16:02*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*97 %*		*08/16/13*	*08/16/13 16:02*		

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Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: BOGGS RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:04

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: BOGGS RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:04

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*49.34*		ug/L	*50.0*		*99*	*80-120*			
Surrogate: Toluene-d8	*51.20*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.10*		ug/L	*50.0*		*100*	*86-115*			
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	3.9	2.0	ug/L	5.00		78	50-150			
Ethyl tert-butyl ether (ETBE)	4.2	2.0	ug/L	5.00		83	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	4.8	2.0	ug/L	5.00		96	50-150			
Bromodichloromethane	5.1	2.0	ug/L	5.00		102	50-150			
Bromoform	4.6	2.0	ug/L	5.00		92	50-150			
Bromomethane	4.5	2.0	ug/L	5.00		91	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	4.7	2.0	ug/L	5.00		94	50-150			
Carbon tetrachloride	4.4	2.0	ug/L	5.00		88	50-150			
Chlorobenzene	5.1	2.0	ug/L	5.00		102	50-150			
Chloroethane	5.0	2.0	ug/L	5.00		100	50-150			
Chloroform	5.1	2.0	ug/L	5.00		103	50-150			
Chloromethane	4.3	2.0	ug/L	5.00		85	50-150			
Dibromochloromethane	5.0	2.0	ug/L	5.00		99	50-150			
1,2-Dibromo-3-chloropropane	3.3	2.0	ug/L	5.00		65	50-150			
1,2-Dibromoethane (EDB)	4.7	2.0	ug/L	5.00		94	50-150			
1,1-Dichloroethane	4.8	2.0	ug/L	5.00		97	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		90	50-150			
cis-1,2-Dichloroethene	4.6	2.0	ug/L	5.00		91	50-150			
trans-1,2-Dichloroethene	4.5	2.0	ug/L	5.00		89	50-150			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: BOGGS RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:04

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	4.9	2.0	ug/L	5.00		97	50-150			
cis-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		82	50-150			
trans-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		83	50-150			
Ethylbenzene	5.0	2.0	ug/L	5.00		99	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	3.9	2.0	ug/L	5.00		79	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.4	2.0	ug/L	5.00		87	50-150			
Naphthalene	3.2	2.0	ug/L	5.00		65	50-150			
Styrene	3.8	2.0	ug/L	5.00		77	50-150			
1,1,2,2-Tetrachloroethane	5.4	2.0	ug/L	5.00		108	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		96	50-150			
Toluene	4.8	2.0	ug/L	5.00		97	50-150			
1,1,1-Trichloroethane	4.4	2.0	ug/L	5.00		89	50-150			
1,1,2-Trichloroethane	4.8	2.0	ug/L	5.00		96	50-150			
Trichloroethene	4.6	2.0	ug/L	5.00		92	50-150			
Vinyl chloride	3.6	2.0	ug/L	5.00		73	50-150			
o-Xylene	4.0	2.0	ug/L	5.00		80	50-150			
m- & p-Xylenes	9.1	2.0	ug/L	10.0		91	50-150			
Surrogate: 1,2-Dichloroethane-d4	*50.04*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*51.02*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*51.10*		ug/L	*50.0*		*102*	*86-115*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: BOGGS RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:04

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID:15100

Sampler(s): Rusty Stoner

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Boggs Residence																		
PC# 20103028																		
~~BDEPM~~			x															
			x															
			x															
			x															
RAW	8/14/13	12:10 PM	x			3	1											3081422-01
Field Blank	8/14/13	12:10 PM	X			3	1											3081422-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
(Printed) Rusty Stoner	8/14/13 12:41PM	(Printed) Kurla McAdoo	(Printed)		(Printed)
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks	
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	Page ____ of ____	

MSS-F001-09/12

* 3.0 on ice

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

23 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: WRNS ASSOCIATES

Enclosed are the results of analyses for samples received by the laboratory on 08/14/13 18:15.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081424-01	Nonpotable Water	08/14/13 10:10	08/14/13 18:15
FIELD BLANK		3081424-02	Nonpotable Water	08/14/13 10:10	08/14/13 18:15

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
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VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

RAW

3081424-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 18:01	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:01	ECM	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 18:01	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 18:01	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Chloroform	**5.1**	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:01	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 18:01	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

RAW

3081424-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 18:01	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*95 %*		*08/16/13*	*08/16/13 18:01*		
Surrogate: Toluene-d8		*88-110*	*101 %*		*08/16/13*	*08/16/13 18:01*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*100 %*		*08/16/13*	*08/16/13 18:01*		

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Analytical Results

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VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

FIELD BLANK

3081424-02 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/19/13	08/19/13 17:55	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Acetone	ND	ug/L	10.0	1	08/19/13	08/19/13 17:55	ECM	
Benzene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Bromoform	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Bromomethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/19/13	08/19/13 17:55	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/19/13	08/19/13 17:55	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Chloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Chloroform	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Chloromethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/19/13	08/19/13 17:55	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/19/13	08/19/13 17:55	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Naphthalene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Styrene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

FIELD BLANK

3081424-02 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Tetrachloroethene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Toluene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	
Xylenes, Total	**1.2**	ug/L	2.0	1	08/19/13	08/19/13 17:55	ECM	J
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*103 %*		*08/19/13*	*08/19/13 17:55*		
Surrogate: Toluene-d8		*88-110*	*104 %*		*08/19/13*	*08/19/13 17:55*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*103 %*		*08/19/13*	*08/19/13 17:55*		

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Analytical Results

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VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Analytical Results

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VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*49.34*		ug/L	*50.0*		*99*	*80-120*			
Surrogate: Toluene-d8	*51.20*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.10*		ug/L	*50.0*		*100*	*86-115*			
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	3.9	2.0	ug/L	5.00		78	50-150			
Ethyl tert-butyl ether (ETBE)	4.2	2.0	ug/L	5.00		83	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	4.8	2.0	ug/L	5.00		96	50-150			
Bromodichloromethane	5.1	2.0	ug/L	5.00		102	50-150			
Bromoform	4.6	2.0	ug/L	5.00		92	50-150			
Bromomethane	4.5	2.0	ug/L	5.00		91	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	4.7	2.0	ug/L	5.00		94	50-150			
Carbon tetrachloride	4.4	2.0	ug/L	5.00		88	50-150			
Chlorobenzene	5.1	2.0	ug/L	5.00		102	50-150			
Chloroethane	5.0	2.0	ug/L	5.00		100	50-150			
Chloroform	5.1	2.0	ug/L	5.00		103	50-150			
Chloromethane	4.3	2.0	ug/L	5.00		85	50-150			
Dibromochloromethane	5.0	2.0	ug/L	5.00		99	50-150			
1,2-Dibromo-3-chloropropane	3.3	2.0	ug/L	5.00		65	50-150			
1,2-Dibromoethane (EDB)	4.7	2.0	ug/L	5.00		94	50-150			
1,1-Dichloroethane	4.8	2.0	ug/L	5.00		97	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		90	50-150			
cis-1,2-Dichloroethene	4.6	2.0	ug/L	5.00		91	50-150			
trans-1,2-Dichloroethene	4.5	2.0	ug/L	5.00		89	50-150			

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Analytical Results

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VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	4.9	2.0	ug/L	5.00		97	50-150			
cis-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		82	50-150			
trans-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		83	50-150			
Ethylbenzene	5.0	2.0	ug/L	5.00		99	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	3.9	2.0	ug/L	5.00		79	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.4	2.0	ug/L	5.00		87	50-150			
Naphthalene	3.2	2.0	ug/L	5.00		65	50-150			
Styrene	3.8	2.0	ug/L	5.00		77	50-150			
1,1,2,2-Tetrachloroethane	5.4	2.0	ug/L	5.00		108	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		96	50-150			
Toluene	4.8	2.0	ug/L	5.00		97	50-150			
1,1,1-Trichloroethane	4.4	2.0	ug/L	5.00		89	50-150			
1,1,2-Trichloroethane	4.8	2.0	ug/L	5.00		96	50-150			
Trichloroethene	4.6	2.0	ug/L	5.00		92	50-150			
Vinyl chloride	3.6	2.0	ug/L	5.00		73	50-150			
o-Xylene	4.0	2.0	ug/L	5.00		80	50-150			
m- & p-Xylenes	9.1	2.0	ug/L	10.0		91	50-150			
Surrogate: 1,2-Dichloroethane-d4	*50.04*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*51.02*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*51.10*		ug/L	*50.0*		*102*	*86-115*			
Batch B308133 - GCMS-WATER-VOLATILES										
Blank (B308133-BLK1)				Prepared & Analyzed: 08/19/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308133 - GCMS-WATER-VOLATILES										
Blank (B308133-BLK1)				Prepared & Analyzed: 08/19/13						
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*51.52*		ug/L	*50.0*		*103*	*80-120*			
Surrogate: Toluene-d8	*52.41*		ug/L	*50.0*		*105*	*88-110*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308133 - GCMS-WATER-VOLATILES										
Blank (B308133-BLK1)				Prepared & Analyzed: 08/19/13						
Surrogate: 4-Bromofluorobenzene	*52.51*		ug/L	*50.0*		*105*	*86-115*			
LCS (B308133-BS1)				Prepared & Analyzed: 08/19/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	4.3	2.0	ug/L	5.00		86	50-150			
Ethyl tert-butyl ether (ETBE)	4.5	2.0	ug/L	5.00		90	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	5.1	2.0	ug/L	5.00		101	50-150			
Bromodichloromethane	5.3	2.0	ug/L	5.00		105	50-150			
Bromoform	5.1	2.0	ug/L	5.00		102	50-150			
Bromomethane	4.3	2.0	ug/L	5.00		86	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	20.7	15.0	ug/L	25.0		83	50-150			
Carbon disulfide	4.8	2.0	ug/L	5.00		96	50-150			
Carbon tetrachloride	4.7	2.0	ug/L	5.00		93	50-150			
Chlorobenzene	5.7	2.0	ug/L	5.00		115	50-150			
Chloroethane	4.6	2.0	ug/L	5.00		93	50-150			
Chloroform	5.4	2.0	ug/L	5.00		108	50-150			
Chloromethane	4.5	2.0	ug/L	5.00		89	50-150			
Dibromochloromethane	5.3	2.0	ug/L	5.00		106	50-150			
1,2-Dibromo-3-chloropropane	4.9	2.0	ug/L	5.00		98	50-150			
1,2-Dibromoethane (EDB)	5.1	2.0	ug/L	5.00		101	50-150			
1,1-Dichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
1,2-Dichloroethane	5.3	2.0	ug/L	5.00		105	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		89	50-150			
cis-1,2-Dichloroethene	5.0	2.0	ug/L	5.00		100	50-150			
trans-1,2-Dichloroethene	4.9	2.0	ug/L	5.00		99	50-150			
1,2-Dichloropropane	5.1	2.0	ug/L	5.00		101	50-150			
cis-1,3-Dichloropropene	4.3	2.0	ug/L	5.00		87	50-150			
trans-1,3-Dichloropropene	4.2	2.0	ug/L	5.00		85	50-150			
Ethylbenzene	5.0	2.0	ug/L	5.00		100	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	4.0	2.0	ug/L	5.00		80	50-150			
Methylene chloride	6.1	2.0	ug/L	5.00		123	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.7	2.0	ug/L	5.00		94	50-150			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308133 - GCMS-WATER-VOLATILES										
LCS (B308133-BS1)				Prepared & Analyzed: 08/19/13						
Naphthalene	3.9	2.0	ug/L	5.00		79	50-150			
Styrene	4.3	2.0	ug/L	5.00		86	50-150			
1,1,2,2-Tetrachloroethane	5.4	2.0	ug/L	5.00		108	50-150			
Tetrachloroethene	5.1	2.0	ug/L	5.00		102	50-150			
Toluene	5.2	2.0	ug/L	5.00		105	50-150			
1,1,1-Trichloroethane	5.1	2.0	ug/L	5.00		102	50-150			
1,1,2-Trichloroethane	5.7	2.0	ug/L	5.00		115	50-150			
Trichloroethene	5.0	2.0	ug/L	5.00		99	50-150			
Vinyl chloride	3.6	2.0	ug/L	5.00		73	50-150			
o-Xylene	4.3	2.0	ug/L	5.00		85	50-150			
m- & p-Xylenes	9.6	2.0	ug/L	10.0		96	50-150			
Surrogate: 1,2-Dichloroethane-d4	*51.80*		ug/L	*50.0*		*104*	*80-120*			
Surrogate: Toluene-d8	*50.72*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*51.53*		ug/L	*50.0*		*103*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WRNS ASSOCIATES

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/23/13 09:30

Notes and Definitions

J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): Rusty Stoner

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
WRNS Associates																		
PC# 20103028																		
[redacted]			x															
			x															
			x															
			x															
RAW	8/14/13	10:10 AM	x			3	1											3081424-01
Field Blank	8/14/13	10:10 AM	X			3	1											3081424-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Rusty Stoner	8/14/13	K. McAdoo			
(Printed) Rusty Stoner	12:4pm	(Printed) Karla McAdoo	(Printed)		(Printed)
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks	
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	Page ____ of ____	

MSS-F001-09/12

3.0 on ice

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

04 September 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: KERMANCHI RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/30/13 09:45.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KERMANCHI RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:25

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3083008-01	Water	08/28/13 08:30	08/30/13 09:45

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KERMANCHI RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:25

RAW

3083008-01 (Water)
Sample Date: 08/28/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/30/13	08/30/13 18:44	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Acetone	ND	ug/L	10.0	1	08/30/13	08/30/13 18:44	ECM	
Benzene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Bromoform	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Bromomethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/30/13	08/30/13 18:44	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/30/13	08/30/13 18:44	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Chloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Chloroform	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Chloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/30/13	08/30/13 18:44	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/30/13	08/30/13 18:44	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KERMANCHI RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:25

RAW

3083008-01 (Water)
Sample Date: 08/28/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Styrene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Toluene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/30/13	08/30/13 18:44	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*97 %*		*08/30/13*	*08/30/13 18:44*		
Surrogate: Toluene-d8		*88-110*	*100 %*		*08/30/13*	*08/30/13 18:44*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*96 %*		*08/30/13*	*08/30/13 18:44*		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KERMANCHI RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:25

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Blank (B308230-BLK1)				Prepared & Analyzed: 08/30/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KERMANCHI RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:25

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Blank (B308230-BLK1)				Prepared & Analyzed: 08/30/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*46.79*		ug/L	*50.0*		*94*	*80-120*			
Surrogate: Toluene-d8	*50.33*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.22*		ug/L	*50.0*		*92*	*86-115*			
LCS (B308230-BS1)				Prepared & Analyzed: 08/30/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	4.6	2.0	ug/L	5.00		92	50-150			
Ethyl tert-butyl ether (ETBE)	4.9	2.0	ug/L	5.00		98	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	5.1	2.0	ug/L	5.00		101	50-150			
Bromodichloromethane	5.2	2.0	ug/L	5.00		104	50-150			
Bromoform	4.5	2.0	ug/L	5.00		90	50-150			
Bromomethane	5.9	2.0	ug/L	5.00		119	50-150			
2-Butanone (MEK)	6.3	10.0	ug/L	10.0		63	50-150			J
tert-Butanol (TBA)	21.3	15.0	ug/L	25.0		85	50-150			
Carbon disulfide	5.6	2.0	ug/L	5.00		111	50-150			
Carbon tetrachloride	5.3	2.0	ug/L	5.00		106	50-150			
Chlorobenzene	5.0	2.0	ug/L	5.00		99	50-150			
Chloroethane	5.1	2.0	ug/L	5.00		102	50-150			
Chloroform	5.1	2.0	ug/L	5.00		101	50-150			
Chloromethane	5.0	2.0	ug/L	5.00		100	50-150			
Dibromochloromethane	5.1	2.0	ug/L	5.00		102	50-150			
1,2-Dibromo-3-chloropropane	4.4	2.0	ug/L	5.00		88	50-150			
1,2-Dibromoethane (EDB)	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethane	5.1	2.0	ug/L	5.00		102	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		101	50-150			
1,1-Dichloroethene	5.8	2.0	ug/L	5.00		116	50-150			
cis-1,2-Dichloroethene	4.7	2.0	ug/L	5.00		94	50-150			
trans-1,2-Dichloroethene	5.4	2.0	ug/L	5.00		107	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KERMANCHI RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:25

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
LCS (B308230-BS1)				Prepared & Analyzed: 08/30/13						
1,2-Dichloropropane	5.4	2.0	ug/L	5.00		107	50-150			
cis-1,3-Dichloropropene	5.0	2.0	ug/L	5.00		99	50-150			
trans-1,3-Dichloropropene	4.8	2.0	ug/L	5.00		96	50-150			
Ethylbenzene	4.6	2.0	ug/L	5.00		93	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	5.0	2.0	ug/L	5.00		101	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	10.0	10.0	ug/L	10.0		100	50-150			
Methyl tert-butyl ether (MTBE)	5.0	2.0	ug/L	5.00		99	50-150			
Naphthalene	4.5	2.0	ug/L	5.00		89	50-150			
Styrene	4.1	2.0	ug/L	5.00		83	50-150			
1,1,2,2-Tetrachloroethane	4.7	2.0	ug/L	5.00		94	50-150			
Tetrachloroethene	5.3	2.0	ug/L	5.00		105	50-150			
Toluene	5.1	2.0	ug/L	5.00		102	50-150			
1,1,1-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
1,1,2-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Trichloroethene	5.1	2.0	ug/L	5.00		103	50-150			
Vinyl chloride	4.8	2.0	ug/L	5.00		97	50-150			
o-Xylene	4.9	2.0	ug/L	5.00		97	50-150			
m- & p-Xylenes	9.0	2.0	ug/L	10.0		90	50-150			
Surrogate: 1,2-Dichloroethane-d4	*46.96*		ug/L	*50.0*		*94*	*80-120*			
Surrogate: Toluene-d8	*50.63*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*48.83*		ug/L	*50.0*		*98*	*86-115*			
Matrix Spike (B308230-MS1)		**Source: 3083009-02**		Prepared & Analyzed: 08/30/13						
Benzene	49.3	2.0	ug/L	50.0	ND	99	76-127			
Chlorobenzene	51.8	2.0	ug/L	50.0	ND	104	75-130			
1,1-Dichloroethene	49.5	2.0	ug/L	50.0	ND	99	61-145			
Toluene	49.7	2.0	ug/L	50.0	ND	99	76-125			
Trichloroethene	48.7	2.0	ug/L	50.0	ND	97	71-120			
Surrogate: 1,2-Dichloroethane-d4	*46.73*		ug/L	*50.0*		*93*	*80-120*			
Surrogate: Toluene-d8	*49.78*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.20*		ug/L	*50.0*		*92*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KERMANCHI RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:25

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Matrix Spike Dup (B308230-MSD1)		**Source: 3083009-02**		Prepared & Analyzed: 08/30/13						
Benzene	47.2	2.0	ug/L	50.0	ND	94	76-127	4	11	
Chlorobenzene	45.0	2.0	ug/L	50.0	ND	90	75-130	14	13	
1,1-Dichloroethene	49.0	2.0	ug/L	50.0	ND	98	61-145	1	14	
Toluene	46.4	2.0	ug/L	50.0	ND	93	76-125	7	13	
Trichloroethene	45.7	2.0	ug/L	50.0	ND	91	71-120	6	14	
Surrogate: 1,2-Dichloroethane-d4	*46.65*		ug/L	*50.0*		*93*	*80-120*			
Surrogate: Toluene-d8	*49.56*		ug/L	*50.0*		*99*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*45.86*		ug/L	*50.0*		*92*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: KERMANCHI RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:25

Notes and Definitions

J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): Rusty Stoner

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270	Preservative/Remarks	MSS Lab ID
Kermanchi Residence												
PC# 20103028												
~~[illegible]~~			x									
			x									
			x									
			x									
RAW	8/28/13	8:30 AM	x			3	1					3083008-01
Field Blank	8/28/13	8:38 AM	X			3	1					3083008-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Rusty Stoner	8/30 9:45	[signature]			
(Printed) Rusty Stoner		(Printed) S Hamone	(Printed)		(Printed)
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks	
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	3.5°C on Ice	

Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

22 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: GEORGE RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/14/13 12:41.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081421-01	Nonpotable Water	08/14/13 09:10	08/14/13 12:41
FIELD BLANK		3081421-02	Nonpotable Water	08/14/13 09:10	08/14/13 12:41

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

RAW

3081421-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 14:45	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 14:45	ECM	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 14:45	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 14:45	ECM	
Carbon disulfide	**0.6**	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	J
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 14:45	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 14:45	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

RAW

3081421-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 14:45	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*100 %*		*08/16/13*	*08/16/13 14:45*		
Surrogate: Toluene-d8		*88-110*	*103 %*		*08/16/13*	*08/16/13 14:45*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*98 %*		*08/16/13*	*08/16/13 14:45*		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

FIELD BLANK

3081421-02 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/20/13	08/20/13 16:59	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Acetone	ND	ug/L	10.0	1	08/20/13	08/20/13 16:59	ECM	
Benzene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Bromoform	**0.8**	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	J
Bromomethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/20/13	08/20/13 16:59	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/20/13	08/20/13 16:59	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Chloroethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Chloroform	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Chloromethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/20/13	08/20/13 16:59	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/20/13	08/20/13 16:59	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Naphthalene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Styrene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

FIELD BLANK

3081421-02 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Tetrachloroethene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Toluene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	
Xylenes, Total	**1.4**	ug/L	2.0	1	08/20/13	08/20/13 16:59	ECM	J
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*100 %*		*08/20/13*	*08/20/13 16:59*		
Surrogate: Toluene-d8		*88-110*	*103 %*		*08/20/13*	*08/20/13 16:59*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*97 %*		*08/20/13*	*08/20/13 16:59*		

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Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
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www.mdspectral.com
VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*49.34*		ug/L	*50.0*		*99*	*80-120*			
Surrogate: Toluene-d8	*51.20*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.10*		ug/L	*50.0*		*100*	*86-115*			
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	3.9	2.0	ug/L	5.00		78	50-150			
Ethyl tert-butyl ether (ETBE)	4.2	2.0	ug/L	5.00		83	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	4.8	2.0	ug/L	5.00		96	50-150			
Bromodichloromethane	5.1	2.0	ug/L	5.00		102	50-150			
Bromoform	4.6	2.0	ug/L	5.00		92	50-150			
Bromomethane	4.5	2.0	ug/L	5.00		91	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	4.7	2.0	ug/L	5.00		94	50-150			
Carbon tetrachloride	4.4	2.0	ug/L	5.00		88	50-150			
Chlorobenzene	5.1	2.0	ug/L	5.00		102	50-150			
Chloroethane	5.0	2.0	ug/L	5.00		100	50-150			
Chloroform	5.1	2.0	ug/L	5.00		103	50-150			
Chloromethane	4.3	2.0	ug/L	5.00		85	50-150			
Dibromochloromethane	5.0	2.0	ug/L	5.00		99	50-150			
1,2-Dibromo-3-chloropropane	3.3	2.0	ug/L	5.00		65	50-150			
1,2-Dibromoethane (EDB)	4.7	2.0	ug/L	5.00		94	50-150			
1,1-Dichloroethane	4.8	2.0	ug/L	5.00		97	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		90	50-150			
cis-1,2-Dichloroethene	4.6	2.0	ug/L	5.00		91	50-150			
trans-1,2-Dichloroethene	4.5	2.0	ug/L	5.00		89	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	4.9	2.0	ug/L	5.00		97	50-150			
cis-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		82	50-150			
trans-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		83	50-150			
Ethylbenzene	5.0	2.0	ug/L	5.00		99	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	3.9	2.0	ug/L	5.00		79	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.4	2.0	ug/L	5.00		87	50-150			
Naphthalene	3.2	2.0	ug/L	5.00		65	50-150			
Styrene	3.8	2.0	ug/L	5.00		77	50-150			
1,1,2,2-Tetrachloroethane	5.4	2.0	ug/L	5.00		108	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		96	50-150			
Toluene	4.8	2.0	ug/L	5.00		97	50-150			
1,1,1-Trichloroethane	4.4	2.0	ug/L	5.00		89	50-150			
1,1,2-Trichloroethane	4.8	2.0	ug/L	5.00		96	50-150			
Trichloroethene	4.6	2.0	ug/L	5.00		92	50-150			
Vinyl chloride	3.6	2.0	ug/L	5.00		73	50-150			
o-Xylene	4.0	2.0	ug/L	5.00		80	50-150			
m- & p-Xylenes	9.1	2.0	ug/L	10.0		91	50-150			
Surrogate: 1,2-Dichloroethane-d4	*50.04*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*51.02*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*51.10*		ug/L	*50.0*		*102*	*86-115*			
Batch B308149 - GCMS-WATER-VOLATILES										
Blank (B308149-BLK1)				Prepared & Analyzed: 08/20/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
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VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308149 - GCMS-WATER-VOLATILES										
Blank (B308149-BLK1)				Prepared & Analyzed: 08/20/13						
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*50.59*		ug/L	*50.0*		*101*	*80-120*			
Surrogate: Toluene-d8	*50.98*		ug/L	*50.0*		*102*	*88-110*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
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VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308149 - GCMS-WATER-VOLATILES										
Blank (B308149-BLK1)				Prepared & Analyzed: 08/20/13						
Surrogate: 4-Bromofluorobenzene	*51.37*		ug/L	*50.0*		*103*	*86-115*			
LCS (B308149-BS1)				Prepared & Analyzed: 08/20/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	4.1	2.0	ug/L	5.00		82	50-150			
Ethyl tert-butyl ether (ETBE)	4.1	2.0	ug/L	5.00		81	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	4.7	2.0	ug/L	5.00		94	50-150			
Bromodichloromethane	5.0	2.0	ug/L	5.00		100	50-150			
Bromoform	4.1	2.0	ug/L	5.00		82	50-150			
Bromomethane	4.9	2.0	ug/L	5.00		98	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	4.8	2.0	ug/L	5.00		95	50-150			
Carbon tetrachloride	4.4	2.0	ug/L	5.00		88	50-150			
Chlorobenzene	4.8	2.0	ug/L	5.00		95	50-150			
Chloroethane	4.8	2.0	ug/L	5.00		97	50-150			
Chloroform	5.2	2.0	ug/L	5.00		104	50-150			
Chloromethane	5.1	2.0	ug/L	5.00		102	50-150			
Dibromochloromethane	4.6	2.0	ug/L	5.00		92	50-150			
1,2-Dibromo-3-chloropropane	3.8	2.0	ug/L	5.00		77	50-150			
1,2-Dibromoethane (EDB)	4.2	2.0	ug/L	5.00		84	50-150			
1,1-Dichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		100	50-150			
1,1-Dichloroethene	4.6	2.0	ug/L	5.00		92	50-150			
cis-1,2-Dichloroethene	4.4	2.0	ug/L	5.00		87	50-150			
trans-1,2-Dichloroethene	4.7	2.0	ug/L	5.00		93	50-150			
1,2-Dichloropropane	4.8	2.0	ug/L	5.00		95	50-150			
cis-1,3-Dichloropropene	3.9	2.0	ug/L	5.00		78	50-150			
trans-1,3-Dichloropropene	3.7	2.0	ug/L	5.00		74	50-150			
Ethylbenzene	4.7	2.0	ug/L	5.00		94	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	4.2	2.0	ug/L	5.00		84	50-150			
Methylene chloride	5.3	2.0	ug/L	5.00		106	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.4	2.0	ug/L	5.00		87	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308149 - GCMS-WATER-VOLATILES										
LCS (B308149-BS1)				Prepared & Analyzed: 08/20/13						
Naphthalene	3.0	2.0	ug/L	5.00		60	50-150			
Styrene	3.5	2.0	ug/L	5.00		70	50-150			
1,1,2,2-Tetrachloroethane	5.1	2.0	ug/L	5.00		102	50-150			
Tetrachloroethene	4.6	2.0	ug/L	5.00		91	50-150			
Toluene	4.4	2.0	ug/L	5.00		88	50-150			
1,1,1-Trichloroethane	4.6	2.0	ug/L	5.00		91	50-150			
1,1,2-Trichloroethane	4.7	2.0	ug/L	5.00		95	50-150			
Trichloroethene	4.5	2.0	ug/L	5.00		90	50-150			
Vinyl chloride	4.1	2.0	ug/L	5.00		81	50-150			
o-Xylene	3.7	2.0	ug/L	5.00		75	50-150			
m- & p-Xylenes	8.3	2.0	ug/L	10.0		83	50-150			
Surrogate: 1,2-Dichloroethane-d4	*52.22*		ug/L	*50.0*		*104*	*80-120*			
Surrogate: Toluene-d8	*50.62*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.63*		ug/L	*50.0*		*101*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: GEORGE RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:33

Notes and Definitions

J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): Rusty Stoner

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
George Residence																		
PC# 20103028																		
[redacted]			x															
			x															
			x															
			x															
RAW	8/14/13	9:19 AM	x			2	1											3081421-01
Field Blank	8/14/13	9:10 AM				3	1											3081421-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Rusty Stoner	8/14/13 12:4 pm	K. McAdoo			
(Printed) Rusty Stoner		(Printed) Karla McAdoo	(Printed)		(Printed)
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks	
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	Page ____ of ____	

MSS-F001-09/12

30 on ice

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

04 September 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: HEAD RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/30/13 09:45.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: HEAD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:23

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3083006-01	Water	08/28/13 11:00	08/30/13 09:45

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: HEAD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:23

RAW

3083006-01 (Water)
Sample Date: 08/28/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/30/13	08/30/13 18:13	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Acetone	ND	ug/L	10.0	1	08/30/13	08/30/13 18:13	ECM	
Benzene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Bromoform	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Bromomethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/30/13	08/30/13 18:13	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/30/13	08/30/13 18:13	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Chloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Chloroform	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Chloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/30/13	08/30/13 18:13	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/30/13	08/30/13 18:13	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: HEAD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:23

RAW

3083006-01 (Water)
Sample Date: 08/28/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Styrene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Toluene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/30/13	08/30/13 18:13	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*94 %*		*08/30/13*	*08/30/13 18:13*		
Surrogate: Toluene-d8		*88-110*	*100 %*		*08/30/13*	*08/30/13 18:13*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*97 %*		*08/30/13*	*08/30/13 18:13*		

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Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
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www.mdspectral.com
VELAP ID 460040

Project: HEAD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:23

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Blank (B308230-BLK1)				Prepared & Analyzed: 08/30/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: HEAD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:23

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Blank (B308230-BLK1)				Prepared & Analyzed: 08/30/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*46.79*		ug/L	*50.0*		*94*	*80-120*			
Surrogate: Toluene-d8	*50.33*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.22*		ug/L	*50.0*		*92*	*86-115*			
LCS (B308230-BS1)				Prepared & Analyzed: 08/30/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	4.6	2.0	ug/L	5.00		92	50-150			
Ethyl tert-butyl ether (ETBE)	4.9	2.0	ug/L	5.00		98	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	5.1	2.0	ug/L	5.00		101	50-150			
Bromodichloromethane	5.2	2.0	ug/L	5.00		104	50-150			
Bromoform	4.5	2.0	ug/L	5.00		90	50-150			
Bromomethane	5.9	2.0	ug/L	5.00		119	50-150			
2-Butanone (MEK)	6.3	10.0	ug/L	10.0		63	50-150			J
tert-Butanol (TBA)	21.3	15.0	ug/L	25.0		85	50-150			
Carbon disulfide	5.6	2.0	ug/L	5.00		111	50-150			
Carbon tetrachloride	5.3	2.0	ug/L	5.00		106	50-150			
Chlorobenzene	5.0	2.0	ug/L	5.00		99	50-150			
Chloroethane	5.1	2.0	ug/L	5.00		102	50-150			
Chloroform	5.1	2.0	ug/L	5.00		101	50-150			
Chloromethane	5.0	2.0	ug/L	5.00		100	50-150			
Dibromochloromethane	5.1	2.0	ug/L	5.00		102	50-150			
1,2-Dibromo-3-chloropropane	4.4	2.0	ug/L	5.00		88	50-150			
1,2-Dibromoethane (EDB)	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethane	5.1	2.0	ug/L	5.00		102	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		101	50-150			
1,1-Dichloroethene	5.8	2.0	ug/L	5.00		116	50-150			
cis-1,2-Dichloroethene	4.7	2.0	ug/L	5.00		94	50-150			
trans-1,2-Dichloroethene	5.4	2.0	ug/L	5.00		107	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: HEAD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:23

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
LCS (B308230-BS1)				Prepared & Analyzed: 08/30/13						
1,2-Dichloropropane	5.4	2.0	ug/L	5.00		107	50-150			
cis-1,3-Dichloropropene	5.0	2.0	ug/L	5.00		99	50-150			
trans-1,3-Dichloropropene	4.8	2.0	ug/L	5.00		96	50-150			
Ethylbenzene	4.6	2.0	ug/L	5.00		93	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	5.0	2.0	ug/L	5.00		101	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	10.0	10.0	ug/L	10.0		100	50-150			
Methyl tert-butyl ether (MTBE)	5.0	2.0	ug/L	5.00		99	50-150			
Naphthalene	4.5	2.0	ug/L	5.00		89	50-150			
Styrene	4.1	2.0	ug/L	5.00		83	50-150			
1,1,2,2-Tetrachloroethane	4.7	2.0	ug/L	5.00		94	50-150			
Tetrachloroethene	5.3	2.0	ug/L	5.00		105	50-150			
Toluene	5.1	2.0	ug/L	5.00		102	50-150			
1,1,1-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
1,1,2-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Trichloroethene	5.1	2.0	ug/L	5.00		103	50-150			
Vinyl chloride	4.8	2.0	ug/L	5.00		97	50-150			
o-Xylene	4.9	2.0	ug/L	5.00		97	50-150			
m- & p-Xylenes	9.0	2.0	ug/L	10.0		90	50-150			
Surrogate: 1,2-Dichloroethane-d4	*46.96*		ug/L	*50.0*		*94*	*80-120*			
Surrogate: Toluene-d8	*50.63*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*48.83*		ug/L	*50.0*		*98*	*86-115*			
Matrix Spike (B308230-MS1)		**Source: 3083009-02**		Prepared & Analyzed: 08/30/13						
Benzene	49.3	2.0	ug/L	50.0	ND	99	76-127			
Chlorobenzene	51.8	2.0	ug/L	50.0	ND	104	75-130			
1,1-Dichloroethene	49.5	2.0	ug/L	50.0	ND	99	61-145			
Toluene	49.7	2.0	ug/L	50.0	ND	99	76-125			
Trichloroethene	48.7	2.0	ug/L	50.0	ND	97	71-120			
Surrogate: 1,2-Dichloroethane-d4	*46.73*		ug/L	*50.0*		*93*	*80-120*			
Surrogate: Toluene-d8	*49.78*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.20*		ug/L	*50.0*		*92*	*86-115*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: HEAD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:23

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308230 - GCMS-WATER-VOLATILES										
Matrix Spike Dup (B308230-MSD1)		**Source: 3083009-02**		Prepared & Analyzed: 08/30/13						
Benzene	47.2	2.0	ug/L	50.0	ND	94	76-127	4	11	
Chlorobenzene	45.0	2.0	ug/L	50.0	ND	90	75-130	14	13	
1,1-Dichloroethene	49.0	2.0	ug/L	50.0	ND	98	61-145	1	14	
Toluene	46.4	2.0	ug/L	50.0	ND	93	76-125	7	13	
Trichloroethene	45.7	2.0	ug/L	50.0	ND	91	71-120	6	14	
Surrogate: 1,2-Dichloroethane-d4	*46.65*		ug/L	*50.0*		*93*	*80-120*			
Surrogate: Toluene-d8	*49.56*		ug/L	*50.0*		*99*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*45.86*		ug/L	*50.0*		*92*	*86-115*			

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: HEAD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
09/04/13 13:23

Notes and Definitions

J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): Rusty Stoner

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410-247-7600 • Fax 410-247-7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Head Residence																		
PC # 20103028																		
PREPM			x															
			x															
			x															
			x															
RAW	8/28/13	11:00 AM	x			3	1											3083006-01ABC
Field Blank	8/28/13	11:00 AM	✓			3	1											3083006-02ABC

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Rusty Stoner	8/30	[signature]			
(Printed) Rusty Stoner	945	(Printed) S Hanna	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks
(Printed)		(Printed)	Data Summary Above + QC Above + Calibration Above + Raw Data EDD	3.5°C on Ice

Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

21 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: TERPAK RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/15/13 13:50.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: TERPAK RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:17

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081507-02	Water	08/15/13 10:45	08/15/13 13:50

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: TERPAK RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:17

RAW

3081507-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 19:14	CMK	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 19:14	CMK	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 19:14	CMK	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 19:14	CMK	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 19:14	CMK	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 19:14	CMK	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: TERPAK RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:17

RAW

3081507-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 19:14	CMK	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*111 %*		*08/16/13*	*08/16/13 19:14*		
Surrogate: Toluene-d8		*88-110*	*98 %*		*08/16/13*	*08/16/13 19:14*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*91 %*		*08/16/13*	*08/16/13 19:14*		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: TERPAK RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:17

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: TERPAK RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:17

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*53.19*		ug/L	*50.0*		*106*	*80-120*			
Surrogate: Toluene-d8	*49.99*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.56*		ug/L	*50.0*		*93*	*86-115*			
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	5.2	2.0	ug/L	5.00		103	50-150			
Ethyl tert-butyl ether (ETBE)	5.1	2.0	ug/L	5.00		102	50-150			
Acetone	11.9	10.0	ug/L	10.0		119	50-150			
Benzene	5.3	2.0	ug/L	5.00		107	50-150			
Bromodichloromethane	5.6	2.0	ug/L	5.00		113	50-150			
Bromoform	5.0	2.0	ug/L	5.00		100	50-150			
Bromomethane	5.6	2.0	ug/L	5.00		111	50-150			
2-Butanone (MEK)	6.8	5.0	ug/L	10.0		68	50-150			
tert-Butanol (TBA)	27.7	15.0	ug/L	25.0		111	50-150			
Carbon disulfide	5.7	2.0	ug/L	5.00		113	50-150			
Carbon tetrachloride	5.8	2.0	ug/L	5.00		117	50-150			
Chlorobenzene	5.2	2.0	ug/L	5.00		104	50-150			
Chloroethane	5.5	2.0	ug/L	5.00		110	50-150			
Chloroform	5.8	2.0	ug/L	5.00		116	50-150			
Chloromethane	4.2	2.0	ug/L	5.00		83	50-150			
Dibromochloromethane	5.5	2.0	ug/L	5.00		110	50-150			
1,2-Dibromo-3-chloropropane	5.4	2.0	ug/L	5.00		108	50-150			
1,2-Dibromoethane (EDB)	4.9	2.0	ug/L	5.00		98	50-150			
1,1-Dichloroethane	5.7	2.0	ug/L	5.00		114	50-150			
1,2-Dichloroethane	5.8	2.0	ug/L	5.00		115	50-150			
1,1-Dichloroethene	6.4	2.0	ug/L	5.00		129	50-150			
cis-1,2-Dichloroethene	5.2	2.0	ug/L	5.00		105	50-150			
trans-1,2-Dichloroethene	6.1	2.0	ug/L	5.00		122	50-150			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: TERPAK RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:17

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	5.5	2.0	ug/L	5.00		111	50-150			
cis-1,3-Dichloropropene	4.9	2.0	ug/L	5.00		98	50-150			
trans-1,3-Dichloropropene	4.8	2.0	ug/L	5.00		96	50-150			
Ethylbenzene	4.5	2.0	ug/L	5.00		90	50-150			
2-Hexanone	11.3	10.0	ug/L	10.0		113	50-150			
Diisopropyl ether (DIPE)	5.1	2.0	ug/L	5.00		101	50-150			
Methylene chloride	6.6	2.0	ug/L	5.00		132	0-200			
4-Methyl-2-pentanone	10.3	10.0	ug/L	10.0		103	50-150			
Methyl tert-butyl ether (MTBE)	5.5	2.0	ug/L	5.00		110	50-150			
Naphthalene	4.3	2.0	ug/L	5.00		86	50-150			
Styrene	3.9	2.0	ug/L	5.00		79	50-150			
1,1,2,2-Tetrachloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Tetrachloroethene	5.1	2.0	ug/L	5.00		102	50-150			
Toluene	5.0	2.0	ug/L	5.00		100	50-150			
1,1,1-Trichloroethane	5.8	2.0	ug/L	5.00		116	50-150			
1,1,2-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Trichloroethene	5.5	2.0	ug/L	5.00		110	50-150			
Vinyl chloride	5.0	2.0	ug/L	5.00		100	50-150			
o-Xylene	4.5	2.0	ug/L	5.00		90	50-150			
m- & p-Xylenes	8.8	2.0	ug/L	10.0		88	50-150			
Surrogate: 1,2-Dichloroethane-d4	*52.27*		ug/L	*50.0*		*105*	*80-120*			
Surrogate: Toluene-d8	*49.98*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*47.21*		ug/L	*50.0*		*94*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: TERPAK RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:17

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA	Project Manager: Rusty Stoner
Project Name: VA Project	Project ID:15100
Sampler(s): [signature]	P.O. Number:

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Terpak Residence																		
PC#20103028																		
PREPM			x															
			x															
			x															
Field Blank	815	1050	x			3	x											3081507-01
RAW	815	1045	x			3	x											-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	815	[signature]			
(Printed) [signature]	1:50	(Printed) [signature]	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	4.5°C

Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

27 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: Pence Residence

Enclosed are the results of analyses for samples received by the laboratory on 08/22/13 13:28.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Pence Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 13:37

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3082204-01	Liquid	08/22/13 09:00	08/22/13 13:28

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Pence Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 13:37

RAW

3082204-01 (Liquid)
Sample Date: 08/22/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/23/13	08/23/13 14:56	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Acetone	ND	ug/L	10.0	1	08/23/13	08/23/13 14:56	ECM	
Benzene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Bromoform	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Bromomethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/23/13	08/23/13 14:56	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/23/13	08/23/13 14:56	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Chloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Chloroform	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Chloromethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/23/13	08/23/13 14:56	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/23/13	08/23/13 14:56	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Pence Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 13:37

RAW

3082204-01 (Liquid)
Sample Date: 08/22/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Styrene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Toluene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/23/13	08/23/13 14:56	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*98 %*		*08/23/13*	*08/23/13 14:56*		
Surrogate: Toluene-d8		*88-110*	*101 %*		*08/23/13*	*08/23/13 14:56*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*100 %*		*08/23/13*	*08/23/13 14:56*		

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Pence Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 13:37

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308178 - GCMS-WATER-VOLATILES										
Blank (B308178-BLK1)				Prepared & Analyzed: 08/23/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Pence Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 13:37

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308178 - GCMS-WATER-VOLATILES										
Blank (B308178-BLK1)				Prepared & Analyzed: 08/23/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*50.00*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*50.30*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.22*		ug/L	*50.0*		*100*	*86-115*			
LCS (B308178-BS1)				Prepared & Analyzed: 08/23/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	4.7	2.0	ug/L	5.00		94	50-150			
Ethyl tert-butyl ether (ETBE)	4.7	2.0	ug/L	5.00		93	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	5.0	2.0	ug/L	5.00		99	50-150			
Bromodichloromethane	4.9	2.0	ug/L	5.00		98	50-150			
Bromoform	4.6	2.0	ug/L	5.00		91	50-150			
Bromomethane	4.2	2.0	ug/L	5.00		84	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	5.0	2.0	ug/L	5.00		101	50-150			
Carbon tetrachloride	4.8	2.0	ug/L	5.00		96	50-150			
Chlorobenzene	4.8	2.0	ug/L	5.00		96	50-150			
Chloroethane	4.8	2.0	ug/L	5.00		96	50-150			
Chloroform	5.1	2.0	ug/L	5.00		103	50-150			
Chloromethane	4.2	2.0	ug/L	5.00		85	50-150			
Dibromochloromethane	4.6	2.0	ug/L	5.00		92	50-150			
1,2-Dibromo-3-chloropropane	4.7	2.0	ug/L	5.00		93	50-150			
1,2-Dibromoethane (EDB)	4.4	2.0	ug/L	5.00		87	50-150			
1,1-Dichloroethane	5.1	2.0	ug/L	5.00		102	50-150			
1,2-Dichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		91	50-150			
cis-1,2-Dichloroethene	4.8	2.0	ug/L	5.00		96	50-150			
trans-1,2-Dichloroethene	5.0	2.0	ug/L	5.00		100	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Pence Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 13:37

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308178 - GCMS-WATER-VOLATILES										
LCS (B308178-BS1)				Prepared & Analyzed: 08/23/13						
1,2-Dichloropropane	4.7	2.0	ug/L	5.00		94	50-150			
cis-1,3-Dichloropropene	3.8	2.0	ug/L	5.00		75	50-150			
trans-1,3-Dichloropropene	3.5	2.0	ug/L	5.00		70	50-150			
Ethylbenzene	4.8	2.0	ug/L	5.00		95	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	3.5	2.0	ug/L	5.00		70	50-150			
Methylene chloride	5.7	2.0	ug/L	5.00		114	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.7	2.0	ug/L	5.00		94	50-150			
Naphthalene	3.1	2.0	ug/L	5.00		61	50-150			
Styrene	3.6	2.0	ug/L	5.00		72	50-150			
1,1,2,2-Tetrachloroethane	5.1	2.0	ug/L	5.00		102	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		95	50-150			
Toluene	4.8	2.0	ug/L	5.00		97	50-150			
1,1,1-Trichloroethane	4.9	2.0	ug/L	5.00		98	50-150			
1,1,2-Trichloroethane	4.9	2.0	ug/L	5.00		98	50-150			
Trichloroethene	5.3	2.0	ug/L	5.00		106	50-150			
Vinyl chloride	4.1	2.0	ug/L	5.00		82	50-150			
o-Xylene	4.0	2.0	ug/L	5.00		79	50-150			
m- & p-Xylenes	9.3	2.0	ug/L	10.0		93	50-150			
Surrogate: 1,2-Dichloroethane-d4	*49.97*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*49.15*		ug/L	*50.0*		*98*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*49.44*		ug/L	*50.0*		*99*	*86-115*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Pence Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 13:37

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): S H

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Pence Residence																		
PC# 20103028																		
PREPM			x															
			x															
			x															
Field Blank	822	905	x			3	x											02
RAW	822	900	x			3	x											3082204-01

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
(Printed) Scott Herbert	8/22 10:55	(Printed) Cory Koons	(Printed)		(Printed)
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks	
(Printed)		(Printed)	Data Summary Above + QC Above + Calibration Above + Raw Data EDD	6°C on Ice	Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

22 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: WALDROUP RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/15/13 13:50.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALDROUP RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/22/13 15:21

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081512-02	Water	08/15/13 09:00	08/15/13 13:50

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALDROUP RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/22/13 15:21

RAW

3081512-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 20:18	CMK	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 20:18	CMK	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 20:18	CMK	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 20:18	CMK	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 20:18	CMK	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 20:18	CMK	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALDROUP RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/22/13 15:21

RAW

3081512-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 20:18	CMK	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*110 %*		*08/16/13*	*08/16/13 20:18*		
Surrogate: Toluene-d8		*88-110*	*98 %*		*08/16/13*	*08/16/13 20:18*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*90 %*		*08/16/13*	*08/16/13 20:18*		

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALDROUP RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/22/13 15:21

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALDROUP RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/22/13 15:21

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*53.19*		ug/L	*50.0*		*106*	*80-120*			
Surrogate: Toluene-d8	*49.99*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.56*		ug/L	*50.0*		*93*	*86-115*			
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	5.2	2.0	ug/L	5.00		103	50-150			
Ethyl tert-butyl ether (ETBE)	5.1	2.0	ug/L	5.00		102	50-150			
Acetone	11.9	10.0	ug/L	10.0		119	50-150			
Benzene	5.3	2.0	ug/L	5.00		107	50-150			
Bromodichloromethane	5.6	2.0	ug/L	5.00		113	50-150			
Bromoform	5.0	2.0	ug/L	5.00		100	50-150			
Bromomethane	5.6	2.0	ug/L	5.00		111	50-150			
2-Butanone (MEK)	6.8	5.0	ug/L	10.0		68	50-150			
tert-Butanol (TBA)	27.7	15.0	ug/L	25.0		111	50-150			
Carbon disulfide	5.7	2.0	ug/L	5.00		113	50-150			
Carbon tetrachloride	5.8	2.0	ug/L	5.00		117	50-150			
Chlorobenzene	5.2	2.0	ug/L	5.00		104	50-150			
Chloroethane	5.5	2.0	ug/L	5.00		110	50-150			
Chloroform	5.8	2.0	ug/L	5.00		116	50-150			
Chloromethane	4.2	2.0	ug/L	5.00		83	50-150			
Dibromochloromethane	5.5	2.0	ug/L	5.00		110	50-150			
1,2-Dibromo-3-chloropropane	5.4	2.0	ug/L	5.00		108	50-150			
1,2-Dibromoethane (EDB)	4.9	2.0	ug/L	5.00		98	50-150			
1,1-Dichloroethane	5.7	2.0	ug/L	5.00		114	50-150			
1,2-Dichloroethane	5.8	2.0	ug/L	5.00		115	50-150			
1,1-Dichloroethene	6.4	2.0	ug/L	5.00		129	50-150			
cis-1,2-Dichloroethene	5.2	2.0	ug/L	5.00		105	50-150			
trans-1,2-Dichloroethene	6.1	2.0	ug/L	5.00		122	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALDROUP RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/22/13 15:21

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	5.5	2.0	ug/L	5.00		111	50-150			
cis-1,3-Dichloropropene	4.9	2.0	ug/L	5.00		98	50-150			
trans-1,3-Dichloropropene	4.8	2.0	ug/L	5.00		96	50-150			
Ethylbenzene	4.5	2.0	ug/L	5.00		90	50-150			
2-Hexanone	11.3	10.0	ug/L	10.0		113	50-150			
Diisopropyl ether (DIPE)	5.1	2.0	ug/L	5.00		101	50-150			
Methylene chloride	6.6	2.0	ug/L	5.00		132	0-200			
4-Methyl-2-pentanone	10.3	10.0	ug/L	10.0		103	50-150			
Methyl tert-butyl ether (MTBE)	5.5	2.0	ug/L	5.00		110	50-150			
Naphthalene	4.3	2.0	ug/L	5.00		86	50-150			
Styrene	3.9	2.0	ug/L	5.00		79	50-150			
1,1,2,2-Tetrachloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Tetrachloroethene	5.1	2.0	ug/L	5.00		102	50-150			
Toluene	5.0	2.0	ug/L	5.00		100	50-150			
1,1,1-Trichloroethane	5.8	2.0	ug/L	5.00		116	50-150			
1,1,2-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Trichloroethene	5.5	2.0	ug/L	5.00		110	50-150			
Vinyl chloride	5.0	2.0	ug/L	5.00		100	50-150			
o-Xylene	4.5	2.0	ug/L	5.00		90	50-150			
m- & p-Xylenes	8.8	2.0	ug/L	10.0		88	50-150			
Surrogate: 1,2-Dichloroethane-d4	*52.27*		ug/L	*50.0*		*105*	*80-120*			
Surrogate: Toluene-d8	*49.98*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*47.21*		ug/L	*50.0*		*94*	*86-115*			

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALDROUP RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/22/13 15:21

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): [signature]

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410-247-7600 • Fax 410-247-7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Waldroup Residence																		
PC# 20103028																		
PREPM			x															
			x															
			x															
Field Blank	8/5	935	x			3	X											3081512-01
RAW	8/5	930	x			3	X											-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	8/5	[signature]			
(Printed) Scott Hubert	1:50	(Printed) [illegible]	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	4.5°C

Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

21 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: PAN REALTY

Enclosed are the results of analyses for samples received by the laboratory on 08/15/13 13:50.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PAN REALTY

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:19

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081513-02	Water	08/15/13 09:50	08/15/13 13:50

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PAN REALTY

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:19

RAW

3081513-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 20:51	CMK	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 20:51	CMK	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 20:51	CMK	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 20:51	CMK	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 20:51	CMK	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 20:51	CMK	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PAN REALTY

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:19

RAW

3081513-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 20:51	CMK	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*110 %*		*08/16/13*	*08/16/13 20:51*		
Surrogate: Toluene-d8		*88-110*	*99 %*		*08/16/13*	*08/16/13 20:51*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*91 %*		*08/16/13*	*08/16/13 20:51*		

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Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PAN REALTY

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:19

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PAN REALTY

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:19

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*53.19*		ug/L	*50.0*		*106*	*80-120*			
Surrogate: Toluene-d8	*49.99*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.56*		ug/L	*50.0*		*93*	*86-115*			
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	5.2	2.0	ug/L	5.00		103	50-150			
Ethyl tert-butyl ether (ETBE)	5.1	2.0	ug/L	5.00		102	50-150			
Acetone	11.9	10.0	ug/L	10.0		119	50-150			
Benzene	5.3	2.0	ug/L	5.00		107	50-150			
Bromodichloromethane	5.6	2.0	ug/L	5.00		113	50-150			
Bromoform	5.0	2.0	ug/L	5.00		100	50-150			
Bromomethane	5.6	2.0	ug/L	5.00		111	50-150			
2-Butanone (MEK)	6.8	5.0	ug/L	10.0		68	50-150			
tert-Butanol (TBA)	27.7	15.0	ug/L	25.0		111	50-150			
Carbon disulfide	5.7	2.0	ug/L	5.00		113	50-150			
Carbon tetrachloride	5.8	2.0	ug/L	5.00		117	50-150			
Chlorobenzene	5.2	2.0	ug/L	5.00		104	50-150			
Chloroethane	5.5	2.0	ug/L	5.00		110	50-150			
Chloroform	5.8	2.0	ug/L	5.00		116	50-150			
Chloromethane	4.2	2.0	ug/L	5.00		83	50-150			
Dibromochloromethane	5.5	2.0	ug/L	5.00		110	50-150			
1,2-Dibromo-3-chloropropane	5.4	2.0	ug/L	5.00		108	50-150			
1,2-Dibromoethane (EDB)	4.9	2.0	ug/L	5.00		98	50-150			
1,1-Dichloroethane	5.7	2.0	ug/L	5.00		114	50-150			
1,2-Dichloroethane	5.8	2.0	ug/L	5.00		115	50-150			
1,1-Dichloroethene	6.4	2.0	ug/L	5.00		129	50-150			
cis-1,2-Dichloroethene	5.2	2.0	ug/L	5.00		105	50-150			
trans-1,2-Dichloroethene	6.1	2.0	ug/L	5.00		122	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PAN REALTY

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:19

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	5.5	2.0	ug/L	5.00		111	50-150			
cis-1,3-Dichloropropene	4.9	2.0	ug/L	5.00		98	50-150			
trans-1,3-Dichloropropene	4.8	2.0	ug/L	5.00		96	50-150			
Ethylbenzene	4.5	2.0	ug/L	5.00		90	50-150			
2-Hexanone	11.3	10.0	ug/L	10.0		113	50-150			
Diisopropyl ether (DIPE)	5.1	2.0	ug/L	5.00		101	50-150			
Methylene chloride	6.6	2.0	ug/L	5.00		132	0-200			
4-Methyl-2-pentanone	10.3	10.0	ug/L	10.0		103	50-150			
Methyl tert-butyl ether (MTBE)	5.5	2.0	ug/L	5.00		110	50-150			
Naphthalene	4.3	2.0	ug/L	5.00		86	50-150			
Styrene	3.9	2.0	ug/L	5.00		79	50-150			
1,1,2,2-Tetrachloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Tetrachloroethene	5.1	2.0	ug/L	5.00		102	50-150			
Toluene	5.0	2.0	ug/L	5.00		100	50-150			
1,1,1-Trichloroethane	5.8	2.0	ug/L	5.00		116	50-150			
1,1,2-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Trichloroethene	5.5	2.0	ug/L	5.00		110	50-150			
Vinyl chloride	5.0	2.0	ug/L	5.00		100	50-150			
o-Xylene	4.5	2.0	ug/L	5.00		90	50-150			
m- & p-Xylenes	8.8	2.0	ug/L	10.0		88	50-150			
Surrogate: 1,2-Dichloroethane-d4	*52.27*		ug/L	*50.0*		*105*	*80-120*			
Surrogate: Toluene-d8	*49.98*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*47.21*		ug/L	*50.0*		*94*	*86-115*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: PAN REALTY

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:19

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA	Project Manager: Rusty Stoner
Project Name: VA Project	Project ID:15100
Sampler(s): SH	P.O. Number:

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Pan Realty																		
PC# 20103028																		
PREPM			x															
			x															
			x															
Field Blank	8-15	955	x			3	X											3081513-01
RAW	8-15	950	x			3	X											-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
SH	8/15	[signature]			
(Printed) Scott Herbert	1500	(Printed) [signature]	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks
			☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	4.5°C
(Printed)		(Printed)		Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

22 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: WALKER ROAD ASSOC

Enclosed are the results of analyses for samples received by the laboratory on 08/14/13 12:41.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALKER ROAD ASSOC

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:39

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081423-01	Water	08/14/13 10:40	08/14/13 12:41
FIELD BLANK		3081423-02	Water	08/14/13 10:40	08/14/13 12:41

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALKER ROAD ASSOC

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:39

RAW

3081423-01 (Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 17:21	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 17:21	ECM	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 17:21	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 17:21	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Chloroform	**2.5**	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 17:21	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 17:21	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALKER ROAD ASSOC

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:39

RAW

3081423-01 (Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 17:21	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*97 %*		*08/16/13*	*08/16/13 17:21*		
Surrogate: Toluene-d8		*88-110*	*102 %*		*08/16/13*	*08/16/13 17:21*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*98 %*		*08/16/13*	*08/16/13 17:21*		

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALKER ROAD ASSOC

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:39

FIELD BLANK

3081423-02 (Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/19/13	08/19/13 13:11	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Acetone	ND	ug/L	10.0	1	08/19/13	08/19/13 13:11	ECM	
Benzene	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Bromoform	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Bromomethane	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/19/13	08/19/13 13:11	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/19/13	08/19/13 13:11	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Chloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Chloroform	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Chloromethane	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/19/13	08/19/13 13:11	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/19/13	08/19/13 13:11	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Naphthalene	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Styrene	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALKER ROAD ASSOC

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:39

FIELD BLANK

3081423-02 (Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Tetrachloroethene	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Toluene	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	
Xylenes, Total	**1.3**	ug/L	2.0	1	08/19/13	08/19/13 13:11	ECM	J
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*101 %*		*08/19/13*	*08/19/13 13:11*		
Surrogate: Toluene-d8		*88-110*	*103 %*		*08/19/13*	*08/19/13 13:11*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*106 %*		*08/19/13*	*08/19/13 13:11*		

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALKER ROAD ASSOC

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:39

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALKER ROAD ASSOC

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:39

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*49.34*		ug/L	*50.0*		*99*	*80-120*			
Surrogate: Toluene-d8	*51.20*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.10*		ug/L	*50.0*		*100*	*86-115*			
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	3.9	2.0	ug/L	5.00		78	50-150			
Ethyl tert-butyl ether (ETBE)	4.2	2.0	ug/L	5.00		83	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	4.8	2.0	ug/L	5.00		96	50-150			
Bromodichloromethane	5.1	2.0	ug/L	5.00		102	50-150			
Bromoform	4.6	2.0	ug/L	5.00		92	50-150			
Bromomethane	4.5	2.0	ug/L	5.00		91	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	4.7	2.0	ug/L	5.00		94	50-150			
Carbon tetrachloride	4.4	2.0	ug/L	5.00		88	50-150			
Chlorobenzene	5.1	2.0	ug/L	5.00		102	50-150			
Chloroethane	5.0	2.0	ug/L	5.00		100	50-150			
Chloroform	5.1	2.0	ug/L	5.00		103	50-150			
Chloromethane	4.3	2.0	ug/L	5.00		85	50-150			
Dibromochloromethane	5.0	2.0	ug/L	5.00		99	50-150			
1,2-Dibromo-3-chloropropane	3.3	2.0	ug/L	5.00		65	50-150			
1,2-Dibromoethane (EDB)	4.7	2.0	ug/L	5.00		94	50-150			
1,1-Dichloroethane	4.8	2.0	ug/L	5.00		97	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		90	50-150			
cis-1,2-Dichloroethene	4.6	2.0	ug/L	5.00		91	50-150			
trans-1,2-Dichloroethene	4.5	2.0	ug/L	5.00		89	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALKER ROAD ASSOC

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:39

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	4.9	2.0	ug/L	5.00		97	50-150			
cis-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		82	50-150			
trans-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		83	50-150			
Ethylbenzene	5.0	2.0	ug/L	5.00		99	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	3.9	2.0	ug/L	5.00		79	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.4	2.0	ug/L	5.00		87	50-150			
Naphthalene	3.2	2.0	ug/L	5.00		65	50-150			
Styrene	3.8	2.0	ug/L	5.00		77	50-150			
1,1,2,2-Tetrachloroethane	5.4	2.0	ug/L	5.00		108	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		96	50-150			
Toluene	4.8	2.0	ug/L	5.00		97	50-150			
1,1,1-Trichloroethane	4.4	2.0	ug/L	5.00		89	50-150			
1,1,2-Trichloroethane	4.8	2.0	ug/L	5.00		96	50-150			
Trichloroethene	4.6	2.0	ug/L	5.00		92	50-150			
Vinyl chloride	3.6	2.0	ug/L	5.00		73	50-150			
o-Xylene	4.0	2.0	ug/L	5.00		80	50-150			
m- & p-Xylenes	9.1	2.0	ug/L	10.0		91	50-150			
Surrogate: 1,2-Dichloroethane-d4	*50.04*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*51.02*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*51.10*		ug/L	*50.0*		*102*	*86-115*			
Batch B308133 - GCMS-WATER-VOLATILES										
Blank (B308133-BLK1)				Prepared & Analyzed: 08/19/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALKER ROAD ASSOC

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:39

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308133 - GCMS-WATER-VOLATILES										
Blank (B308133-BLK1)				Prepared & Analyzed: 08/19/13						
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*51.52*		ug/L	*50.0*		*103*	*80-120*			
Surrogate: Toluene-d8	*52.41*		ug/L	*50.0*		*105*	*88-110*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALKER ROAD ASSOC

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:39

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308133 - GCMS-WATER-VOLATILES										
Blank (B308133-BLK1)				Prepared & Analyzed: 08/19/13						
Surrogate: 4-Bromofluorobenzene	*52.51*		ug/L	*50.0*		*105*	*86-115*			
LCS (B308133-BS1)				Prepared & Analyzed: 08/19/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	4.3	2.0	ug/L	5.00		86	50-150			
Ethyl tert-butyl ether (ETBE)	4.5	2.0	ug/L	5.00		90	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	5.1	2.0	ug/L	5.00		101	50-150			
Bromodichloromethane	5.3	2.0	ug/L	5.00		105	50-150			
Bromoform	5.1	2.0	ug/L	5.00		102	50-150			
Bromomethane	4.3	2.0	ug/L	5.00		86	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	20.7	15.0	ug/L	25.0		83	50-150			
Carbon disulfide	4.8	2.0	ug/L	5.00		96	50-150			
Carbon tetrachloride	4.7	2.0	ug/L	5.00		93	50-150			
Chlorobenzene	5.7	2.0	ug/L	5.00		115	50-150			
Chloroethane	4.6	2.0	ug/L	5.00		93	50-150			
Chloroform	5.4	2.0	ug/L	5.00		108	50-150			
Chloromethane	4.5	2.0	ug/L	5.00		89	50-150			
Dibromochloromethane	5.3	2.0	ug/L	5.00		106	50-150			
1,2-Dibromo-3-chloropropane	4.9	2.0	ug/L	5.00		98	50-150			
1,2-Dibromoethane (EDB)	5.1	2.0	ug/L	5.00		101	50-150			
1,1-Dichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
1,2-Dichloroethane	5.3	2.0	ug/L	5.00		105	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		89	50-150			
cis-1,2-Dichloroethene	5.0	2.0	ug/L	5.00		100	50-150			
trans-1,2-Dichloroethene	4.9	2.0	ug/L	5.00		99	50-150			
1,2-Dichloropropane	5.1	2.0	ug/L	5.00		101	50-150			
cis-1,3-Dichloropropene	4.3	2.0	ug/L	5.00		87	50-150			
trans-1,3-Dichloropropene	4.2	2.0	ug/L	5.00		85	50-150			
Ethylbenzene	5.0	2.0	ug/L	5.00		100	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	4.0	2.0	ug/L	5.00		80	50-150			
Methylene chloride	6.1	2.0	ug/L	5.00		123	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.7	2.0	ug/L	5.00		94	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALKER ROAD ASSOC

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:39

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308133 - GCMS-WATER-VOLATILES										
LCS (B308133-BS1)				Prepared & Analyzed: 08/19/13						
Naphthalene	3.9	2.0	ug/L	5.00		79	50-150			
Styrene	4.3	2.0	ug/L	5.00		86	50-150			
1,1,2,2-Tetrachloroethane	5.4	2.0	ug/L	5.00		108	50-150			
Tetrachloroethene	5.1	2.0	ug/L	5.00		102	50-150			
Toluene	5.2	2.0	ug/L	5.00		105	50-150			
1,1,1-Trichloroethane	5.1	2.0	ug/L	5.00		102	50-150			
1,1,2-Trichloroethane	5.7	2.0	ug/L	5.00		115	50-150			
Trichloroethene	5.0	2.0	ug/L	5.00		99	50-150			
Vinyl chloride	3.6	2.0	ug/L	5.00		73	50-150			
o-Xylene	4.3	2.0	ug/L	5.00		85	50-150			
m- & p-Xylenes	9.6	2.0	ug/L	10.0		96	50-150			
Surrogate: 1,2-Dichloroethane-d4	*51.80*		ug/L	*50.0*		*104*	*80-120*			
Surrogate: Toluene-d8	*50.72*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*51.53*		ug/L	*50.0*		*103*	*86-115*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: WALKER ROAD ASSOC

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/22/13 11:39

Notes and Definitions

J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): Rusty Stoner

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Walker Road Assoc.																		
PC# 20103028																		
[redacted]			x															
			x															
			x															
			x															
RAW	8/14/13	10:40 AM	x			3	1											3081423-01
Field Blank	8/14/13	10:40 AM	x			3	1											3081423-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Rusty Stoner	8/14/13	K. McAdoo			
(Printed) Rusty Stoner	12:41 pm	(Printed) Karla McAdoo	(Printed)		(Printed)
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks	
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	Page ____ of ____	

MSS-F001-09/12

3.0 on ice

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

21 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: LESSARD RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/14/13 12:41.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: LESSARD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:02

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081419-01	Nonpotable Water	08/14/13 11:40	08/14/13 12:41

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: LESSARD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:02

RAW

3081419-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 13:27	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 13:27	ECM	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 13:27	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 13:27	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 13:27	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 13:27	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: LESSARD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:02

RAW

3081419-01 (Nonpotable Water)
Sample Date: 08/14/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 13:27	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*98 %*		*08/16/13*	*08/16/13 13:27*		
Surrogate: Toluene-d8		*88-110*	*103 %*		*08/16/13*	*08/16/13 13:27*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*101 %*		*08/16/13*	*08/16/13 13:27*		

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Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: LESSARD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:02

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: LESSARD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:02

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
Blank (B308116-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*49.34*		ug/L	*50.0*		*99*	*80-120*			
Surrogate: Toluene-d8	*51.20*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.10*		ug/L	*50.0*		*100*	*86-115*			
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	3.9	2.0	ug/L	5.00		78	50-150			
Ethyl tert-butyl ether (ETBE)	4.2	2.0	ug/L	5.00		83	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	4.8	2.0	ug/L	5.00		96	50-150			
Bromodichloromethane	5.1	2.0	ug/L	5.00		102	50-150			
Bromoform	4.6	2.0	ug/L	5.00		92	50-150			
Bromomethane	4.5	2.0	ug/L	5.00		91	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	4.7	2.0	ug/L	5.00		94	50-150			
Carbon tetrachloride	4.4	2.0	ug/L	5.00		88	50-150			
Chlorobenzene	5.1	2.0	ug/L	5.00		102	50-150			
Chloroethane	5.0	2.0	ug/L	5.00		100	50-150			
Chloroform	5.1	2.0	ug/L	5.00		103	50-150			
Chloromethane	4.3	2.0	ug/L	5.00		85	50-150			
Dibromochloromethane	5.0	2.0	ug/L	5.00		99	50-150			
1,2-Dibromo-3-chloropropane	3.3	2.0	ug/L	5.00		65	50-150			
1,2-Dibromoethane (EDB)	4.7	2.0	ug/L	5.00		94	50-150			
1,1-Dichloroethane	4.8	2.0	ug/L	5.00		97	50-150			
1,2-Dichloroethane	5.0	2.0	ug/L	5.00		99	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		90	50-150			
cis-1,2-Dichloroethene	4.6	2.0	ug/L	5.00		91	50-150			
trans-1,2-Dichloroethene	4.5	2.0	ug/L	5.00		89	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: LESSARD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:02

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308116 - GCMS-WATER-VOLATILES										
LCS (B308116-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	4.9	2.0	ug/L	5.00		97	50-150			
cis-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		82	50-150			
trans-1,3-Dichloropropene	4.1	2.0	ug/L	5.00		83	50-150			
Ethylbenzene	5.0	2.0	ug/L	5.00		99	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	3.9	2.0	ug/L	5.00		79	50-150			
Methylene chloride	5.8	2.0	ug/L	5.00		115	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.4	2.0	ug/L	5.00		87	50-150			
Naphthalene	3.2	2.0	ug/L	5.00		65	50-150			
Styrene	3.8	2.0	ug/L	5.00		77	50-150			
1,1,2,2-Tetrachloroethane	5.4	2.0	ug/L	5.00		108	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		96	50-150			
Toluene	4.8	2.0	ug/L	5.00		97	50-150			
1,1,1-Trichloroethane	4.4	2.0	ug/L	5.00		89	50-150			
1,1,2-Trichloroethane	4.8	2.0	ug/L	5.00		96	50-150			
Trichloroethene	4.6	2.0	ug/L	5.00		92	50-150			
Vinyl chloride	3.6	2.0	ug/L	5.00		73	50-150			
o-Xylene	4.0	2.0	ug/L	5.00		80	50-150			
m- & p-Xylenes	9.1	2.0	ug/L	10.0		91	50-150			
Surrogate: 1,2-Dichloroethane-d4	*50.04*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*51.02*		ug/L	*50.0*		*102*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*51.10*		ug/L	*50.0*		*102*	*86-115*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: LESSARD RESIDENCE

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:02

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID: 15100

Sampler(s): Rusty Stoner

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410-247-7600 • Fax 410-247-7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Lessard Residence																		
PC# 20103028																		
[redacted]			x															
			x															
			x															
			x															
RAW	8/14/13	11:40 AM	x			3	1											3081419-01
Field Blank	8/14/13	11:40 AM	X			3	1											3081419-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Rusty Stoner	8/14/13	K. McAdoo			
(Printed) Rusty Stoner	12:41 pm	(Printed) Karla McAdoo	(Printed)		(Printed)
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks	
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	Page ____ of ____	

MSS-F001-09/12

* 30 on ice

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

21 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: DANG HAN HOAN RESIDENCE

Enclosed are the results of analyses for samples received by the laboratory on 08/15/13 13:50.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: DANG HAN HOAN RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:21

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3081514-02	Water	08/15/13 11:30	08/15/13 13:50

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: DANG HAN HOAN RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:21

RAW

3081514-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/16/13	08/16/13 21:23	CMK	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Acetone	ND	ug/L	10.0	1	08/16/13	08/16/13 21:23	CMK	
Benzene	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Bromodichloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Bromoform	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Bromomethane	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/16/13	08/16/13 21:23	CMK	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/16/13	08/16/13 21:23	CMK	
Carbon disulfide	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Carbon tetrachloride	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Chlorobenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Chloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Chloroform	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Chloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Dibromochloromethane	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Ethylbenzene	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
2-Hexanone	ND	ug/L	10.0	1	08/16/13	08/16/13 21:23	CMK	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Methylene chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/16/13	08/16/13 21:23	CMK	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: DANG HAN HOAN RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:21

RAW

3081514-02 (Water)
Sample Date: 08/15/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Styrene	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Tetrachloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Toluene	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Trichloroethene	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Vinyl chloride	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Xylenes, Total	ND	ug/L	2.0	1	08/16/13	08/16/13 21:23	CMK	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*114 %*		*08/16/13*	*08/16/13 21:23*		
Surrogate: Toluene-d8		*88-110*	*99 %*		*08/16/13*	*08/16/13 21:23*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*90 %*		*08/16/13*	*08/16/13 21:23*		

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: DANG HAN HOAN RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:21

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: DANG HAN HOAN RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:21

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
Blank (B308122-BLK1)				Prepared & Analyzed: 08/16/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*53.19*		ug/L	*50.0*		*106*	*80-120*			
Surrogate: Toluene-d8	*49.99*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*46.56*		ug/L	*50.0*		*93*	*86-115*			
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	5.2	2.0	ug/L	5.00		103	50-150			
Ethyl tert-butyl ether (ETBE)	5.1	2.0	ug/L	5.00		102	50-150			
Acetone	11.9	10.0	ug/L	10.0		119	50-150			
Benzene	5.3	2.0	ug/L	5.00		107	50-150			
Bromodichloromethane	5.6	2.0	ug/L	5.00		113	50-150			
Bromoform	5.0	2.0	ug/L	5.00		100	50-150			
Bromomethane	5.6	2.0	ug/L	5.00		111	50-150			
2-Butanone (MEK)	6.8	5.0	ug/L	10.0		68	50-150			
tert-Butanol (TBA)	27.7	15.0	ug/L	25.0		111	50-150			
Carbon disulfide	5.7	2.0	ug/L	5.00		113	50-150			
Carbon tetrachloride	5.8	2.0	ug/L	5.00		117	50-150			
Chlorobenzene	5.2	2.0	ug/L	5.00		104	50-150			
Chloroethane	5.5	2.0	ug/L	5.00		110	50-150			
Chloroform	5.8	2.0	ug/L	5.00		116	50-150			
Chloromethane	4.2	2.0	ug/L	5.00		83	50-150			
Dibromochloromethane	5.5	2.0	ug/L	5.00		110	50-150			
1,2-Dibromo-3-chloropropane	5.4	2.0	ug/L	5.00		108	50-150			
1,2-Dibromoethane (EDB)	4.9	2.0	ug/L	5.00		98	50-150			
1,1-Dichloroethane	5.7	2.0	ug/L	5.00		114	50-150			
1,2-Dichloroethane	5.8	2.0	ug/L	5.00		115	50-150			
1,1-Dichloroethene	6.4	2.0	ug/L	5.00		129	50-150			
cis-1,2-Dichloroethene	5.2	2.0	ug/L	5.00		105	50-150			
trans-1,2-Dichloroethene	6.1	2.0	ug/L	5.00		122	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: DANG HAN HOAN RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:21

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308122 - GCMS-WATER-VOLATILES										
LCS (B308122-BS1)				Prepared & Analyzed: 08/16/13						
1,2-Dichloropropane	5.5	2.0	ug/L	5.00		111	50-150			
cis-1,3-Dichloropropene	4.9	2.0	ug/L	5.00		98	50-150			
trans-1,3-Dichloropropene	4.8	2.0	ug/L	5.00		96	50-150			
Ethylbenzene	4.5	2.0	ug/L	5.00		90	50-150			
2-Hexanone	11.3	10.0	ug/L	10.0		113	50-150			
Diisopropyl ether (DIPE)	5.1	2.0	ug/L	5.00		101	50-150			
Methylene chloride	6.6	2.0	ug/L	5.00		132	0-200			
4-Methyl-2-pentanone	10.3	10.0	ug/L	10.0		103	50-150			
Methyl tert-butyl ether (MTBE)	5.5	2.0	ug/L	5.00		110	50-150			
Naphthalene	4.3	2.0	ug/L	5.00		86	50-150			
Styrene	3.9	2.0	ug/L	5.00		79	50-150			
1,1,2,2-Tetrachloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Tetrachloroethene	5.1	2.0	ug/L	5.00		102	50-150			
Toluene	5.0	2.0	ug/L	5.00		100	50-150			
1,1,1-Trichloroethane	5.8	2.0	ug/L	5.00		116	50-150			
1,1,2-Trichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
Trichloroethene	5.5	2.0	ug/L	5.00		110	50-150			
Vinyl chloride	5.0	2.0	ug/L	5.00		100	50-150			
o-Xylene	4.5	2.0	ug/L	5.00		90	50-150			
m- & p-Xylenes	8.8	2.0	ug/L	10.0		88	50-150			
Surrogate: 1,2-Dichloroethane-d4	*52.27*		ug/L	*50.0*		*105*	*80-120*			
Surrogate: Toluene-d8	*49.98*		ug/L	*50.0*		*100*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*47.21*		ug/L	*50.0*		*94*	*86-115*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: DANG HAN HOAN RESIDENCE

Project Number: PC# 20103028
Project Manager: Rusty Stoner

Reported:
08/21/13 14:21

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA	Project Manager: Rusty Stoner
Project Name: VA Project	Project ID:15100
Sampler(s): SH	P.O. Number:

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Dang Han Hoan Residence																		
PC# 20103028																		
PREPM			x															
			x															
			x															
Field Blank	8-15	1135	x			3	X											3081514-01
RAW	8-15	1130	x			3	X											-02

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
(Printed) Scott Hebert	8/15 150	(Printed) [illegible]	(Printed)		(Printed)
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements: ☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	4.5°C	Remarks
(Printed)		(Printed)			Page ____ of ____

MSS-F001-09/12

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

27 August 2013

Rusty Stoner
Stoner Quality Water
273 Culligan Rd
Friedens, PA 15541

RE: Halm Residence

Enclosed are the results of analyses for samples received by the laboratory on 08/22/13 13:27.

Maryland Spectral Services, Inc. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. Certification status for analytes included in this report will be provided upon request.

Please visit our website at www.mdspectral.com for a complete listing of our NELAP accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Halm Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 12:45

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RAW		3082203-01	Liquid	08/22/13 09:30	08/22/13 13:27
FIELD BLANK		3082203-02	Liquid	08/22/13 09:35	08/22/13 13:27

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Halm Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 12:45

RAW

3082203-01 (Liquid)
Sample Date: 08/22/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/23/13	08/23/13 14:16	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Acetone	ND	ug/L	10.0	1	08/23/13	08/23/13 14:16	ECM	
Benzene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Bromoform	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Bromomethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/23/13	08/23/13 14:16	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/23/13	08/23/13 14:16	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Chloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Chloroform	**5.0**	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Chloromethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/23/13	08/23/13 14:16	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/23/13	08/23/13 14:16	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Halm Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 12:45

RAW

3082203-01 (Liquid)
Sample Date: 08/22/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Naphthalene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Styrene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Tetrachloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Toluene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/23/13	08/23/13 14:16	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*99 %*		*08/23/13*	*08/23/13 14:16*		
Surrogate: Toluene-d8		*88-110*	*100 %*		*08/23/13*	*08/23/13 14:16*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*101 %*		*08/23/13*	*08/23/13 14:16*		

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Halm Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 12:45

FIELD BLANK

3082203-02 (Liquid)
Sample Date: 08/22/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)								
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	1	08/23/13	08/23/13 19:31	ECM	
tert-Amyl methyl ether (TAME)	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Acetone	ND	ug/L	10.0	1	08/23/13	08/23/13 19:31	ECM	
Benzene	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Bromodichloromethane	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Bromoform	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Bromomethane	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
2-Butanone (MEK)	ND	ug/L	10.0	1	08/23/13	08/23/13 19:31	ECM	
tert-Butanol (TBA)	ND	ug/L	15.0	1	08/23/13	08/23/13 19:31	ECM	
Carbon disulfide	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Carbon tetrachloride	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Chlorobenzene	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Chloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Chloroform	**2.1**	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Chloromethane	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Dibromochloromethane	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
1,1-Dichloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
1,2-Dichloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
1,1-Dichloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
cis-1,2-Dichloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
trans-1,2-Dichloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
1,2-Dichloropropane	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
cis-1,3-Dichloropropene	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
trans-1,3-Dichloropropene	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Ethylbenzene	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
2-Hexanone	ND	ug/L	10.0	1	08/23/13	08/23/13 19:31	ECM	
Diisopropyl ether (DIPE)	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Methylene chloride	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
4-Methyl-2-pentanone	ND	ug/L	10.0	1	08/23/13	08/23/13 19:31	ECM	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Naphthalene	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Styrene	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Halm Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 12:45

FIELD BLANK

3082203-02 (Liquid)
Sample Date: 08/22/13

Analyte	Result	Units	Reporting Limit	Dilution	Prepared	Analyzed	Analyst	Notes
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)								
Tetrachloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Toluene	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
1,1,1-Trichloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
1,1,2-Trichloroethane	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Trichloroethene	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Vinyl chloride	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Xylenes, Total	ND	ug/L	2.0	1	08/23/13	08/23/13 19:31	ECM	
Surrogate: 1,2-Dichloroethane-d4		*80-120*	*98 %*		*08/23/13*	*08/23/13 19:31*		
Surrogate: Toluene-d8		*88-110*	*99 %*		*08/23/13*	*08/23/13 19:31*		
Surrogate: 4-Bromofluorobenzene		*86-115*	*99 %*		*08/23/13*	*08/23/13 19:31*		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Halm Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 12:45

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308178 - GCMS-WATER-VOLATILES										
Blank (B308178-BLK1)				Prepared & Analyzed: 08/23/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L							
tert-Amyl methyl ether (TAME)	ND	2.0	ug/L							
Ethyl tert-butyl ether (ETBE)	ND	2.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	2.0	ug/L							
Bromodichloromethane	ND	2.0	ug/L							
Bromoform	ND	2.0	ug/L							
Bromomethane	ND	2.0	ug/L							
2-Butanone (MEK)	ND	10.0	ug/L							
tert-Butanol (TBA)	ND	15.0	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Carbon tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	2.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	2.0	ug/L							
Dibromochloromethane	ND	2.0	ug/L							
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L							
1,2-Dibromoethane (EDB)	ND	2.0	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
Diisopropyl ether (DIPE)	ND	2.0	ug/L							
Methylene chloride	ND	2.0	ug/L							
4-Methyl-2-pentanone	ND	10.0	ug/L							
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L							
Naphthalene	ND	2.0	ug/L							
Styrene	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Halm Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 12:45

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308178 - GCMS-WATER-VOLATILES										
Blank (B308178-BLK1)				Prepared & Analyzed: 08/23/13						
Tetrachloroethene	ND	2.0	ug/L							
Toluene	ND	2.0	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Vinyl chloride	ND	2.0	ug/L							
Xylenes, Total	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*50.00*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*50.30*		ug/L	*50.0*		*101*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*50.22*		ug/L	*50.0*		*100*	*86-115*			
LCS (B308178-BS1)				Prepared & Analyzed: 08/23/13						
tert-Amyl alcohol (TAA)	ND	20.0	ug/L				50-150			
tert-Amyl methyl ether (TAME)	4.7	2.0	ug/L	5.00		94	50-150			
Ethyl tert-butyl ether (ETBE)	4.7	2.0	ug/L	5.00		93	50-150			
Acetone	ND	10.0	ug/L	10.0			50-150			
Benzene	5.0	2.0	ug/L	5.00		99	50-150			
Bromodichloromethane	4.9	2.0	ug/L	5.00		98	50-150			
Bromoform	4.6	2.0	ug/L	5.00		91	50-150			
Bromomethane	4.2	2.0	ug/L	5.00		84	50-150			
2-Butanone (MEK)	ND	10.0	ug/L	10.0			50-150			
tert-Butanol (TBA)	ND	15.0	ug/L	25.0			50-150			
Carbon disulfide	5.0	2.0	ug/L	5.00		101	50-150			
Carbon tetrachloride	4.8	2.0	ug/L	5.00		96	50-150			
Chlorobenzene	4.8	2.0	ug/L	5.00		96	50-150			
Chloroethane	4.8	2.0	ug/L	5.00		96	50-150			
Chloroform	5.1	2.0	ug/L	5.00		103	50-150			
Chloromethane	4.2	2.0	ug/L	5.00		85	50-150			
Dibromochloromethane	4.6	2.0	ug/L	5.00		92	50-150			
1,2-Dibromo-3-chloropropane	4.7	2.0	ug/L	5.00		93	50-150			
1,2-Dibromoethane (EDB)	4.4	2.0	ug/L	5.00		87	50-150			
1,1-Dichloroethane	5.1	2.0	ug/L	5.00		102	50-150			
1,2-Dichloroethane	5.2	2.0	ug/L	5.00		104	50-150			
1,1-Dichloroethene	4.5	2.0	ug/L	5.00		91	50-150			
cis-1,2-Dichloroethene	4.8	2.0	ug/L	5.00		96	50-150			
trans-1,2-Dichloroethene	5.0	2.0	ug/L	5.00		100	50-150			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Halm Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 12:45

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308178 - GCMS-WATER-VOLATILES										
LCS (B308178-BS1)				Prepared & Analyzed: 08/23/13						
1,2-Dichloropropane	4.7	2.0	ug/L	5.00		94	50-150			
cis-1,3-Dichloropropene	3.8	2.0	ug/L	5.00		75	50-150			
trans-1,3-Dichloropropene	3.5	2.0	ug/L	5.00		70	50-150			
Ethylbenzene	4.8	2.0	ug/L	5.00		95	50-150			
2-Hexanone	ND	10.0	ug/L	10.0			50-150			
Diisopropyl ether (DIPE)	3.5	2.0	ug/L	5.00		70	50-150			
Methylene chloride	5.7	2.0	ug/L	5.00		114	0-200			
4-Methyl-2-pentanone	ND	10.0	ug/L	10.0			50-150			
Methyl tert-butyl ether (MTBE)	4.7	2.0	ug/L	5.00		94	50-150			
Naphthalene	3.1	2.0	ug/L	5.00		61	50-150			
Styrene	3.6	2.0	ug/L	5.00		72	50-150			
1,1,2,2-Tetrachloroethane	5.1	2.0	ug/L	5.00		102	50-150			
Tetrachloroethene	4.8	2.0	ug/L	5.00		95	50-150			
Toluene	4.8	2.0	ug/L	5.00		97	50-150			
1,1,1-Trichloroethane	4.9	2.0	ug/L	5.00		98	50-150			
1,1,2-Trichloroethane	4.9	2.0	ug/L	5.00		98	50-150			
Trichloroethene	5.3	2.0	ug/L	5.00		106	50-150			
Vinyl chloride	4.1	2.0	ug/L	5.00		82	50-150			
o-Xylene	4.0	2.0	ug/L	5.00		79	50-150			
m- & p-Xylenes	9.3	2.0	ug/L	10.0		93	50-150			
Surrogate: 1,2-Dichloroethane-d4	*49.97*		ug/L	*50.0*		*100*	*80-120*			
Surrogate: Toluene-d8	*49.15*		ug/L	*50.0*		*98*	*88-110*			
Surrogate: 4-Bromofluorobenzene	*49.44*		ug/L	*50.0*		*99*	*86-115*			

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Will Brewington, Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: Halm Residence

Project Number: PC-2010-3028
Project Manager: Rusty Stoner

Reported:
08/27/13 12:45

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

CHAIN-OF-CUSTODY RECORD

Company Name: Stoner Quality Water, Inc. t/a Culligan of Friedens, PA

Project Manager: Rusty Stoner

Project Name: VA Project

Project ID:15100

Sampler(s): SH

P.O. Number:

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	8260	8021	504.1	8270							Preservative/Remarks	MSS Lab ID
Halm Residence																		
PC# 20103028																		
PREPM			x															
			x															
			x															
Field Blank	822	935	x			3	X											02
RAW	822	930	x			3	X											3082203-01

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
SH	8/22	Cory Koons			
(Printed) Scott Herbert	10:55	(Printed) Cory Koons	(Printed)		(Printed)
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Deliverable Requirements:	Remarks	
(Printed)		(Printed)	☐ Data Summary ☐ Above + QC ☐ Above + Calibration ☐ Above + Raw Data ☐ EDD	6°C on Ice	

Page ____ of ____

MSS-F001-09/12

Appendix E
Waste Manifests

ATLAS Environmental Services, LLC

10139 Giles Run Road, Lorton, VA 22079
Phone: 703-339-9770 Fax: 703-339-9771

SHIPPING DOCUMENT

Date: 4-11-13 Document# A 009870

Generator / Shipper: WATER DEPOT / EICHELBERGER DRILLING

US EPA ID#: NOT REQUIRED

Address: 9901 GOERGETOWN PIKE

City: GREAT FALLS State: VA Zip:

Contact: SITE SUPERVISOR Phone: 571-274-2033

Site:

Address: SAME AS ABOVE

City: State: Zip:

Transporter No. 1: ATLAS ENVIRONMENTAL

US EPA ID #: NOT REQUIRED Phone: 703-339-9770

Transporter No. 2:

US EPA ID #: Phone:

Facility:

☒ Atlas Environmental Services, LLC, 10139 Giles Run Road, Lorton, Virginia 22079

☐ Other:

Additional Information:

24 Hour Emergency Phone Number
703-339-9770

PO413 8 73 / 1367873

Non RCRA/Non DOT Regulated Material, Liquids

Line	Material
1	Petroleum Impacted Water / Commercial Contact Water
	Diesel and Water for Recycling
	Glycols for Recycling
	Kerosene and Water for Recycling
	Mineral Oil for Recycling
	Oil for Recycling
	Oil, Water for Recycling
	Wastewaters

Non RCRA/Non DOT Regulated Material, Solids

Line	Material
	Ash, Fly
	Debris, C & D related
	Debris, Petroleum Impact, Specify:
	Drums, Empty
	Filters for Recycling, Petroleum Impacted:
	Sludge, Industrial
	Sludge, Oil
	Sludge, Tank Bottom
	Soil, Petroleum Impacted, Specify:
	Soil, Oil
	Sorbents, Diesel Fuel
	Sorbents, Oil
	Other

DOT Regulated / Non, RCRA Materials - Liquids

Line	Material
	Gasoline Mixture 3, UN1203, PGII ERG #128 for Recycling
	Gasoline 3, UN1203, PGII ERG #128 for Recycling
	Fuel Oil (No. 1,2,4,5,or 6) 3, NA1993, PGII ERG #128
	Diesel Fuel 3, 1993 PGIII ERG #128
	Fuel, Aviation, Turbine Engine 3, UN1863, PGII ERG #128
	Kerosene, 3, UN 1223, PGIII, ERG #128
	Other

Line	Containers No.	Containers Type	Total Quantity	Unit Wt. / Vol.	Quantity Liquid	Quantity Solid	Quantity Sludge	Notes
1	1	TT	2700	GAL	2700	Ø	Ø	
2								
3								
4								
5								
6								

Generator's Certification: I certify the materials described above on this document are not subject to federal regulations for disposal of Hazardous Waste as defined by RCRA. I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable federal, state, and local regulations.

Type / Print Name: Charlie Low on behalf of Fairfax 26MS Signature: [signature] Month / Day / Year 4-11-13

Transporter 1 Acknowledgement of Receipt of Materials

Type / Print Name: JAMES J DUNN Signature: James J Dunn Month / Day / Year 4-11-13

Transporter 2 Acknowledgement of Receipt of Materials

Type / Print Name: Signature: Month / Day / Year

Discrepancy Indication Space

Facility Owner or Operator: Certification of receipt of materials covered by this manifest except as noted in Discrepancy above.

Type / Print Name: [signature] Signature: [signature] Month / Day / Year 4/11/13

ORIGINAL: RETURN TO GENERATOR

For Facility Use Only
I.D.# 62779

Date:

NON-HAZARDOUS MANIFEST

For Facility Use Only
Manifest# 72099

Reco BIOTECHNOLOGY
710 Hospital Street
Richmond, VA 23219
(804) 644-2800

Generator: Name Fairfax Petroleum Realty LLC
Address 9901 Georgetown Pike
Great Falls, VA
site - service station at above address
Contact Name Mark Steele
Telephone 410-850-0404

Transporter: or Carrier Name Vantage Indl Partners
Address Midlothian, VA
Contact Name AJ Anonick
Telephone 804-335-1077

Destination: Delivery Address Reco Biotechnology
710 Hospital Street
Richmond, VA 23219
Contact Reco Biotechnology
Telephone (804) 644-2800

Route:

NO. of Packages	(*) Container	Shipping Description	Soil Weight (Sub. to Cor.)
30	DM	Non-Regulated Material non-regulated None None (petroleum contaminated soil)	

*- DM = Drum
DT = Dump Truck/Trailer
SC = Steel Container
RC = Rail Car

Truck #:

*Gross Weight:
Tare Weight:
Net Weight:
* May attach weight tickets

Certification:
I/We certify that the above material is not a HAZARDOUS WASTE as defined by the Resource Conservation and Recovery Act (RCRA), Virginia Hazardous Waste Management Regulations or as defined by the state of origin.

PRINTED/TYPED NAME & TITLE SIGNATURE DATE

Truck Driver's Signature: Andrew Date: 4 25 13

Discrepancies:

RECEIVED BY: Reco Biotechnology
SIGNED BY:
DATE: 4-25-13

Aqua Clean of Virginia, LLC dba Reco Biotechnology

Designated Facility: Reco Biotechnology
710 Hospital Street

See Aerial Photo

Richmond, VA 23219
(804) 644-2800

MANIFEST NO. _____

RECO JOB NO. 32831
ERG# 128

Generator: Fairfax Petrol. Realty # 26140
Site Address: 9901 Georgetown Pike
Great Falls VA

Contact: Paxton Wertz
Emergency Phone: 410-850-0404

I declare that the material released to Reco Biotechnology is fully and accurately described and classified, is not hazardous waste and in all respects in proper condition for transport by highway in accordance with all applicable federal, state and local regulations.

No. of Packages - * Type	HM	Description of articles, special marks and exceptions	Hazard Class	I.D. Number	Packaging Group	Labels Required	Gallons Subject to Correction
9 DM	X	GASOLINE *Gasoline and water purge water*	3	UN1203	PG II	Flammable Liquid	

*DM=Drum; TT=Tank Trucks; RC=Rail Car

Generator / Agent Authorized Signature: n/A Date: _____

Transporter

Company: V.I.P.
Address: Powhatan VA

Truck# _____
Phone: _____

Driver (Printed Name): Andrew Garrett
Discrepancies: No ONE ON SITE TO SIGN

Signature: Andrew Garrett
Date: 23 Aug 2013

Received by: Reco Biotechnology
Printed Name: DHunt
Signature: DHunt
Date: 8-23-13

Appendix F
Borehole Geophysical Reports

Final Report
Borehole Geophysical Logging Program
Two Wells – MW-17D and MW-18D
9901 Georgetown Pike
Great Falls, VA
MAG Project Number 041315

Prepared For: Kleinfelder
Prepared By: Mid-Atlantic Geosciences
May 9, 2013
Revised July 25, 2013

1051 Columbia Avenue ● Lancaster, PA 17603 ● 717.396.8922 ● Fax 717.396.8746 ● email@enviroscan.com ● www.enviroscan.com

May 9, 2013

Mr. Charlie Low
Kleinfelder
1340 Charwood Road
Suite 1
Hanover, MD 21076

RE: Borehole Geophysical Logging Program
Two Wells – MW-17D and MW-18D
9901 Georgetown Pike
Great Falls, VA
MAG Project Number 041315

Dear Mr. Low:

Pursuant to our proposal dated April 10, 2013, Mid-Atlantic Geosciences (MAG – the borehole logging division of Enviroscan, Inc.) completed the above-referenced logging on April 29 and 30, 2013. The objective of the survey was to locate and characterize fractures and potential water-bearing zones intersecting the wells. To accomplish these objectives, MAG conducted Acoustic Televiewer, 3-Arm Caliper, Fluid Temperature, Fluid Conductivity, Natural Gamma, Short- and Long-Normal Resistivity, Single Point Resistance, Spontaneous Potential, and Heat Pulse Flowmeter (under static and pumping conditions) logging. In addition, a video log was recorded for MW-18D to document unexpected conditions (see below).

Logging Equipment

Mid-Atlantic Geosciences conducts borehole geophysics, televiewer, and video logging using a Robertson Geologging, Ltd. Micrologger II and/or a Mount Sopris Matrix. These units record digital data for on-site log playback, reproduction, and field interpretation, as well as post-processing and report presentation. The systems are driven by field PCs running software supplied by the manufacturer for data acquisition, log replay, probe control, probe calibration, and logging environment compensation. Video logs are recorded in real time to the hard drive of a DVD player/recorder, and can be burned to a DVD that is left with the client's on-site representative.

All of the logging instruments are permanently mounted in a dedicated Ford F350 or Dodge RAM2500 enclosed-bed truck, each with a self-contained power supply, and support and decontamination equipment. The downhole probes or sondes are connected to either a Robertson Geologging Smartwinch with approximately 600 feet of 0.375-inch coaxial cable, or a Robertson 2000m winch with approximately 3000 feet of 0.25-inch coaxial cable – depending on the depth of the wells logged.

Logging Parameters and Methodology

Geophysical well logging in general involves lowering sondes in a borehole and recording parameters that are related to the properties of the adjacent soil or rock, the fluids in the borehole or formation, and/or construction details of the well. There are many tools and techniques that have been developed to provide specific information in different environments and constructions of drilled holes. The data collected can define the nature and extent of geologic formations and formation fluids, and can be used to provide correlation between holes.

The sondes used for this survey are described below. Note that before any of these tools are put into service for a particular job, MAG personnel test them for proper function and recalibrate as necessary. This is essential to the proper acquisition of downhole data and the ability to relate the data from one borehole to another.

Acoustic Televiewer

The high-resolution acoustic televiewer (HRAT) provides a scan or image of the interior of the borehole that is created not by reflected visible wavelength light, but by reflected ultrasound. Since ultrasonic pulses are used, it is possible to record both the amplitude and travel time of each pulse, and construct two separate images. The amplitude log is analogous to a visual scan, while the travel time data are affected primarily by the local diameter of the borehole (i.e. the larger the bore, the later the arrival of the reflected pulse), and therefore can supplement or replace a caliper log. The main advantage of the HRAT probe is that it can be used in larger boreholes than optical tools, and in holes with turbid or particle-loaded fluids that would be opaque to optical methods.

The HRAT operates by using a fixed acoustic transducer and a rotating acoustic mirror capable of focusing on the borehole wall at any distance from the probe diameter upwards. The acoustic transducer is focused based on the borehole diameter and impedance-matched to the borehole fluid to provide optimum image resolution and reflected amplitude. Mirror rotation speed (i.e. circumferential resolution), sampling rate (i.e. depth resolution), signal gain (i.e. amplitude image contrast), and recording time gate (i.e. travel time image contrast) are all variable and under operator control to provide the best image possible under borehole-specific conditions.

HRAT logs are presented as accurately-scaled and accurately-oriented cylindrical images that are sliced open and laid flat. Therefore, planar dipping features appear as sinusoids from which the strike and dip of the feature can be calculated (see Appendix A). Selected and representative televiewer features are listed in Appendix B and on the log sheet. Based on their visual character, planar features have been categorized as various types of geologic interface (fractures, bedding planes, veins, etc.). Feature apertures are listed in tenths of an inch. An aperture of zero for an open fracture simply means that while it appears to be a continuous open feature, the opening is smaller than the line thickness on the log (~0.015 inches). Note that it has been the experience of MAG that the aperture or Paillet rank of a feature is not always a strong indicator of its water-producing potential. Thin, discrete features sometimes produce as much or more water (as evidence by flow meter logging or packer testing) than wide, open fractures or fracture zones.

Caliper

Caliper measurements represent the average diameter of the borehole or well at a given depth. The caliper tool collects and transmits the data from three spring-loaded arms as the tool is lifted upwards through the borehole. The caliper tool is used to locate solution openings or fractures (where the borehole is typically enlarged due either to the presence of natural openings, or to plucking of broken rock by the drill bit), and to determine the length of casing intervals (as evident from small changes in casing diameter, or the small enlargements at threaded junctions, or narrowing due to the bead at welded junctions).

Caliper logs are collected by calibrating the downhole tool with a measuring template, lowering the tool to the base of the well, remotely opening the arms, and then logging the open borehole and casing diameter in an upward direction. Caliper logs are acquired with a logging speed of no more than 12 feet per minute.

Fluid Temperature

Fluid temperature logs provide the temperature of the air or fluid in a borehole as a function of depth. Temperature logs can indicate where water is entering or leaving a borehole – and thereby disturbing the normal geothermal gradient. Deviations, offsets, or changes in the slope of the temperature log can be used to locate zones of water movement within the borehole. Temperature logs must be run in wells that have been allowed to fully equilibrate to the local geothermal gradient following any prior drilling, construction, pumping or sampling. During a temperature survey, data accuracy is ensured by maintaining a downward logging speed of approximately 10 feet per minute (fpm). This provides an adequate time buffer to allow sensors to respond to minor temperature changes.

Fluid Conductivity

Fluid conductivity logs provide a continuous measurement of the electrical conductivity of the borehole fluid – i.e. zero in air or hydrocarbons, greater than zero in water. In water, electrical conductivity is mostly a function of electrolytic content. Water with very low dissolved solid concentrations will yield low fluid conductivity, while water containing a high level of dissolved solids will be proportionally more conductive. Fluid conductivity logs often deflect where water-producing features are transmitting water into or out of the well (since the well water may have a differing electrolytic chemistry than the formation water). The fluid conductivity log is usually collected simultaneously with the temperature log – since for both, data from a fully equilibrated water column is required.

Natural Gamma

Gamma logs are one of the most widely used geophysical logs in groundwater applications. They are used primarily to identify changes in lithology – specifically the relative amounts of clay in various sedimentary units.

A gamma log provides a record of the total natural gamma radiation detected within a given energy range. In water-bearing rocks and sediments that are not contaminated by artificial radioisotopes, the most significant naturally-occurring, gamma-emitting radioisotopes are potassium-40 and the daughter products of the uranium and thorium decay series. If gamma-emitting artificial radioisotopes have been introduced by humans into the groundwater system, they will also produce part of the radiation measured.

The amplitude of gamma-log deflections is affected by any borehole condition that alters the density of the material through which gamma photons must pass or the length of the travel path. The bedding of a gamma-emitting formation must be thick to obtain a quantitative value since the detector will be affected by the radiation from the formation as the tool approaches and passes the bed. Although increases in borehole diameter or the presence of steel casing will decrease the recorded gamma count, it is possible to collect usable information in both cased and open portions of the borehole using the gamma sonde. The presence of potassium-rich (and therefore gamma-emitting) bentonite clay commonly used in well construction will generally produce high gamma count peaks on a natural gamma log. MAG has natural gamma detectors on many sondes, and comparison of the multiple gamma logs collected for any given well logging program are used to ensure that the depths of differing logs are not erroneously shifted. Therefore, the gamma log presented for any well may have been collected simultaneously with any of the other logs from the same well.

Short and Long Normal Resistivity

In resistivity logging, the sonde is set up with a series of electrodes set some fixed distance away from each other. The most common arrangement of these spacings is 16 inches (short normal) and 64 inches (long normal) apart. To take a measurement, a current with a fixed low amperage (I, typically tens of milliamps) is driven between the tip of the sonde, and the exposed cable armor 30 feet above the sonde. The potential difference or voltage (V) between the short and long normal-spaced electrodes is recorded, and the resistance to current flow (R) in the formation is then given by Ohms law (R=V/I). This resistance (in Ohms), which is a property of the electrical circuit created by the electrodes and formation, is converted to apparent resistivity (in Ohm-meters), which is a physical property of the formation, based on the known electrode geometry. Readings are recorded continuously as the sonde is lowered in the borehole – typically at less than 20 fpm.

In most situations, the 16-inch or short normal log is used to interpret the electrical properties of the formation near the borehole, or in the invaded zone. The 64-inch or long normal log gives a better indication of the resistivity deeper in the formation where there may be no effect from the drilling itself. Care must be taken when interpreting resistivity logs since thin beds that measure close to the thickness of the electrode spacing on the sonde may cause a reverse response. Therefore, normal resistivity logs are most useful in boreholes with thick lithologic units. The presence of thin-bed reversals can also be detected by comparing the normal resistivity logs with the single point resistance (SPR) log described below (which they should generally mimic in the absence of reversals). Normal resistivity logs are typically collected along with SPR and spontaneous potential (SP) logs using a single sonde. The interpretation of resistivity logs is generally straightforward. Low resistivities represent clay minerals or conductive (e.g. electrolytic) pore fluids, while high resistivities represent clean sand or carbonate beds with low porosity or low fluid conductivity within the porosity. Normal resistivity logs record a physical property of the formation, and can therefore provide valuable comparisons between differing wells.

Single Point Resistance

Single point resistance (SPR) logs measure the resistance (in Ohms) between an electrode on the sonde, and one buried at the ground surface near the wellhead. This provides a resistance that is specific to the particular geometry of the circuit (i.e. the placement of the wellhead electrode), and not a resistivity that is a physical property of the formation. However, the log provides relative data within a well that is sensitive to the presence of conductive minerals (e.g. clays) in the formation, and the degree of porosity and conductivity of the fluid in the porosity. The interpretation of resistance logs is also straightforward, and follows the relative patterns described above for normal resistivity logs. However, SPR values are relative, and may be difficult to compare between different wells.

Spontaneous Potential

Spontaneous potential (SP) logging is the oldest and simplest method. It uses a lead (non-polarizing) electrode on a sonde to measure the naturally-occurring potential difference (typically in millivolts) between the sonde in the formation, and a reference electrode buried near the wellhead. Naturally-occurring potential differences are commonly present at the interfaces between materials with differing ionic content – e.g. at contacts between saturated sand and shale, or between salty and fresh water. Note that unlike resistivity and SPR logs that are sensitive to beds, SP logs are sensitive to the contacts between beds (or contacts between waters with differing ionic content). Like SPR, SP values are relative, and therefore difficult to compare between wells. SP logs are typically recorded along with normal resistivity and SPR logs at speeds of less than 20 fpm.

Heat Pulse Flowmeter

Unlike all other logs that are continuous records of some parameter versus depth, heat pulse flowmeter (HPFM) logs are made with the sonde stationary in the borehole at discrete depth intervals or at stations selected to suit a particular study. In the sonde, large capacitors are charged from the surface power supply and can be discharged rapidly on command through a high resistance wire grid (like the heating elements on an electric stove). The discharge creates an infinitesimally thin disc of heated water. By conduction alone, the heat in this disc disperses slowly due to the poor heat conduction of water. In addition, the slight change in density of the heated water will cause it to rise very slowly (i.e. by convection). However, in the presence of vertical flow, the heated disc of water will move up or down with the flow velocity. In the sonde, thermistors are set at fixed equal distances above and below the heating grid, and sense the passage of the heated disc. Prior to firing the heating element, the two thermistor outputs are equalized so it is possible to interpret any subsequent differential output as a relative change in temperatures between thermistors. The temperature differential data is sent to the surface where the flow rate (in fpm) can be calculated based on the known positions of the thermistors. If the borehole diameter is known, the flow in fpm can be converted to gallons per minute (gpm). Note that by convention, negative flow values represent downward flow.

The main limitation of the heat pulse flowmeter is that it can only accurately measure the vertical component of flow in a borehole. Any horizontal flow cannot be quantified due to the location of the thermistors relative to the heat grid. This factor must be taken into consideration when interpreting heat pulse flowmeter data. Unfortunately, there is no reliable tool for measuring horizontal flow in a borehole. In addition, please note that even in the presence of water-bearing features, vertical flow will only occur in a static well if it intersects two or more features with differing hydraulic heads. For example, a well might intersect just a single, highly productive zone, but since there is no other zone with a different head, the only static flow in the well would be horizontal (across the well - if at all). Therefore, lack of vertical flow under static conditions does not necessarily imply an absence of hydrogeologically important features.

The heat pulse flowmeter is typically operated after the borehole has stabilized from the effects of any prior logging runs in the borehole. In addition, after moving the sonde itself, the hole is allowed to equilibrate before taking any measurements. At each station, multiple measurements are usually recorded to ensure repeatability. The borehole is also allowed to equilibrate between successive measurements at a given station to ensure that the measured flow is due to natural flow conditions, and not conduction or convection from previous measurements. The heat pulse flowmeter is typically run under static conditions and may not quantify flow in some water-producing zones where there is only horizontal flow and/or no head difference between adjacent features. However, in some cases, these zones may be identified by recording heat pulse flowmeter data under stressed or pumping conditions which induce artificial head differences.

Logging Results

The wells were logged on April 29 and 30, 2013. The logging results for the wells are presented on the enclosed digital logs and tables, and briefly summarized below.

Note that since analysis of borehole geophysical logs can be quite subjective, and the level of detail is dependent upon the specific goals of the geologist, the analysis by MAG below covers the major features of each log, as well as some possibly minor features to serve as examples or guides for further interpretation by geologists familiar with the site, local geology, and/or project goals. In general, logs may display deviations (i.e. "spikes" where the parameter deviates from, and then returns to, "background" level), offsets (changes in background level), or slope changes. Any of these could be considered significant in certain situations, or when compared to correlating features at the same depth on other logs. If there are any questions about the features discussed (or not discussed) below, please do not hesitate to contact MAG.

MW-17D

Noted Features

- The total depth (TD) of the well was logged at approximately 150 feet below ground surface (BGS).
- The depth to water (DTW) was measured at 33.5 feet BGS at the time of the survey.
- The diameter of the casing at the surface was measured to be six inches, and the bottom of the casing (BOC) was located at approximately 68 feet BGS.
- The caliper (borehole diameter) log reveals enlargements at 74.75, 75.65, 87.99, 91.95, 98.12, 116.35, and 118.52 feet BGS. There are additional minor small enlargements at greater depths.
- The fluid temperature log shows a general cooling of the water with depth, but no significant deviations, offsets, or changes in slope (except at the top of the water column).
- The fluid conductivity log shows a general minor decrease in conductivity with depth, but no deviations or offsets.
- Numerous planar features were recognizable on the televiewer log. The depth, strike, dip, aperture, and feature type for many of these are listed on the log, as well as on the accompanying table in Appendix B. Features associated with significant caliper deviations occur at 88 and 92 feet BGS.
- The electrical and natural gamma logs show generally smooth variations that are probably related primarily to the clay content of the formation.

- Based primarily on the locations of caliper anomalies and televiewer features recognized in the field, thirteen stations or depths were selected for heat pulse flowmeter measurements. The recorded flows (based on an averaging of two to seven individual measurements per station) are listed below, with positive being upward flow and negative being downward flow. Measurements were recorded for static conditions, as well as at a pumping rate of 3 gallons per minute (GPM) with a pump set at 50 feet bgs (in the casing). The measured average flows are shown below.

Depth	Static Flow	3GPM Flow
72.0	0.00	3.92
77.0	0.18	3.12
85.0	0.43	3.14
90.0	0.00	2.13
102.0	0.12	1.50
107.0	0.32	1.44
112.0	0.00	1.18
117.0	0.00	1.16
124.5	0.03	1.10
132.0	-0.48	1.06
137.0	0.00	0.12
143.5	0.14	0.00
146.5	0.19	0.00

MW-18D

Noted Features

- The total depth (TD) of the well was logged at approximately 136 feet below ground surface.
- The depth to water (DTW) was measured at 40.65 feet BGS at the time of the survey.
- The diameter of the casing at the surface was measured to be six inches, and the bottom of the casing (BOC) was located at approximately 96 feet BGS.
- The fluid temperature log shows no significant deviations, offsets, or changes in slope except at the top of the water column.
- The fluid conductivity log shows an offset between 114 to 124 feet; an increase in conductivity of approximately 45%.
- During the combined temperature/conductivity run, the sonde briefly hung up at a depth of about 101 feet.
- The caliper sonde would not go deeper than about 115 feet, even with the caliper arms closed. Hand-lifting and -lowering the cable to feel the obstruction revealed that it was solid and continuous.
- The caliper log showed an enlargement at 108.5 feet and between 98 and 100 feet, and a constriction of the wellbore at about 101 feet.
- The apparent constriction and difference in depths between the two logging runs suggested that the hole was collapsing, so a video log was recorded. This showed a zone of loose and severely plucked rubble from 98 to 100 feet, and a rock blocking the hole at 101 feet. A copy of this video log has been delivered to the client as an AVI video file, and mailed on a DVD.

Limitations

In making verbal or written interpretation of logs, MAG personnel give the client the benefit of their best professional judgment. However, since all interpretations are based on inference from electrical, magnetic, or other indirect measurements, MAG does not, and cannot, guarantee the accuracy or the correctness of any such interpretations. MAG shall not be liable for any loss, damages, or expenses resulting from reliance on such interpretations. MAG does not warrant the accuracy of log data transmitted by any electronic process and will not be responsible for intentional interpretation of log data by others. MAG makes no warranties – neither explicit nor implied. Under no circumstances shall MAG, its parent company Enviroscan, Inc., or their personnel be liable for consequential damages.

We appreciate this opportunity to have worked with you. If you have any questions, please do not hesitate to contact me.

Sincerely,
Mid-Atlantic Geosciences

Timothy D. Bechtel
Principal Geophysicist

Technical Review By:
Mid-Atlantic Geosciences

Felicia Kegel Bechtel, M.Sc., P.G.
President

enc.: MW-17D: Televiewer, Geophysical, and Flowmeter Logs
MW-18D: Geophysical Logs
Appendix A: Planar Feature Orientation Parameters
Appendix B: Planar Feature Characterizations Table

Mid-Atlantic Geosciences

Title: *Televiewer and Geophysical Logs*

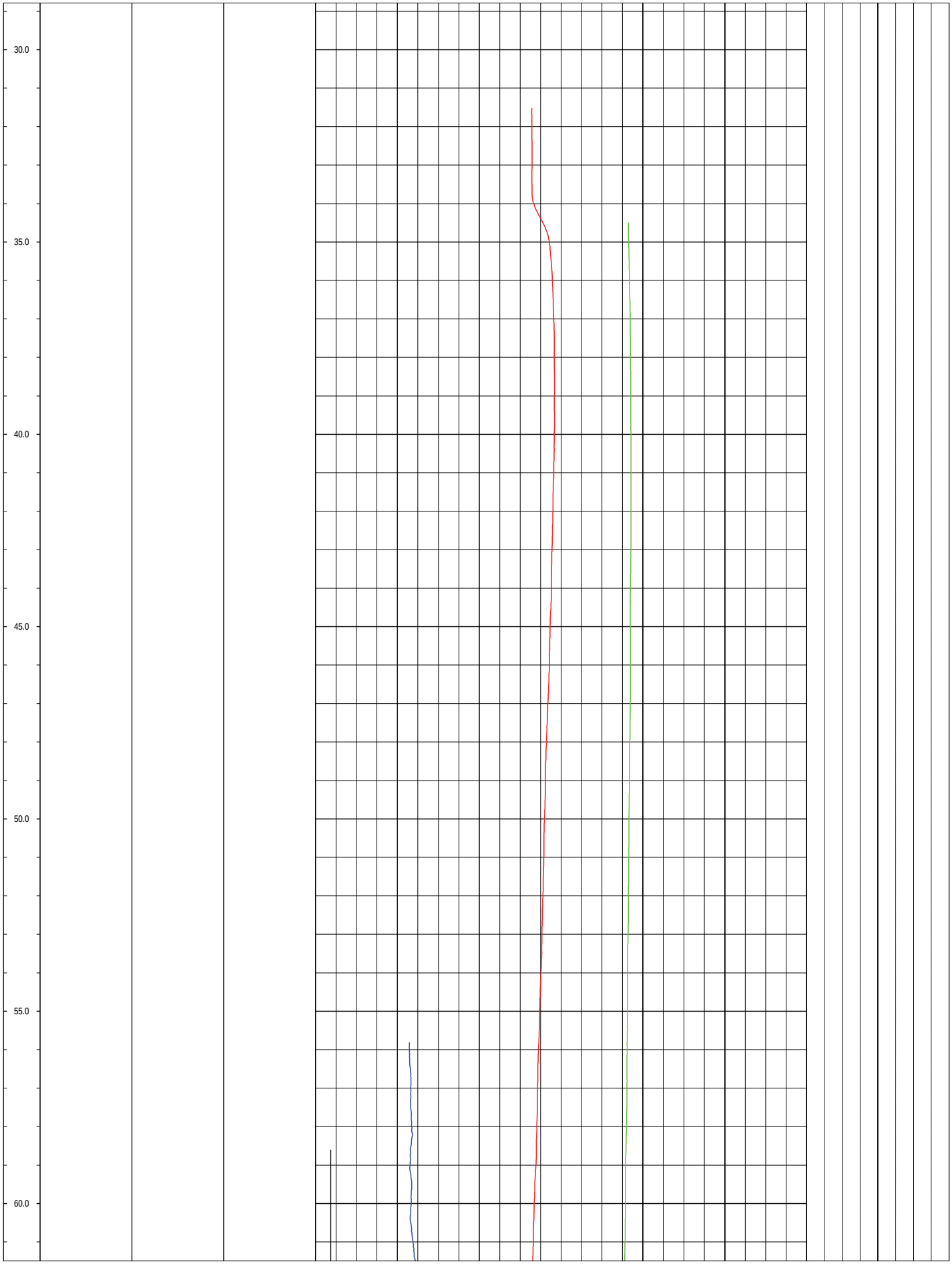
WELL ID *MW-17D*

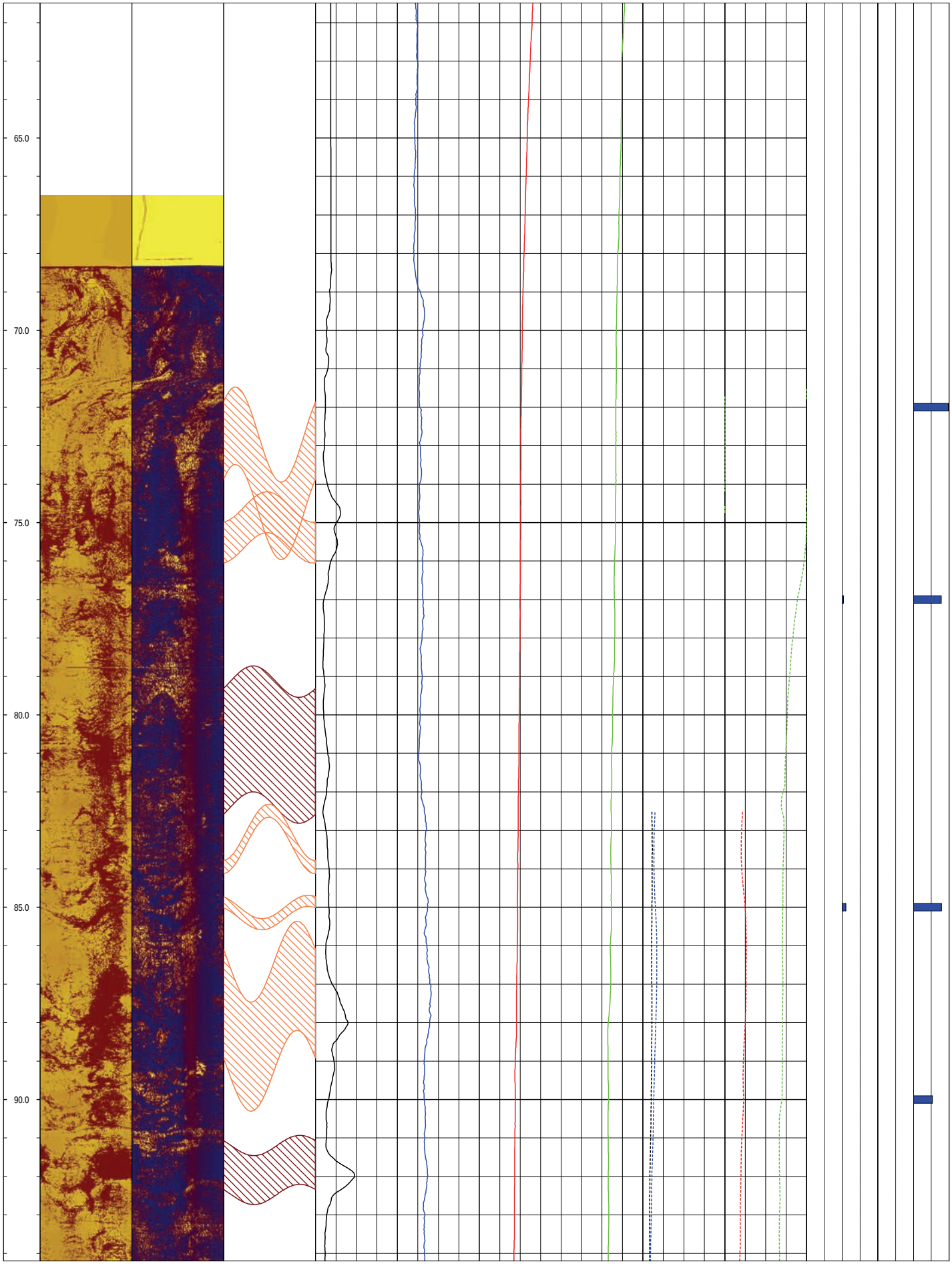
Logging Date: *04.29-30.2013*
Logging Datum: *Ground Surface*
BOC: *68'* **DTW:** *33.5'* **TD:** *150'*

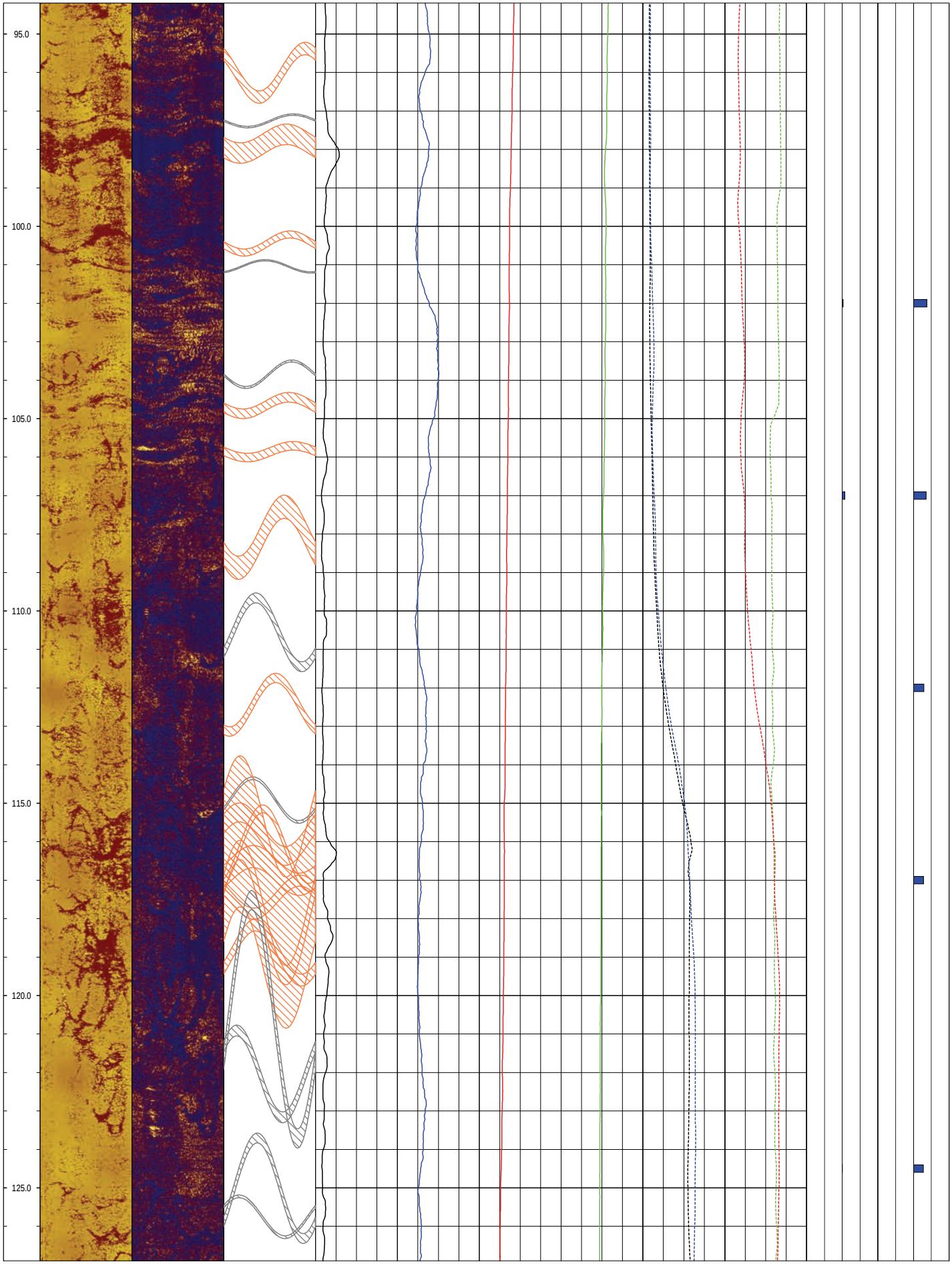
Site Name: *9901 Georgetown Pike*
Location: *Great Falls, VA*
Client: *Kleinfelder*
Project No.: *041315*
Revision Date: *07.25.2013*

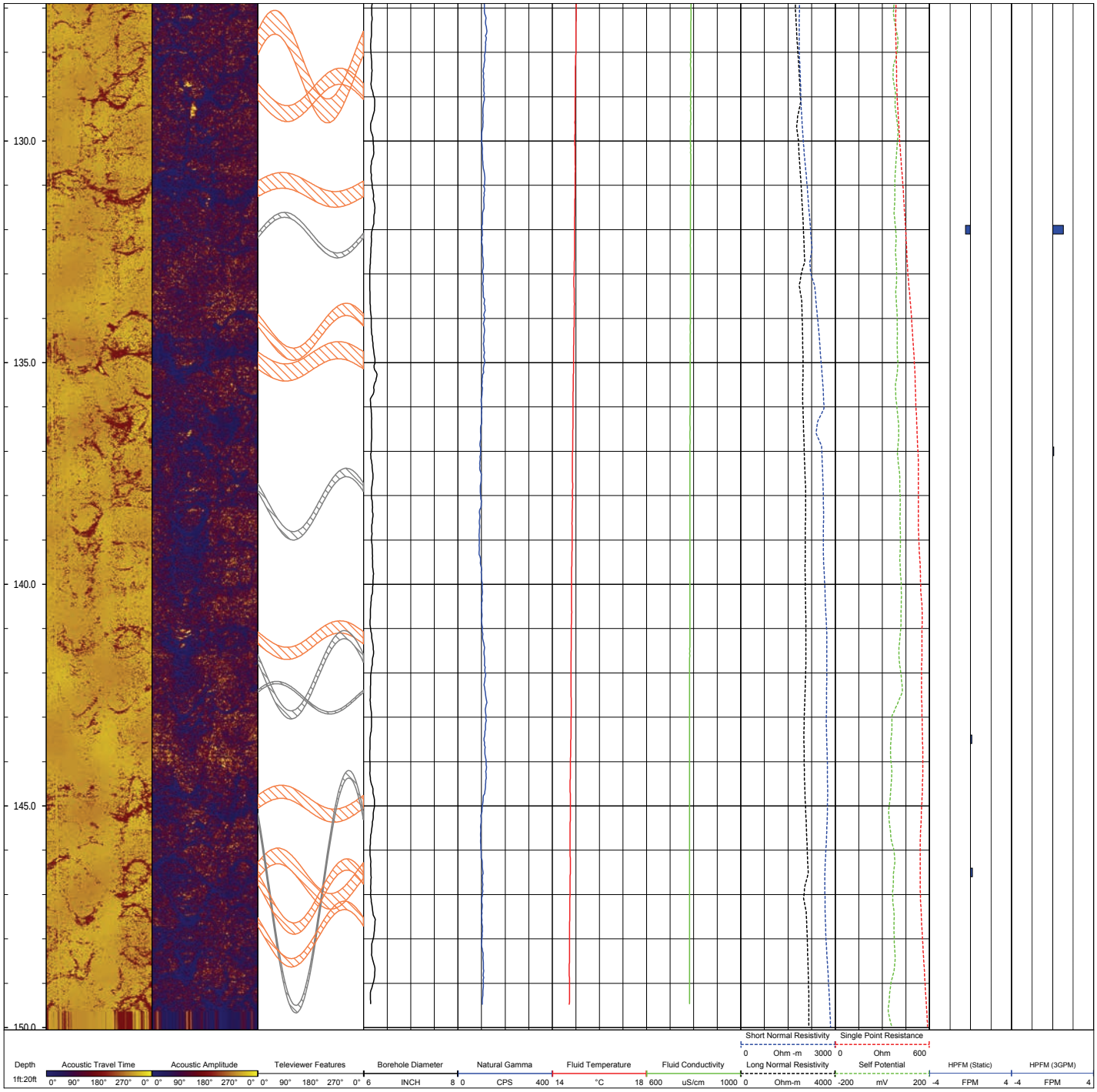
Depth 1ft:20ft	Acoustic Travel Time	Acoustic Amplitude	Televiewer Features	Borehole Diameter	Natural Gamma	Fluid Temperature	Fluid Conductivity	Long Normal Resistivity	Self Potential	HPFM (Static)	HPFM (3GPM)
	0° 90° 180° 270° 0°	0° 90° 180° 270° 0°	0° 90° 180° 270° 0°	6 INCH 8	0 CPS 400	14 °C 18	600 uS/cm 1000	0 Ohm-m 4000	-200 mV 200	-4 FPM 4	-4 FPM 4
								Short Normal Resistivity 0 Ohm -m 3000	Single Point Resistance 0 Ohm 600		

0.0
5.0
10.0
15.0
20.0
25.0


30.0
35.0
40.0
45.0
50.0
55.0
60.0


65.0
70.0
75.0
80.0
85.0
90.0


95.0
100.0
105.0
110.0
115.0
120.0
125.0


130.0
135.0
140.0
145.0
150.0
Depth
1ft:20ft
Acoustic Travel Time
0° 90° 180° 270° 0°
Acoustic Amplitude
0° 90° 180° 270° 0°
Televiewer Features
0° 90° 180° 270° 0°
Borehole Diameter
6 INCH 8
Natural Gamma
0 CPS 400
Fluid Temperature
14 °C 18
Fluid Conductivity
600 uS/cm 1000
Short Normal Resistivity
0 Ohm -m 3000
Long Normal Resistivity
0 Ohm-m 4000
Single Point Resistance
0 Ohm 600
Self Potential
-200 mV 200
HPFM (Static)
-4 FPM 4
HPFM (3GPM)
-4 FPM 4

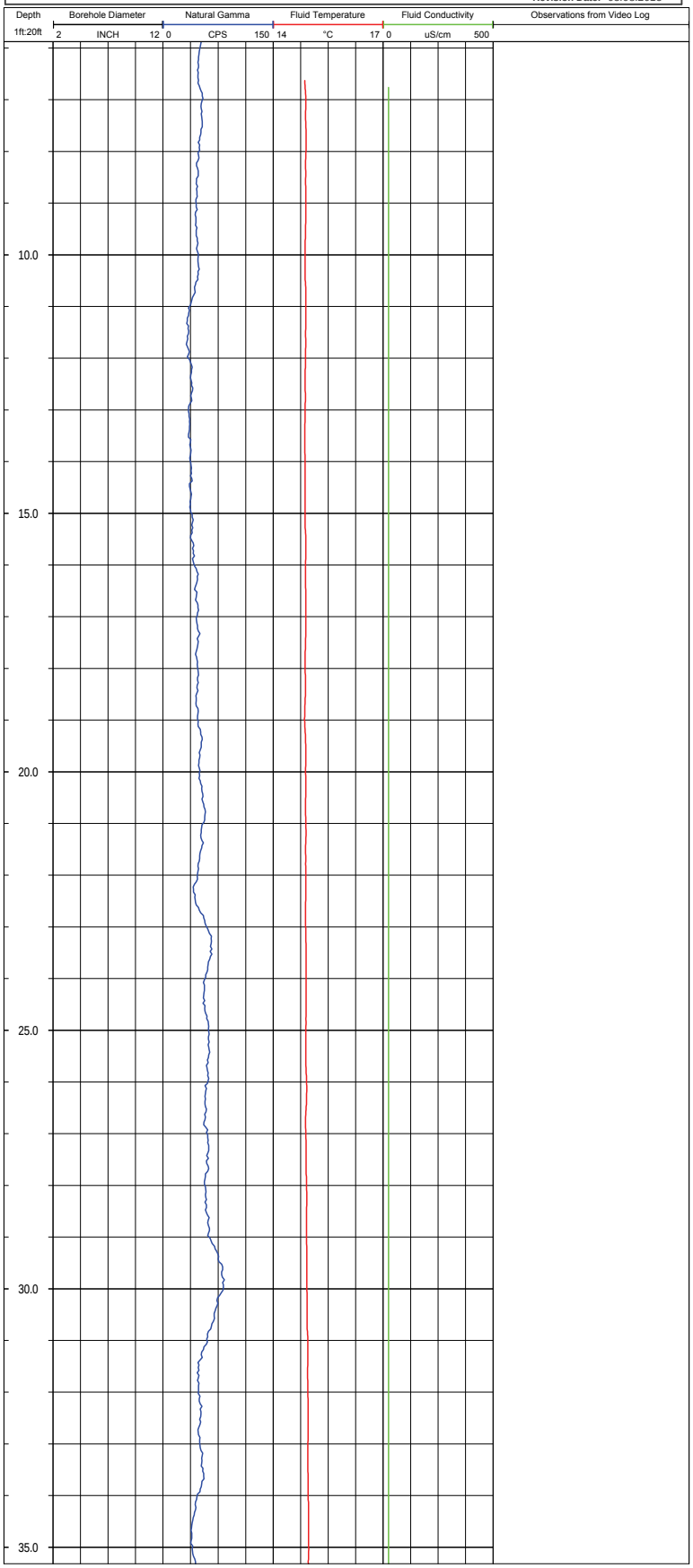
Mid-Atlantic Geosciences

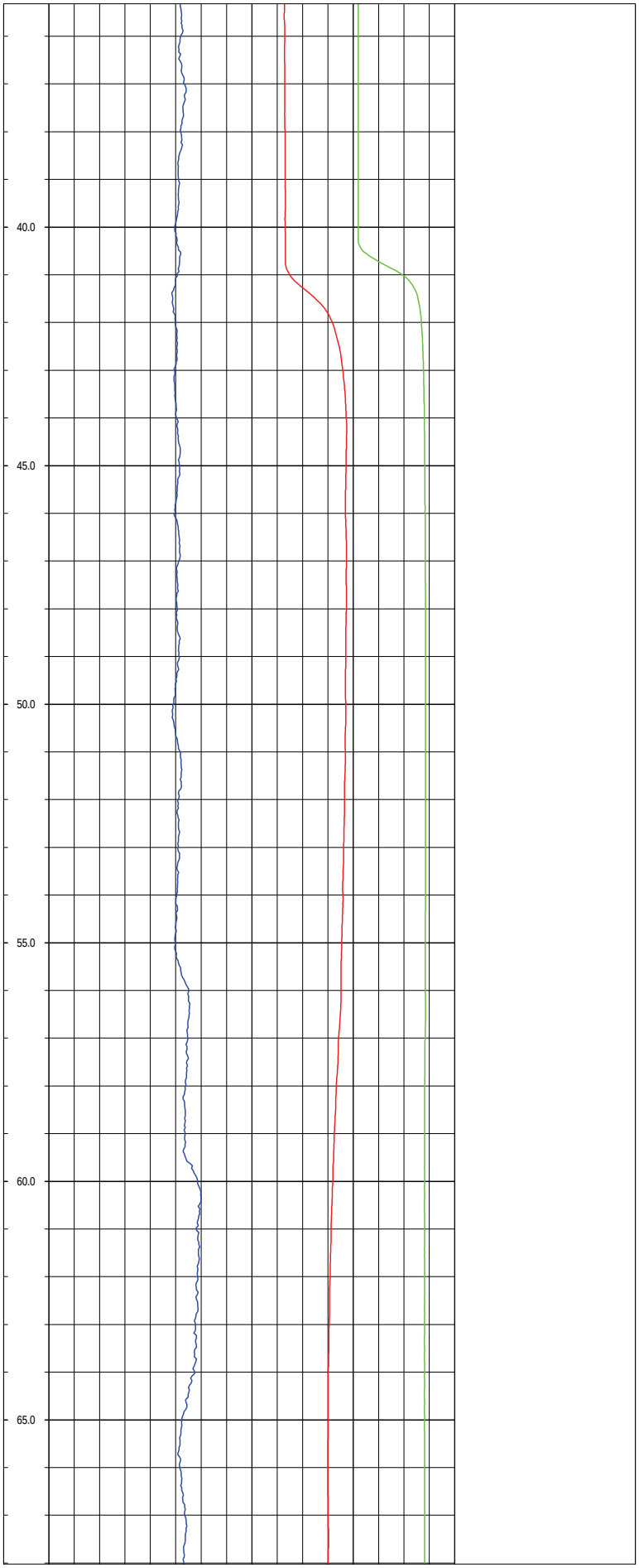
Title: *Televiewer and Geophysical Logs*

WELL ID *MW-18D*

Logging Date: *04.29.2013*
Logging Datum: *Ground Surface*
BOC: *96'* **DTW:** *40.65'* **TD:** *136'*

Site Name: *9901 Georgetown Pike*
Location: *Great Falls, VA*
Client: *Kleinfelder*
Project No.: *041315*
Revision Date: *05.08.2013*

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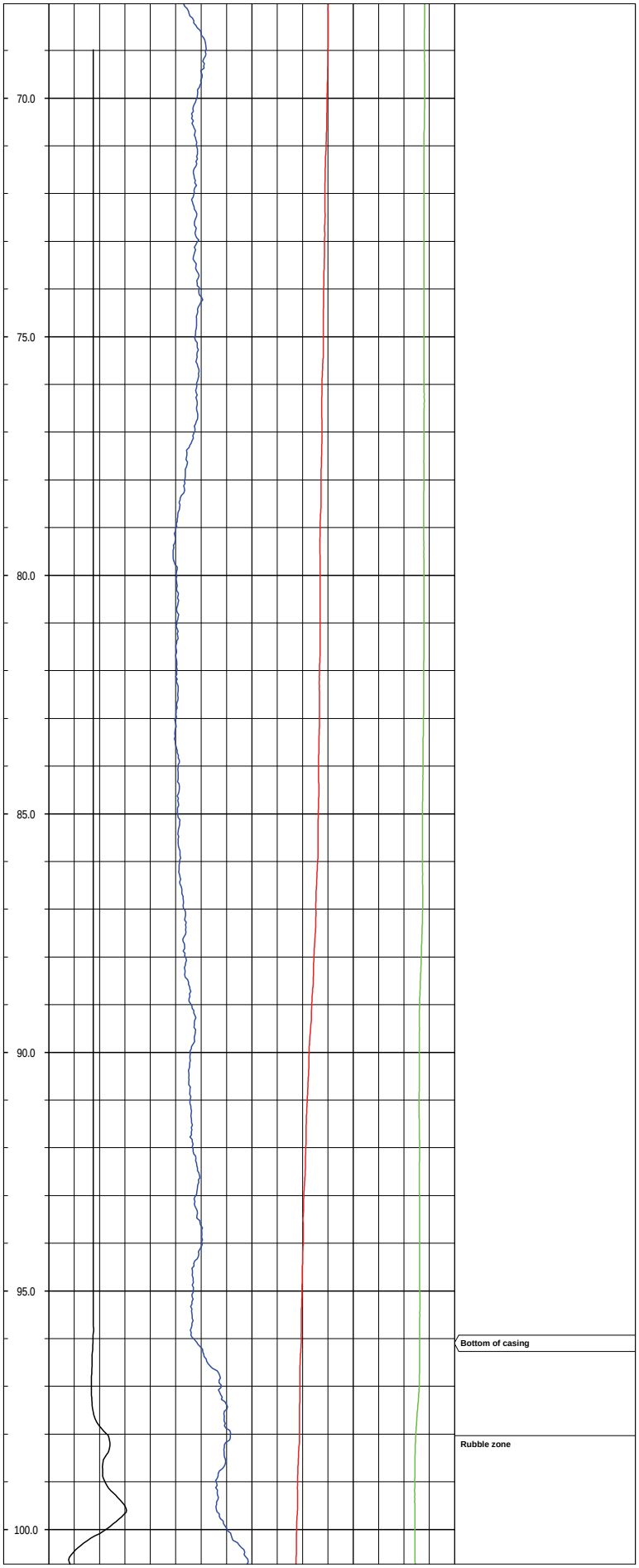
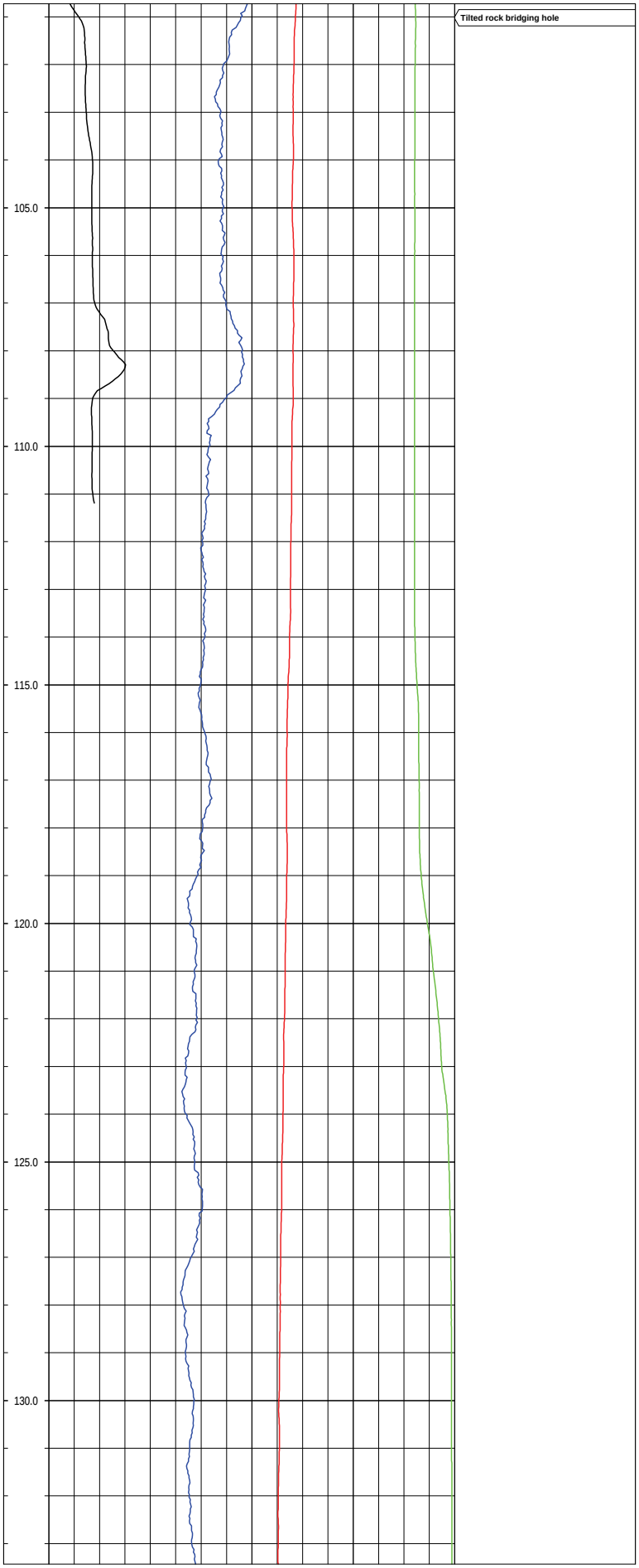
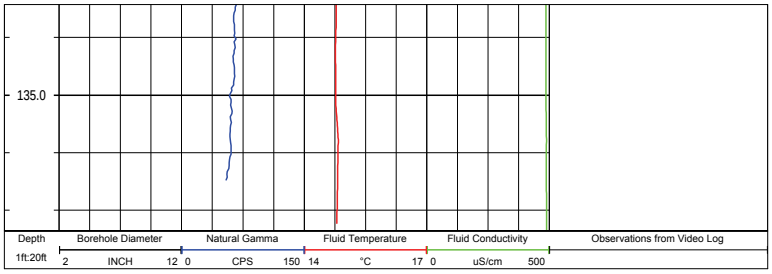
45.0
50.0
55.0
60.0
65.0


70.0
75.0
80.0
85.0
90.0
95.0
100.0
Bottom of casing
Rubble zone

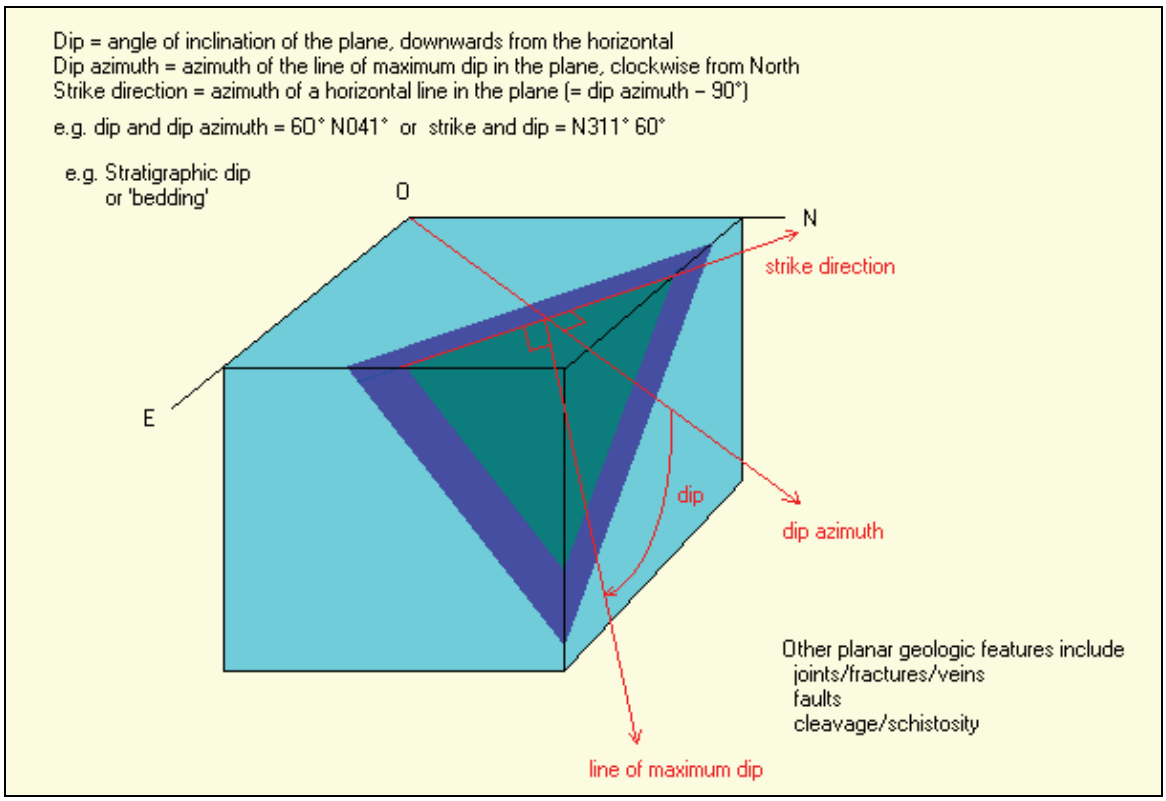

Tilted rock bridging hole
105.0
110.0
115.0
120.0
125.0
130.0


135.0
Depth
1ft:20ft
Borehole Diameter
2 INCH 12
Natural Gamma
0 CPS 150
Fluid Temperature
14 °C 17
Fluid Conductivity
0 uS/cm 500
Observations from Video Log

Appendix A

Planar Feature Orientation Parameters

Planar Feature Orientation Parameters



Appendix B

Planar Feature Characterization Tables

Mid-Atlantic Geosciences
Planar Feature Characterizations

Well ID:	**MW-17D**	**Client:**	**Kleinfelder**
Site Name:	**9901 Georgetown Pike**	**Project No.:**	**041315**
Location:	**Great Falls, VA**	**Revision Date:**	**07.24.2013**

Depth	Aperture (in.)	Dip Azimuth (deg.)	Strike (deg.)	Dip (deg.)	Feature Type
73.7	5.0	226	N44W	78W	Open Fracture
75.1	7.1	350	N80E	56W	Open Fracture
80.8	21.1	295	N25E	58W	Fracture Zone
83.2	1.4	357	N87E	70W	Open Fracture
85.1	2.3	150	S60W	49E	Open Fracture
87.8	8.9	107	S17W	75E	Open Fracture
91.8	11.2	119	S29W	43E	Fracture Zone
96.0	1.5	139	S49W	67E	Open Fracture
97.3	0.4	93	S3W	32E	Sealed Fracture
97.9	4.8	66	S24E	42E	Open Fracture
100.5	1.7	80	S10E	42E	Open Fracture
101.0	0.4	342	N72E	32W	Sealed Fracture
103.8	0.4	87	S3E	53E	Sealed Fracture
104.7	2.3	75	S15E	40E	Open Fracture
105.9	2.3	92	S2W	30E	Open Fracture
108.1	2.2	57	S33E	72E	Open Fracture
110.6	0.9	306	N36E	74W	Sealed Fracture
112.4	1.0	23	S67E	70E	Open Fracture
114.9	0.4	294	N24E	65W	Sealed Fracture
115.8	2.5	242	N28W	65W	Open Fracture
116.2	0.6	333	N63E	75W	Open Fracture
116.8	4.0	296	N26E	55W	Open Fracture
117.3	7.6	244	N26W	81W	Open Fracture
117.4	1.8	118	S28W	59E	Open Fracture
117.8	1.0	244	N26W	81W	Open Fracture
118.9	1.2	304	N34E	70W	Open Fracture
120.6	0.5	290	N20E	85W	Sealed Fracture
122.0	0.8	231	N39W	77W	Sealed Fracture

125.0	0.6	312	N42E	79W	Sealed Fracture
125.8	0.4	240	N30W	64W	Sealed Fracture
128.3	1.6	237	N33W	76W	Open Fracture
129.0	2.3	100	S10W	59E	Open Fracture
131.1	3.3	263	N7W	40W	Open Fracture
132.1	0.6	271	N1E	61W	Sealed Fracture
134.3	1.5	121	S31W	63E	Open Fracture
135.0	3.3	95	S5W	44E	Open Fracture
138.2	0.8	121	S31W	70E	Sealed Fracture
141.3	2.1	99	S9W	49E	Open Fracture
142.0	0.6	113	S23W	74E	Sealed Fracture
142.6	0.4	244	N26W	53W	Sealed Fracture
145.0	2.4	260	N10W	46W	Open Fracture
146.6	1.9	248	N22W	63W	Open Fracture
146.9	0.2	129	S39W	84E	Sealed Fracture
147.0	1.0	123	S33W	71E	Open Fracture
147.9	0.9	114	S24W	68E	Open Fracture

Final Report
Borehole Geophysical Logging Program
Three Wells – MW-6D, MW-12, and MW-16D
9901 Georgetown Pike
Great Falls, VA
MAG Reference Number 111146

Prepared For: Kleinfelder
Prepared By: Mid-Atlantic Geosciences
February 2, 2012

1051 Columbia Avenue ● Lancaster, PA 17603 ● 717.396.8922 ● Fax 717.396.8746 ● email@enviroscan.com ● www.enviroscan.com

February 2, 2012

Mr. Brian Barone
Kleinfelder
1340 Charwood Road
Suite I
Hanover, MD 21076

RE: Borehole Geophysical Logging Program
Three Wells – MW-6D, MW-12, and MW-16D
9901 Georgetown Pike
Great Falls, VA
MAG Reference Number 111146

Dear Mr. Barone:

Pursuant to our proposal dated December 2, 2011, Mid-Atlantic Geosciences (MAG – the borehole logging division of Enviroscan, Inc.) completed the above-referenced survey on December 19 and 20, 2011. The objective of the survey was to locate and characterize fractures and potential water-bearing zones intersecting the wells. To accomplish these objectives, MAG conducted Optical Televiewer, 3-Arm Caliper, Fluid Temperature, Fluid Conductivity, Natural Gamma, Short- and Long-Normal Resistivity, Single Point Resistance, Spontaneous Potential, and Heat Pulse Flowmeter logging in the wells.

Logging Equipment

Mid-Atlantic Geosciences conducts borehole geophysics, televiewer, and video logging using a Robertson Geologging, Ltd. Micrologger II and/or a Mount Sopris Matrix. These units record digital data for on-site log playback, reproduction, and field interpretation, as well as post-processing and report presentation. The systems are driven by field PCs running software supplied by the manufacturer for data acquisition, log replay, probe control, probe calibration, and logging environment compensation. Video data (if collected) are recorded in real time to the hard drive of a DVD player/recorder, and can be burned in the field to a DVD that is left with the client's on-site representative.

All of the logging instruments are permanently mounted in a dedicated Ford F350 or Dodge RAM2500 enclosed-bed truck, each with a self-contained power supply, and support and decontamination equipment. The downhole probes or sondes are connected to either a Robertson Geologging Smartwinch with approximately 600 feet of 0.375-inch coaxial cable, or a Robertson 2000m winch with approximately 3000 feet of 0.25-inch coaxial cable – depending on the depth of the wells logged.

Logging Parameters and Methodology

Geophysical well logging in general involves lowering sondes in a borehole and recording parameters that are related to the properties of the adjacent soil or rock, the fluids in the borehole or formation, and/or construction details of the well. There are many tools and techniques that have been developed to provide specific information in different environments and constructions of drilled holes. The data collected can define the nature and extent of geologic formations and formation fluids, and can be used to provide correlation between holes.

The sondes used for this survey are described below. Note that before any of these tools are put into service for a particular job, MAG personnel test them for proper function and recalibrate as necessary. This is essential to the proper acquisition of downhole data and the ability to relate the data from one borehole to another.

Optical Televiewer

The borehole optical televiewer (OPTV) or Optical Borehole Imager (OBI) provides a high-resolution digital optical scan of the interior of a borehole using visible wavelength light. From the accurately-scaled, continuous image it is possible to identify the depth and character of features such as fractures, bedding planes, veins, solution openings, etc. In particular, it is possible to calculate the strike, dip, and aperture of planar features. The OPTV operates by using a high-resolution color downhole camera which views a reflection of the borehole walls in a hyperbolic correction mirror. At successive depth increments of 0.5 mm, rings of pixels corresponding to circular scans of the borehole wall are acquired from the probe and stacked into a continuous image. The image is rectangular – representing the interior of a cylinder that has been sliced open and rolled-out flat. The image is oriented to north based on data from three magnetometers and accelerometers in the sonde. Note that the use of magnetometers for orientation leads to image distortion in steel-cased holes, and within several feet of the base of steel casing in open holes. All OPTV sondes require an open borehole, or one filled with a clear fluid.

Planar features intersecting a cylindrical borehole appear sinusoidal on the flattened cylindrical image. The azimuth of the peak/trough of the sinusoid, and the amplitude of the sinusoid can be measured and used to calculate the strike and dip (see Appendix A) of such features. Based on their visual character, planar features on the optical televiewer (and HRAT – see below) logs have been categorized on the log sheets as various types of geologic interface (fractures, bedding planes, veins, etc.). The features observed on the OPTV log can also be characterized based on the Paillet Ranking System developed by the US Geological Survey, Water Resources Division, Borehole Geophysics Research Project. This system is a semi-subjective evaluation of transmissivity potential. The ranking system assigns a number value between zero and five to observed features. A rank of zero indicates a feature that appears sealed – with no water likely passing through it. Note that the geologic classification of features (e.g. bedding plane, lithologic contact, joint, fracture, foliation, etc.) is not specified in the Paillet System since only water-bearing potential is considered. A rank of five corresponds to a grossly porous zone with large openings (e.g. a major fracture, fault or solution cavity). The ranking system, with examples, is provided in Appendix B.

Tables listing the depth, aperture, strike, dip and type of feature are included in this report, for each well, as Appendix C. Feature apertures are listed in tenths of an inch. An aperture of zero for an open fracture simply means that while it appears to be a continuous open feature, the opening is smaller than the line thickness on the log (~0.015 inches). Note that because of the subjectivity involved in Paillet ranking, MAG has listed fractures in Appendix C only as either open or sealed. Specific Paillet rankings can be assigned by the client, if desired, by comparing the standard pictures in Appendix B to the OPTV log.

Note also that it has been the experience of MAG that the aperture or Paillet rank of a feature is not always a strong indicator of its water-producing potential. Thin, discrete features sometimes produce as much or more water (as evidence by flowmeter logging – see below) than wide, open fractures or fracture zones.

Caliper

Caliper measurements represent the average diameter of the borehole or well at a given depth. The caliper tool collects and transmits the data from three spring-loaded arms as the tool is lifted upwards through the borehole. The caliper tool is used to locate solution openings or fractures (where the borehole is typically enlarged due either to the presence of natural openings, or to plucking of broken rock by the drill bit), and to determine the length of casing intervals (as evident from small changes in casing diameter, or the small enlargements at threaded junctions, or narrowing due to the bead at welded junctions).

Caliper logs are collected by calibrating the downhole tool with a measuring template, lowering the tool to the base of the well, remotely opening the arms, and then logging the open borehole and casing diameter in an upward direction. Caliper logs are acquired with a logging speed of no more than 12 feet per minute.

Fluid Temperature

Fluid temperature logs provide the temperature of the air or fluid in a borehole as a function of depth. Temperature logs can indicate where water is entering or leaving a borehole – and thereby disturbing the normal geothermal gradient. Deviations, offsets, or changes in the slope of the temperature log can be used to locate zones of water movement within the borehole. Temperature logs must be run in wells that have been allowed to fully equilibrate to the local geothermal gradient following any prior drilling, construction, pumping or sampling. During a temperature survey, data accuracy is ensured by maintaining a downward logging speed of approximately 10 feet per minute (fpm). This provides an adequate time buffer to allow sensors to respond to minor temperature changes.

Fluid Conductivity

Fluid conductivity logs provide a continuous measurement of the electrical conductivity of the borehole fluid – i.e. zero in air or hydrocarbons, greater than zero in water. In water, electrical conductivity is mostly a function of electrolytic content. Water with very low dissolved solid concentrations will yield low fluid conductivity, while water containing a high level of dissolved solids will be proportionally more conductive. Fluid conductivity logs often deflect where water-producing features are transmitting water into or out of the well (since the well water may have a differing electrolytic chemistry than the formation water). The fluid conductivity log is usually collected simultaneously with the temperature log – since for both, data from a fully equilibrated water column is required.

Natural Gamma

Gamma logs are one of the most widely used geophysical logs in groundwater applications. They are used primarily to identify changes in lithology – specifically the relative amounts of clay in various sedimentary units.

A gamma log provides a record of the total natural gamma radiation detected within a given energy range. In water-bearing rocks and sediments that are not contaminated by artificial radioisotopes, the most significant naturally-occurring, gamma-emitting radioisotopes are potassium-40 and the daughter products of the uranium and thorium decay series. If gamma-emitting artificial radioisotopes have been introduced by humans into the groundwater system, they will also produce part of the radiation measured.

The amplitude of gamma-log deflections is affected by any borehole condition that alters the density of the material through which gamma photons must pass or the length of the travel path. The bedding of a gamma-emitting formation must be thick to obtain a quantitative value since the detector will be affected by the radiation from the formation as the tool approaches and passes the bed. Although increases in borehole diameter or the presence of steel casing will decrease the recorded gamma count, it is possible to collect usable information in both cased and open portions of the borehole using the gamma sonde. The presence of potassium-rich (and therefore gamma-emitting) bentonite clay commonly used in well construction will generally produce high gamma count peaks on a natural gamma log. MAG has natural gamma detectors on many sondes, and comparison of the multiple gamma logs collected for any given well logging program are used to ensure that the depths of differing logs are not erroneously shifted. Therefore, the gamma log presented for any well may have been collected simultaneously with any of the other logs from the same well.

Short and Long Normal Resistivity

In resistivity logging, the sonde is set up with a series of electrodes set some fixed distance away from each other. The most common arrangement of these spacings is 16 inches (short normal) and 64 inches (long normal) apart. To take a measurement, a current with a fixed low amperage (I, typically tens of milliamps) is driven between the tip of the sonde, and the exposed cable armor 30 feet above the sonde. The potential difference or voltage (V) between the short and long normal-spaced electrodes is recorded, and the resistance to current flow (R) in the formation is then given by Ohms law (R=V/I). This resistance (in Ohms), which is a property of the electrical circuit created by the electrodes and formation, is converted to apparent resistivity (in Ohm-meters), which is a physical property of the formation, based on the known electrode geometry. Readings are recorded continuously as the sonde is lowered in the borehole – typically at less than 20 fpm.

In most situations, the 16-inch or short normal log is used to interpret the electrical properties of the formation near the borehole, or in the invaded zone. The 64-inch or long normal log gives a better indication of the resistivity deeper in the formation where there may be no effect from the drilling itself. Care must be taken when interpreting resistivity logs since thin beds that measure close to the thickness of the electrode spacing on the sonde may cause a reverse response. Therefore, normal resistivity logs are most useful in boreholes with thick lithologic units. The presence of thin-bed reversals can also be detected by comparing the normal resistivity logs with the single point resistance (SPR) log described below (which they should generally mimic in the absence of reversals). Normal resistivity logs are typically collected along with SPR and spontaneous potential (SP) logs using a single sonde. The interpretation of resistivity logs is generally straightforward. Low resistivities represent clay minerals or conductive (e.g. electrolytic) pore fluids, while high resistivities represent clean sand or carbonate beds with low porosity or low fluid conductivity within the porosity. Normal resistivity logs record a physical property of the formation, and can therefore provide valuable comparisons between differing wells.

Single Point Resistance

Single point resistance (SPR) logs measure the resistance (in Ohms) between an electrode on the sonde, and one buried at the ground surface near the wellhead. This provides a resistance that is specific to the particular geometry of the circuit (i.e. the placement of the wellhead electrode), and not a resistivity that is a physical property of the formation. However, the log provides relative data within a well that is sensitive to the presence of conductive minerals (e.g. clays) in the formation, and the degree of porosity and conductivity of the fluid in the porosity. The interpretation of resistance logs is also straightforward, and follows the relative patterns described above for normal resistivity logs. However, SPR values are relative, and may be difficult to compare between different wells.

Spontaneous Potential

Spontaneous potential (SP) logging is the oldest and simplest method. It uses a lead (non-polarizing) electrode on a sonde to measure the naturally-occurring potential difference (typically in millivolts) between the sonde in the formation, and a reference electrode buried near the wellhead. Naturally-occurring potential differences are commonly present at the interfaces between materials with differing ionic content – e.g. at contacts between saturated sand and shale, or between salty and fresh water. Note that unlike resistivity and SPR logs that are sensitive to beds, SP logs are sensitive to the contacts between beds (or contacts between waters with differing ionic content). Like SPR, SP values are relative, and therefore difficult to compare between wells. SP logs are typically recorded along with normal resistivity and SPR logs at speeds of less than 20 fpm.

Heat Pulse Flowmeter

Unlike all other logs that are continuous records of some parameter versus depth, heat pulse flowmeter (HPFM) logs are made with the sonde stationary in the borehole at discrete depth intervals or at stations selected to suit a particular study. In the sonde, large capacitors are charged from the surface power supply and can be discharged rapidly on command through a high resistance wire grid (like the heating elements on an electric stove). The discharge creates an infinitesimally thin disc of heated water. By conduction alone, the heat in this disc disperses slowly due to the poor heat conduction of water. In addition, the slight change in density of the heated water will cause it to rise very slowly (i.e. by convection). However, in the presence of vertical flow, the heated disc of water will move up or down with the flow velocity. In the sonde, thermistors are set at fixed equal distances above and below the heating grid, and sense the passage of the heated disc. Prior to firing the heating element, the two thermistor outputs are equalized so it is possible to interpret any subsequent differential output as a relative change in temperatures between thermistors. The temperature differential data is sent to the surface where the flow rate (in fpm) can be calculated based on the known positions of the thermistors. If the borehole diameter is known, the flow in fpm can be converted to gallons per minute (gpm). Note that by convention, negative flow values represent downward flow.

The main limitation of the heat pulse flowmeter is that it can only accurately measure the vertical component of flow in a borehole. Any horizontal flow cannot be quantified due to the location of the thermistors relative to the heat grid. This factor must be taken into consideration when interpreting heat pulse flowmeter data. Unfortunately, there is no reliable tool for measuring horizontal flow in a borehole. In addition, please note that even in the presence of water-bearing features, vertical flow will only occur in a static well if it intersects two or more features with differing hydraulic heads. For example, a well might intersect just a single, highly productive zone, but since there is no other zone with a different head, the only static flow in the well would be horizontal (across the well - if at all). Therefore, lack of vertical flow under static conditions does not necessarily imply an absence of hydrogeologically important features.

The heat pulse flowmeter is typically operated after the borehole has stabilized from the effects of any prior logging runs in the borehole. In addition, after moving the sonde itself, the hole is allowed to equilibrate before taking any measurements. At each station, multiple measurements are usually recorded to ensure repeatability. The borehole is also allowed to equilibrate between successive measurements at a given station to ensure that the measured flow is due to natural flow conditions, and not conduction or convection from previous measurements. The heat pulse flowmeter is typically run under static conditions and may not quantify flow in some water-producing zones where there is only horizontal flow and/or no head difference between adjacent features. However, in some cases, these zones may be identified by recording heat pulse flowmeter data under stressed or pumping conditions which induce artificial head differences.

Logging Results

The wells were logged on December 19 and 20, 2011. The logging results for the wells are presented on the enclosed digital logs and tables, and briefly summarized below.

Note that since analysis of borehole geophysical logs can be quite subjective, and the level of detail is dependent upon the specific goals of the geologist, the analysis by MAG below covers the major features of each log, as well as some possibly minor features to serve as examples or guides for further interpretation by geologists familiar with the site, local geology, and/or project goals. In general, logs may display deviations (i.e. "spikes" where the parameter deviates from, and then returns to, "background" level), offsets (changes in background level), or slope changes. Any of these could be considered significant in certain situations, or when compared to correlating features at the same depth on other logs. If there are any questions about the features discussed (or not discussed) below, please do not hesitate to contact MAG.

MW-6D

Noted Features

- The total depth (TD) of the well was logged at approximately 103 feet below ground surface.
- The depth to water (DTW) was measured at 25.5 feet BGS at the time of the survey.
- The diameter of the casing at the surface was measured to be six inches, and the bottom of the casing (BOC) was located at approximately 64 feet BGS.
- The caliper (borehole diameter) log reveals significant enlargements at 64.5, 67.6, and 83.2 feet BGS. The open borehole from BOC, at 64 feet BGS, to 77.8 feet BGS, indicates that there are two different open borehole diameters in the well. This upper section diameter is approximately 8 ¾ inches (versus six inches in the lower section).
- The fluid temperature log shows no significant deviations, offsets, or changes in slope except at the top of the water column.
- The fluid conductivity log shows offsets located at 41.8 and 56.8 feet BGS and at the top of the water column.
- Numerous planar features were recognizable on the televiewer logs. The depth, strike, dip, aperture, and feature type are listed on the log, as well as on the accompanying table in Appendix C.
- The electrical and natural gamma logs show generally smooth variations that are probably related primarily to the clay content of the formation.

- Based primarily on the locations of caliper anomalies and televiewer features recognized in the field, six stations or depths were selected for heat pulse flowmeter measurements. The recorded flows (based on an averaging of three to seven individual measurements per station) are listed below, with positive being upward flow and negative being downward flow. Upward flow was detected in this borehole at 63, 70, and 80 feet BGS, with the highest reading located at 63 feet BGS at 0.974 FPM.

Depth (feet BGS)	Vertical Flow (FPM)
63	0.974
70	0.889
80	0.606
85	0
96	0
100	0

MW-12

Noted Features

- The total depth (TD) of the well was logged at approximately 156.2 feet below ground surface (BGS).
- The depth to water (DTW) was measured at 30 feet BGS at the time of the survey.
- The diameter of the casing at the surface was measured to be six inches, and the bottom of the casing (BOC) was located at approximately 97.3 feet BGS.
- The caliper (borehole diameter) log reveals enlargements at 110.2, 112, 121.1, 126.7, 129, and 141.7 feet BGS.
- The fluid temperature log shows a change in slope at 43.5 feet BGS and an offset at the top of the water column.
- The fluid conductivity log shows offsets at 97.4, 108.4, and 127.6 feet BGS and at the top of the water column.
- Numerous planar features were recognizable on the televiewer logs. The depth, strike, dip, aperture, and feature type are listed on the log, as well as on the accompanying table in Appendix C.
- The electrical and natural gamma logs show generally smooth variations that are probably related primarily to the clay content of the formation.

- Based primarily on the locations of caliper anomalies and televiewer features recognized in the field, six stations or depths were selected for heat pulse flowmeter measurements. The recorded flows (based on an averaging of three to seven individual measurements per station) are listed below, with positive being upward flow and negative being downward flow. Upward flow was detected in this borehole at 109 and 114 feet BGS, with the highest reading located at 114 feet BGS at 1.008 FPM.

Depth (feet BGS)	Vertical Flow (FPM)
109	0.875
114	1.008
125	0
130	0
140	0
143	0

MW-16D

Noted Features

- The total depth (TD) of the well was logged at approximately 150.7 feet below ground surface (BGS).
- The depth to water (DTW) was measured at 35.2 feet BGS at the time of the survey.
- The diameter of the casing at the surface was measured to be six inches, and the bottom of the casing (BOC) was located at approximately 85.8 feet BGS.
- The caliper (borehole diameter) log reveals enlargements at 89.2, 89.9, 109.9, 110.7, and 125.3 feet BGS.
- The fluid temperature log shows no significant deviations, offsets, or changes in slope except at the top of the water column.
- The fluid conductivity log shows no significant deviations, offsets, or changes in slope except at the top of the water column.
- Numerous planar features were recognizable on the televiewer logs. The depth, strike, dip, aperture, and feature type are listed on the log, as well as on the accompanying table in Appendix C.
- The electrical and natural gamma logs show generally smooth variations that are probably related primarily to the clay content of the formation.

- Based primarily on the locations of caliper anomalies and televiewer features recognized in the field, six stations or depths were selected for heat pulse flowmeter measurements. The recorded flows (based on an averaging of three to seven individual measurements per station) are listed below, with positive being upward flow and negative being downward flow. No measurable upward or downward flow was detected in the borehole.

Depth (feet BGS)	Vertical Flow (FPM)
88	0
93	0
108	0
113	0
124	0
127	0

Limitations

In making verbal or written interpretation of logs, MAG personnel give the client the benefit of their best professional judgment. However, since all interpretations are based on inference from electrical, magnetic, or other indirect measurements, MAG does not, and cannot, guarantee the accuracy or the correctness of any such interpretations. MAG shall not be liable for any loss, damages, or expenses resulting from reliance on such interpretations. MAG does not warrant the accuracy of log data transmitted by any electronic process and will not be responsible for intentional interpretation of log data by others. MAG makes no warranties – neither explicit nor implied. Under no circumstances shall MAG, its parent company Enviroscan, Inc., or their personnel be liable for consequential damages.

We appreciate this opportunity to have worked with you again. If you have any questions, please do not hesitate to contact me.

Sincerely,
Mid-Atlantic Geosciences

Duro Rajkovic
Project Geophysicist

Technical Review By:
Mid-Atlantic Geosciences

Felicia Kegel Bechtel, M.Sc., P.G.
President

enc.: MW-6D: Televiewer, Geophysical, and Flowmeter Logs
MW-12: Televiewer, Geophysical, and Flowmeter Logs
MW-16D: Televiewer, Geophysical, and Flowmeter Logs
Appendix A: Planar Feature Orientation Parameters
Appendix B: Paillet Ranking System
Appendix C: Planar Feature Characterizations Table

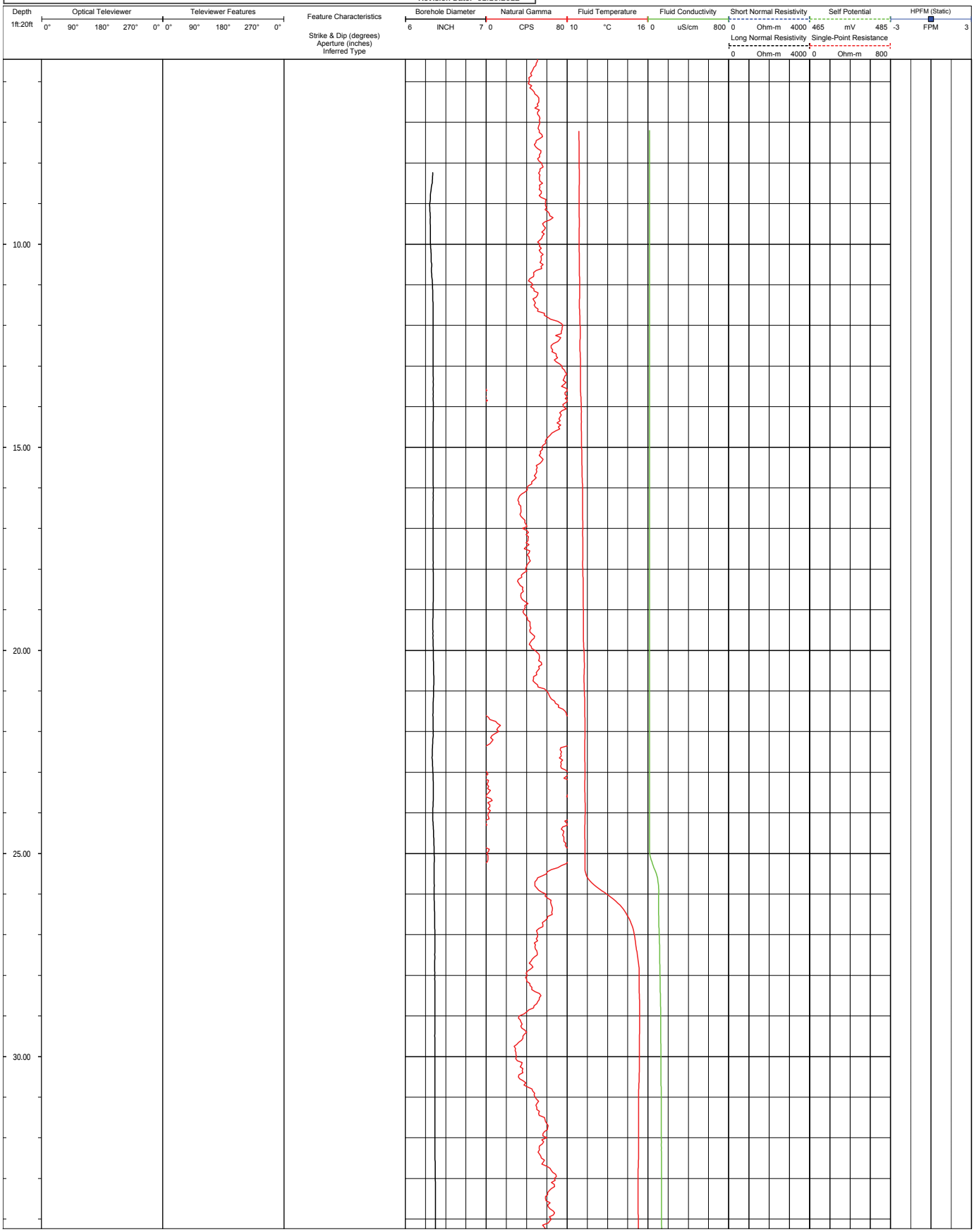
Mid-Atlantic Geosciences

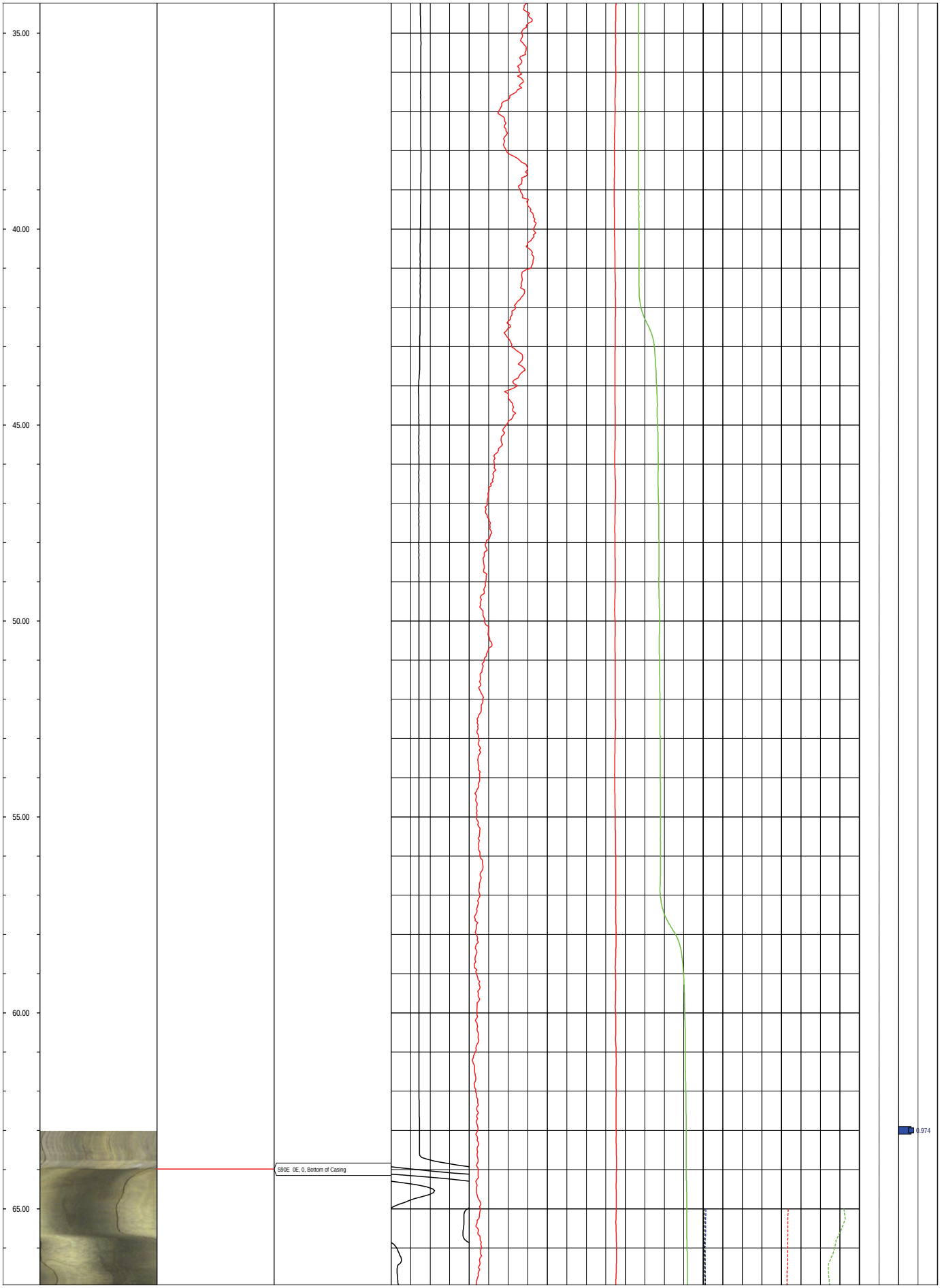
Title: *Televiewer, Geophysical, and Flowmeter Logs*

WELL ID *MW-6D*

Logging Date: *12.20.2011*
Logging Datum: *Ground Surface*
BOC: *64'* **DTW:** *25.5'* **TD:** *103'*

Site Name: *9901 Georgetown Pike*
Location: *Great Falls, VA*
Client: *Kleinfelder*
Project No.: *111146*
Revision Date: *01.10.2012*

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65.00
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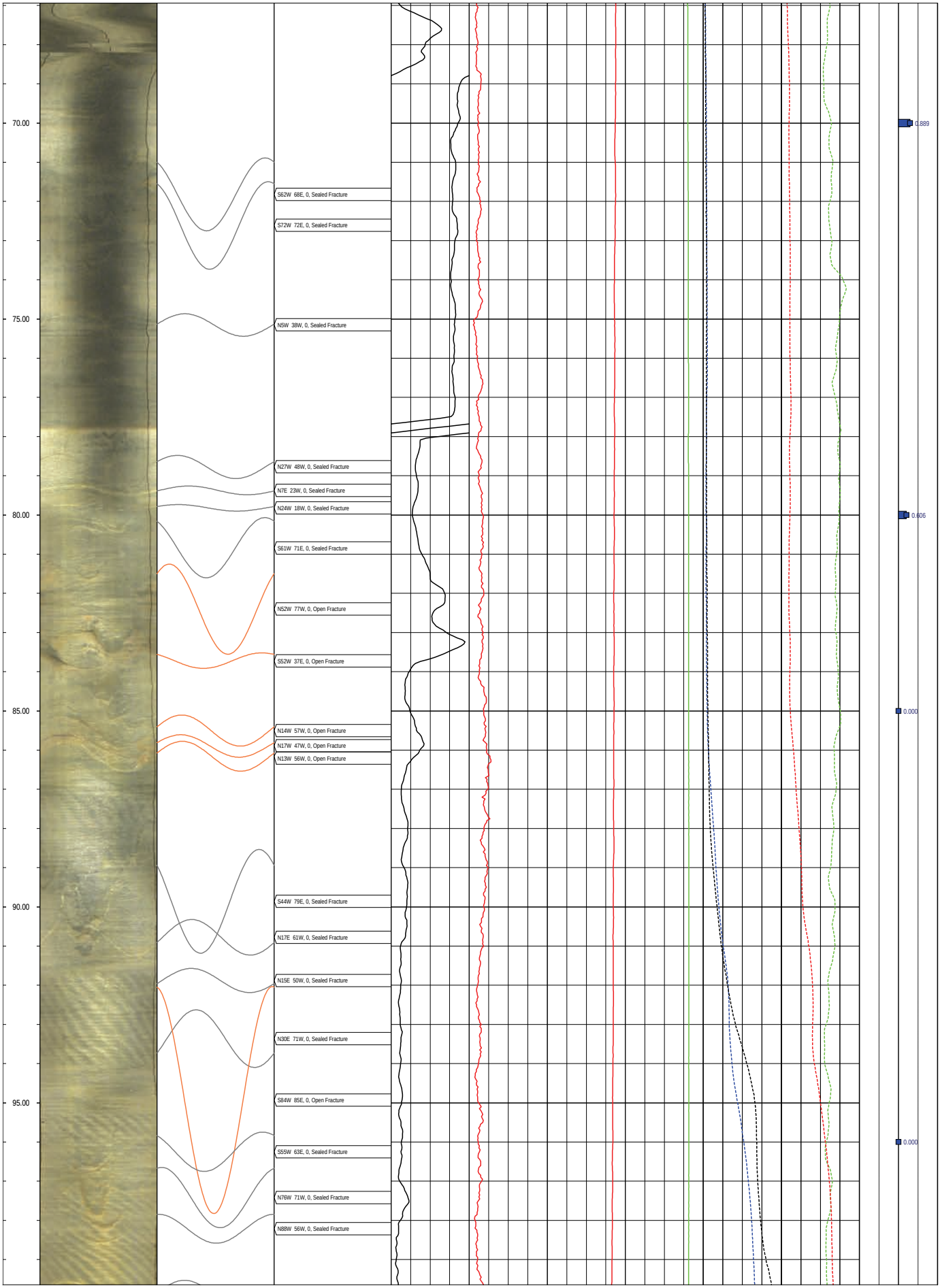
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N5W 38W, 0, Sealed Fracture
N27W 48W, 0, Sealed Fracture
N7E 23W, 0, Sealed Fracture
N24W 18W, 0, Sealed Fracture
S61W 71E, 0, Sealed Fracture
N52W 77W, 0, Open Fracture
S52W 37E, 0, Open Fracture
N14W 57W, 0, Open Fracture
N17W 47W, 0, Open Fracture
N13W 56W, 0, Open Fracture
S44W 79E, 0, Sealed Fracture
N17E 61W, 0, Sealed Fracture
N15E 50W, 0, Sealed Fracture
N30E 71W, 0, Sealed Fracture
S84W 85E, 0, Open Fracture
S55W 63E, 0, Sealed Fracture
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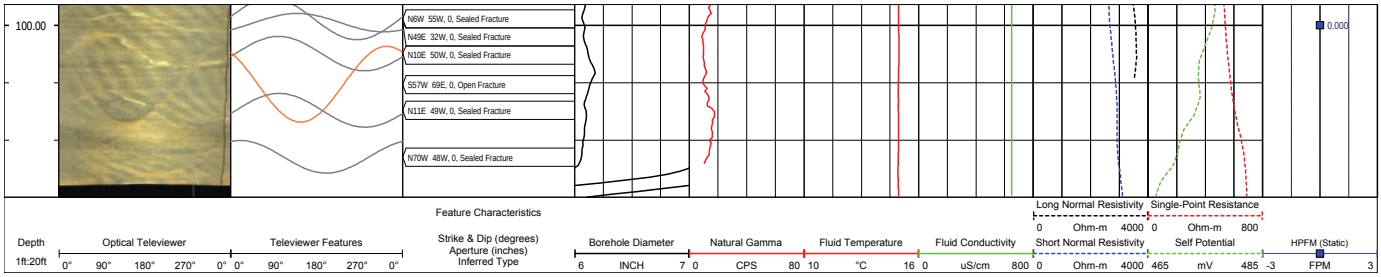
0.606
0.000
0.000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S57W 69E, 0, Open Fracture
N11E 49W, 0, Sealed Fracture
N70W 48W, 0, Sealed Fracture
0.000
Feature Characteristics
Long Normal Resistivity
Single-Point Resistance
0 Ohm-m 4000
0 Ohm-m 800
Depth
1ft:20ft
Optical Televiewer
0° 90° 180° 270° 0°
Televiewer Features
0° 90° 180° 270° 0°
Strike & Dip (degrees)
Aperture (inches)
Inferred Type
Borehole Diameter
6 INCH 7
Natural Gamma
0 CPS 80
Fluid Temperature
10 °C 16
Fluid Conductivity
0 uS/cm 800
Short Normal Resistivity
0 Ohm-m 4000
Self Potential
465 mV 485
HPFM (Static)
-3 FPM 3

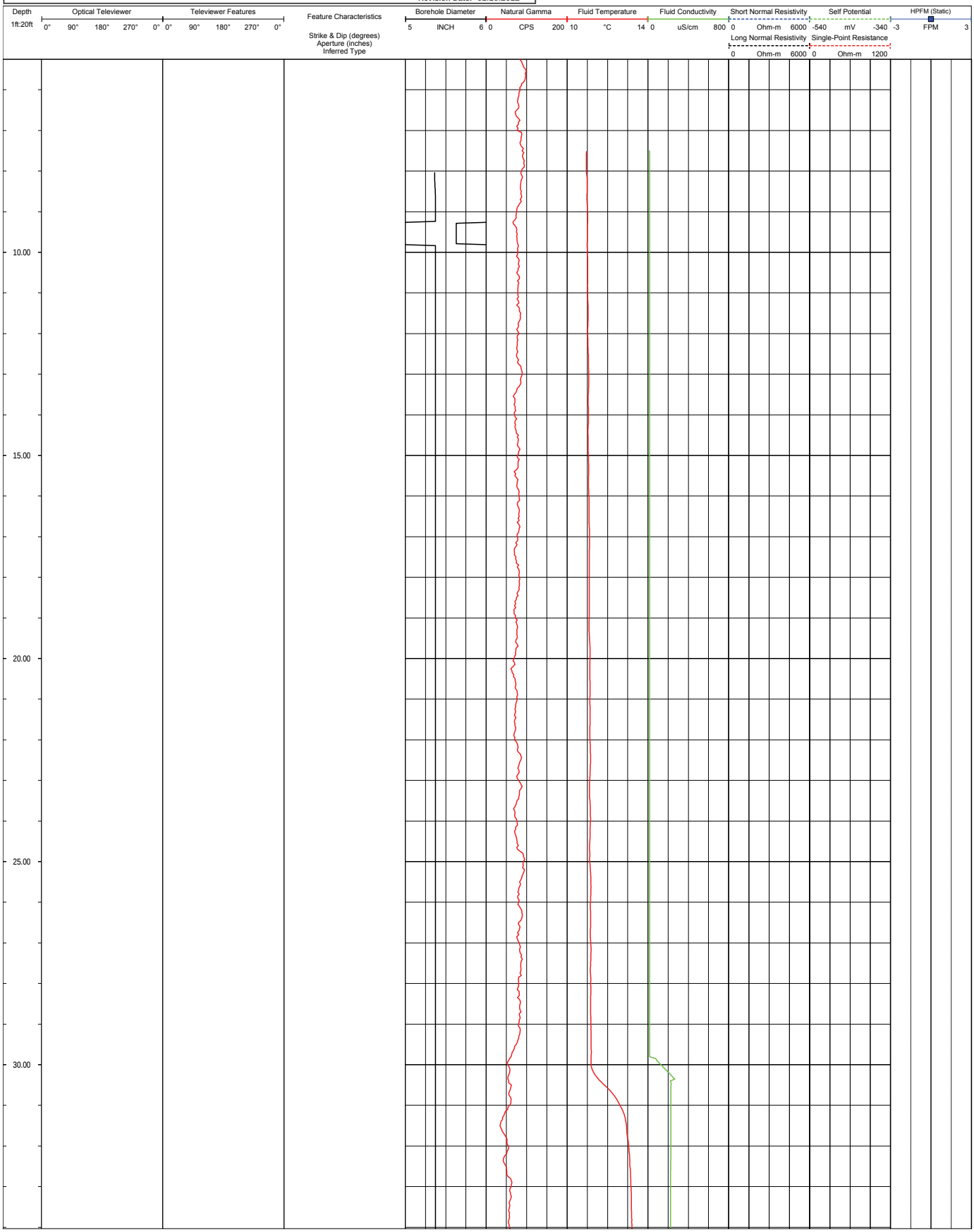
Mid-Atlantic Geosciences

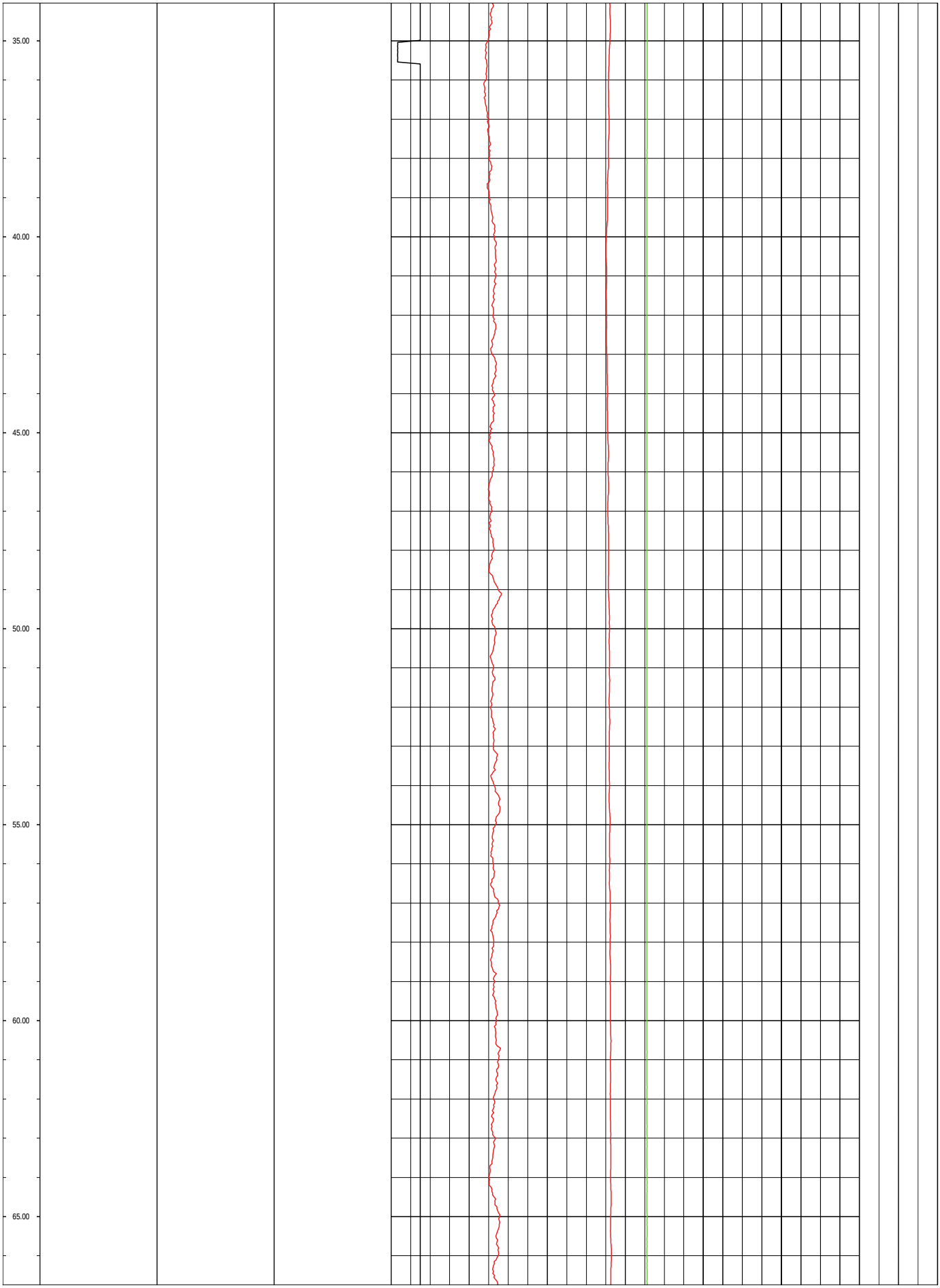
Title: *Televiewer, Geophysical, and Flowmeter Logs*

WELL ID *MW-12*

Logging Date: *12.19.2011*
Logging Datum: *Ground Surface*
BOC: *97.3'* **DTW:** *30'* **TD:** *156.2'*

Site Name: *9901 Georgetown Pike*
Location: *Great Falls, VA*
Client: *Kleinfelder*
Project No.: *111146*
Revision Date: *01.10.2012*

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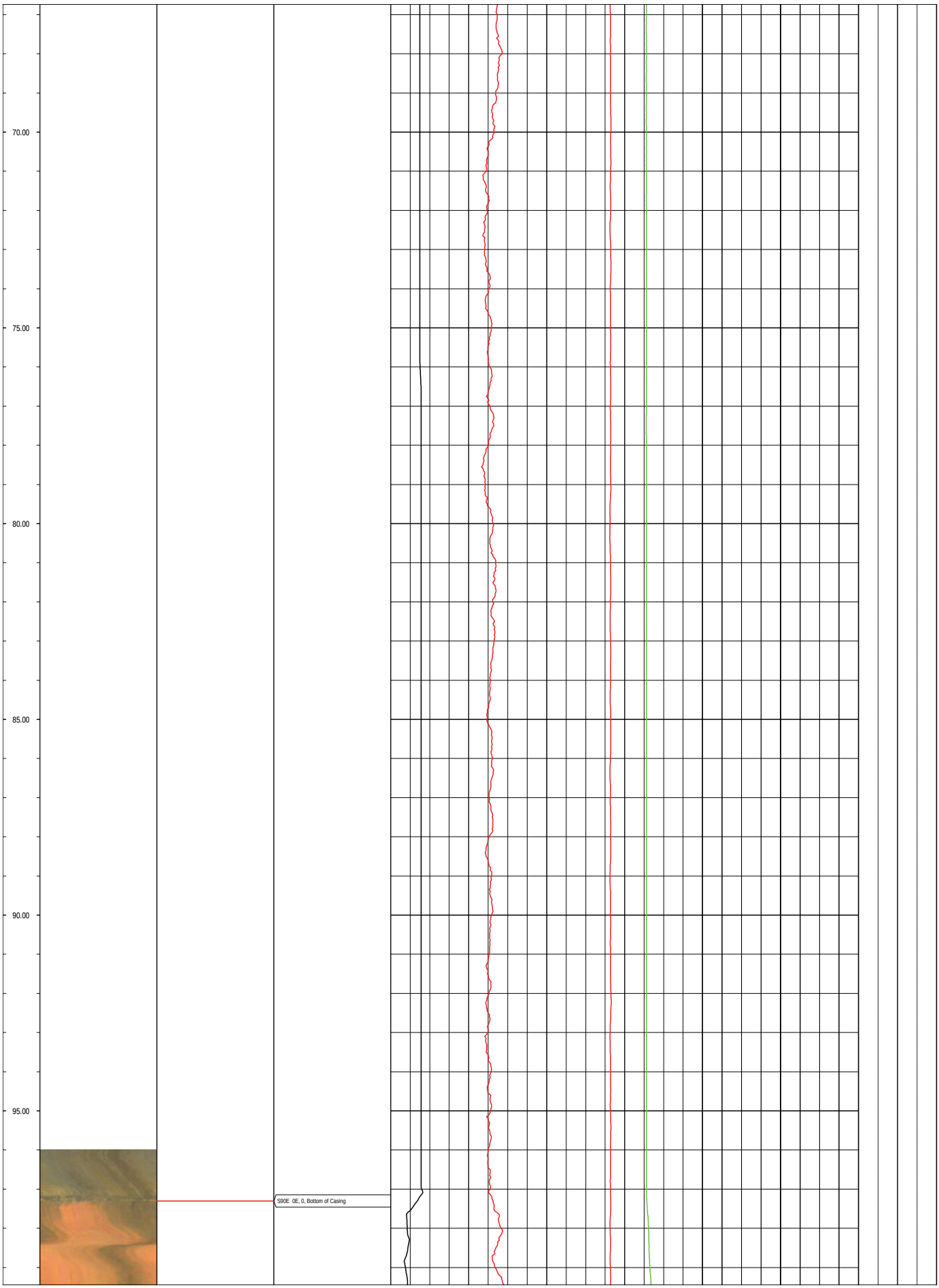
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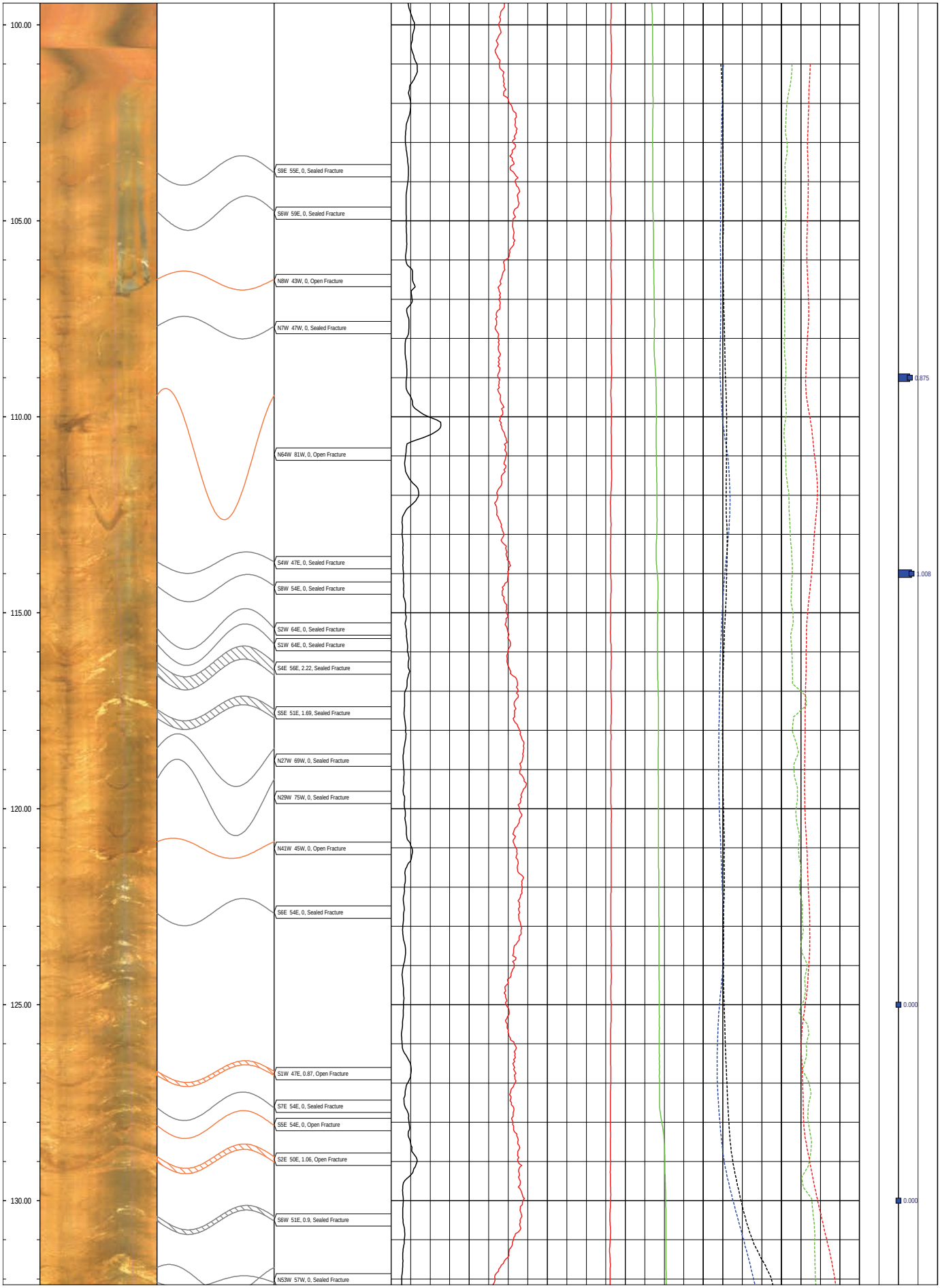
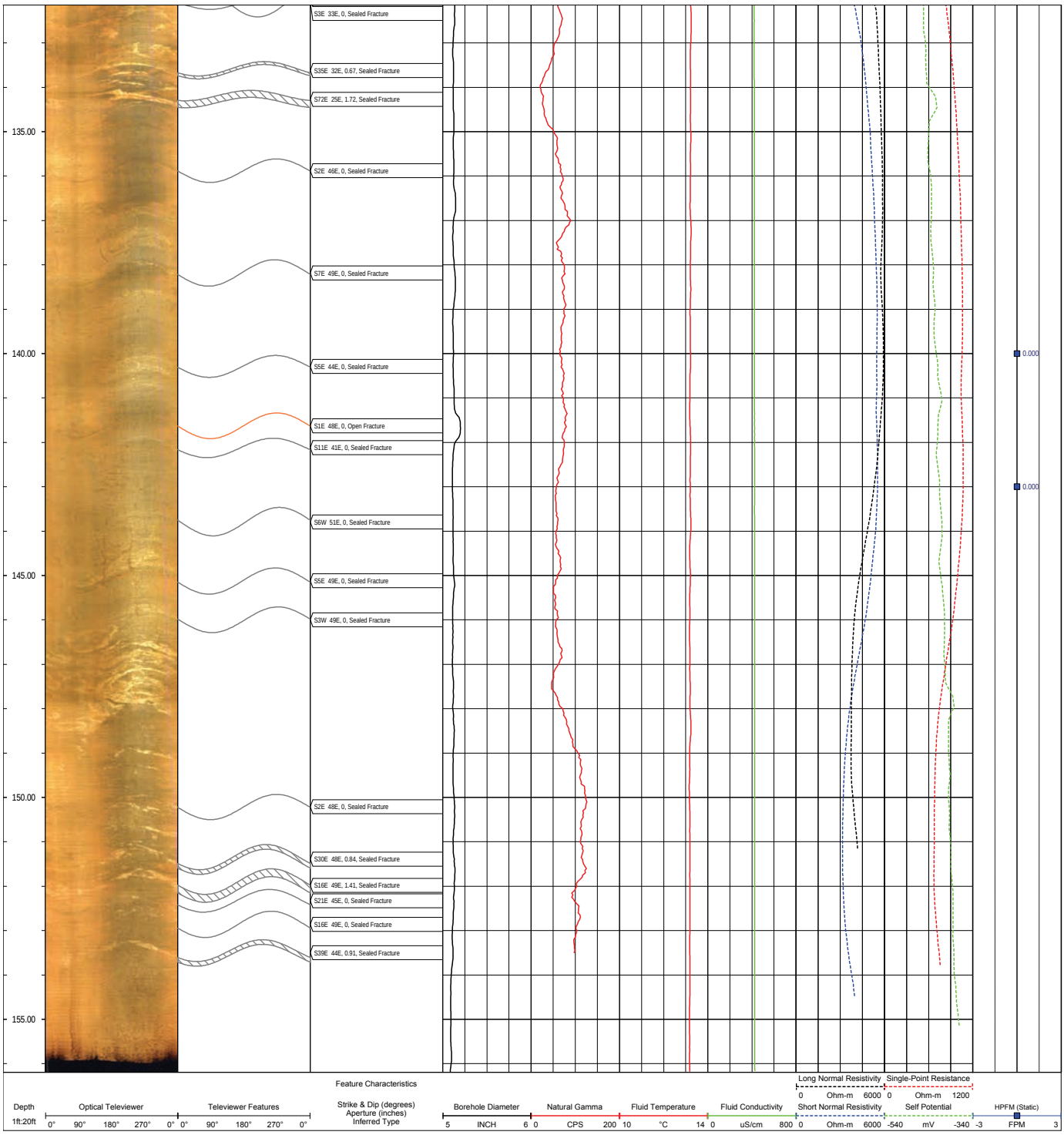
95.00
S90E 0E, 0, Bottom of Casing


100.00
105.00
110.00
115.00
120.00
125.00
130.00
S9E 55E, 0, Sealed Fracture
S6W 59E, 0, Sealed Fracture
N8W 43W, 0, Open Fracture
N7W 47W, 0, Sealed Fracture
N64W 81W, 0, Open Fracture
S4W 47E, 0, Sealed Fracture
S8W 54E, 0, Sealed Fracture
S2W 64E, 0, Sealed Fracture
S1W 64E, 0, Sealed Fracture
S4E 56E, 2.22, Sealed Fracture
S5E 51E, 1.69, Sealed Fracture
N27W 69W, 0, Sealed Fracture
N29W 75W, 0, Sealed Fracture
N41W 45W, 0, Open Fracture
S6E 54E, 0, Sealed Fracture
S1W 47E, 0.87, Open Fracture
S7E 54E, 0, Sealed Fracture
S5E 54E, 0, Open Fracture
S2E 50E, 1.06, Open Fracture
S6W 51E, 0.9, Sealed Fracture
N53W 57W, 0, Sealed Fracture
0.875
1.008
0.000
0.000


S3E 33E, 0, Sealed Fracture
S35E 32E, 0.67, Sealed Fracture
S72E 25E, 1.72, Sealed Fracture
S2E 46E, 0, Sealed Fracture
S7E 49E, 0, Sealed Fracture
S5E 44E, 0, Sealed Fracture
S1E 48E, 0, Open Fracture
S11E 41E, 0, Sealed Fracture
S6W 51E, 0, Sealed Fracture
S5E 49E, 0, Sealed Fracture
S3W 49E, 0, Sealed Fracture
S2E 48E, 0, Sealed Fracture
S30E 48E, 0.84, Sealed Fracture
S16E 49E, 1.41, Sealed Fracture
S21E 45E, 0, Sealed Fracture
S16E 49E, 0, Sealed Fracture
S39E 44E, 0.91, Sealed Fracture
135.00
140.00
145.00
150.00
155.00
0.000
0.000
Feature Characteristics
Depth
1ft:20ft
Optical Televiewer
0° 90° 180° 270° 0°
Televiewer Features
0° 90° 180° 270° 0°
Strike & Dip (degrees)
Aperture (inches)
Inferred Type
Borehole Diameter
5 INCH 6
Natural Gamma
0 CPS 200
Fluid Temperature
10 °C 14
Fluid Conductivity
0 uS/cm 800
Long Normal Resistivity
0 Ohm-m 6000
Short Normal Resistivity
0 Ohm-m 6000
Single-Point Resistance
0 Ohm-m 1200
Self Potential
-540 mV -340
HPFM (Static)
-3 FPM 3

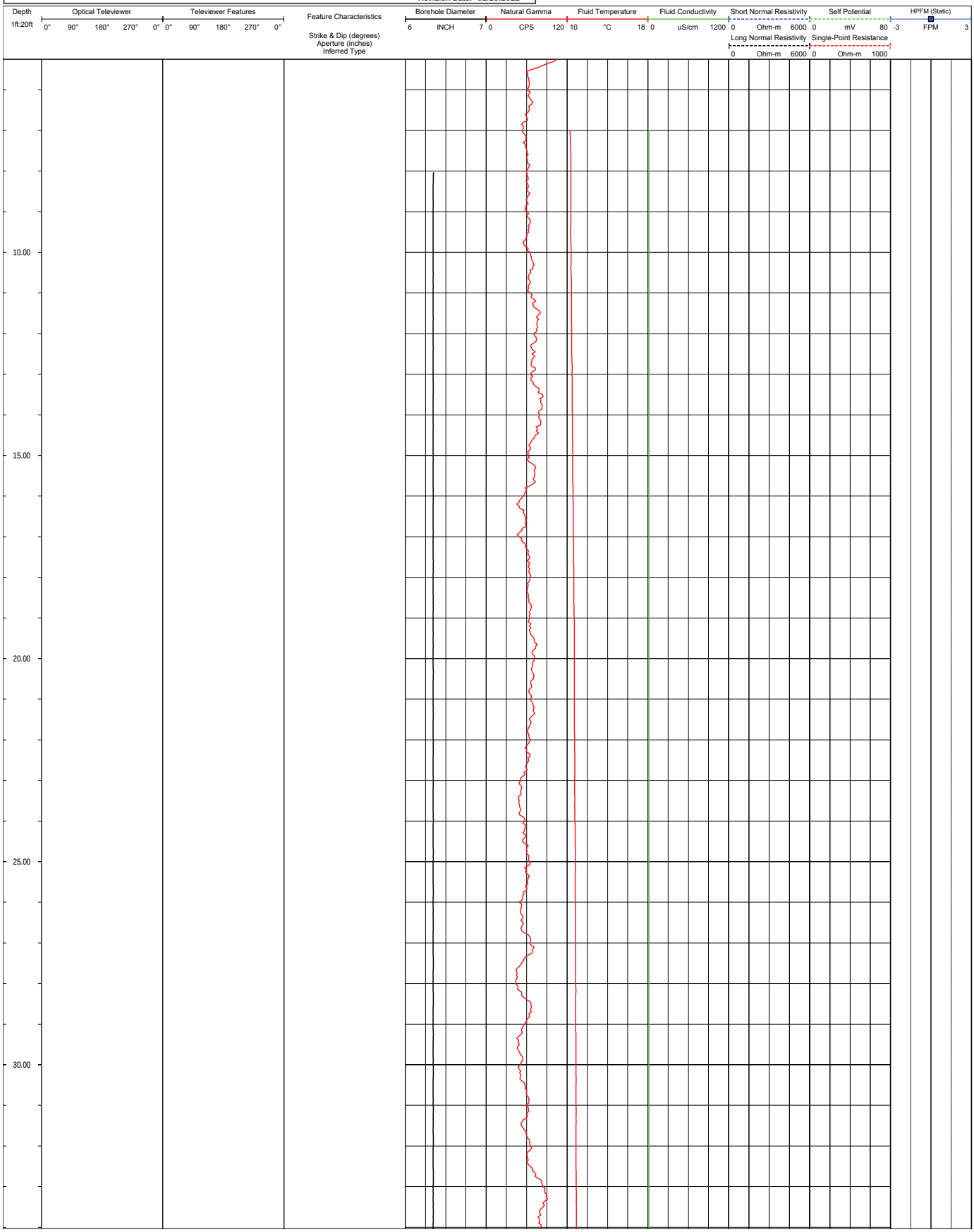
Mid-Atlantic Geosciences

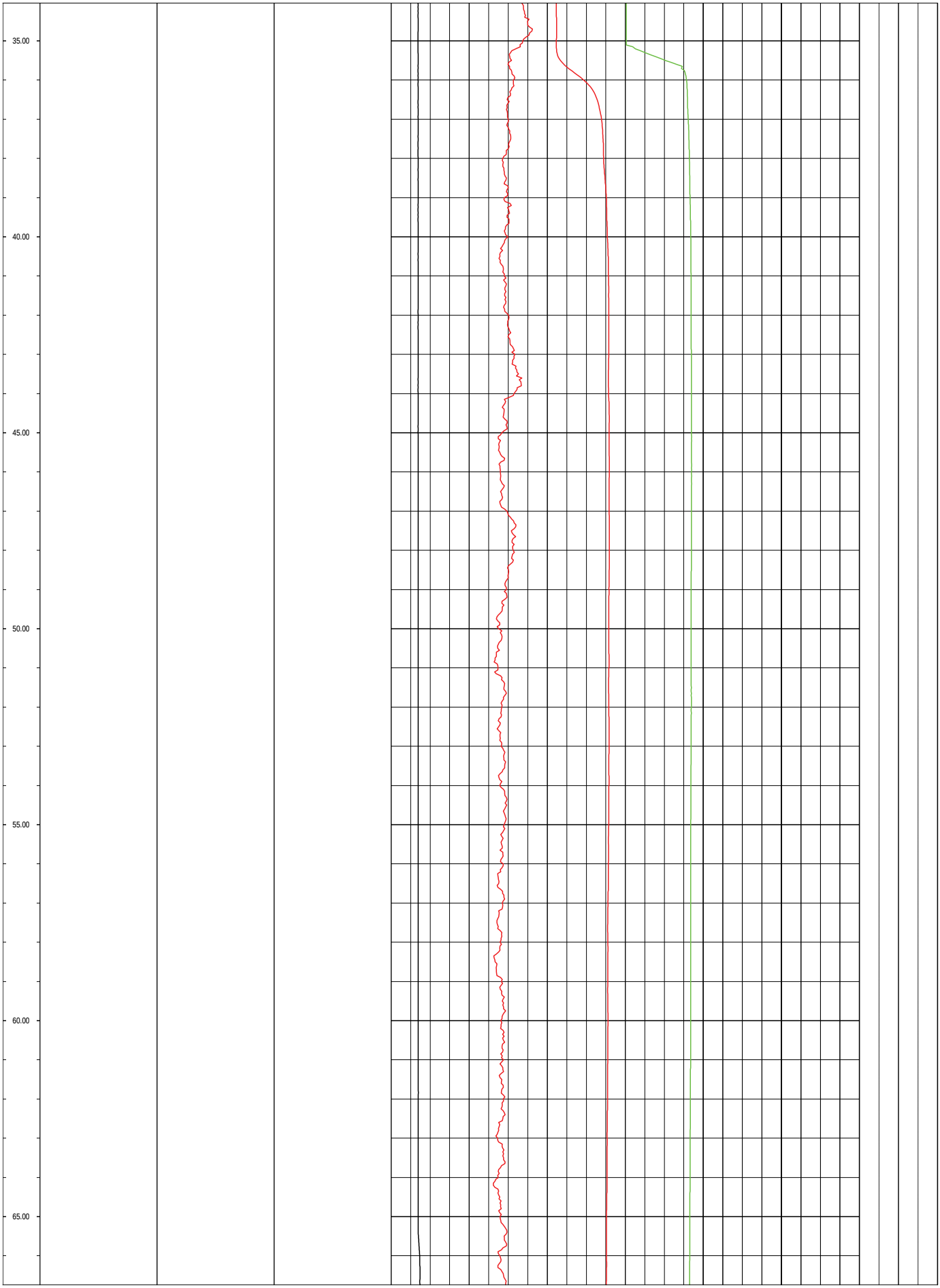
Title: *Televiewer, Geophysical, and Flowmeter Logs*

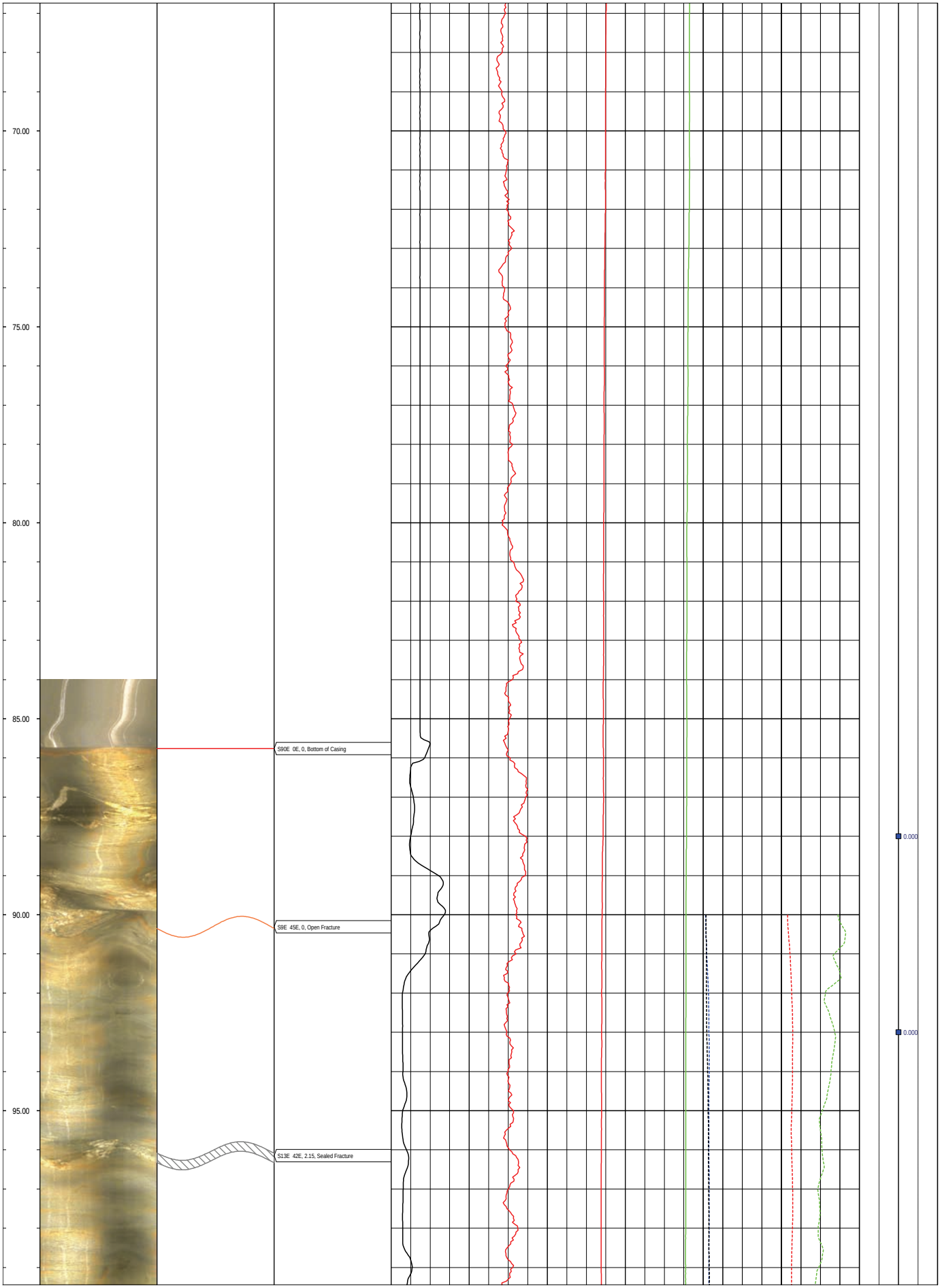
WELL ID *MW-16D*

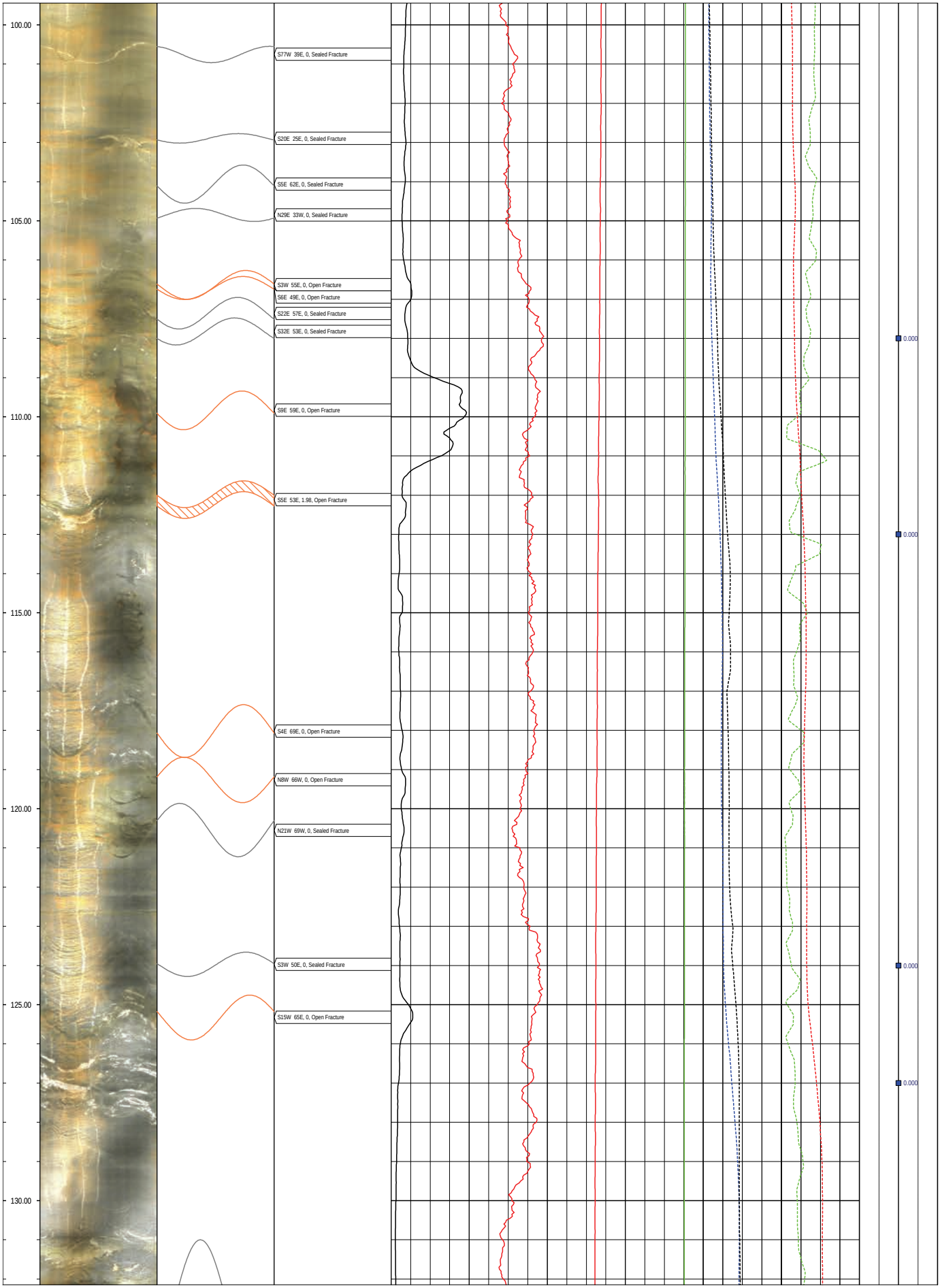
Logging Date: *12.19.2011*
Logging Datum: *Ground Surface*
BOC: *85.8'* **DTW:** *35.2'* **TD:** *150.7'*

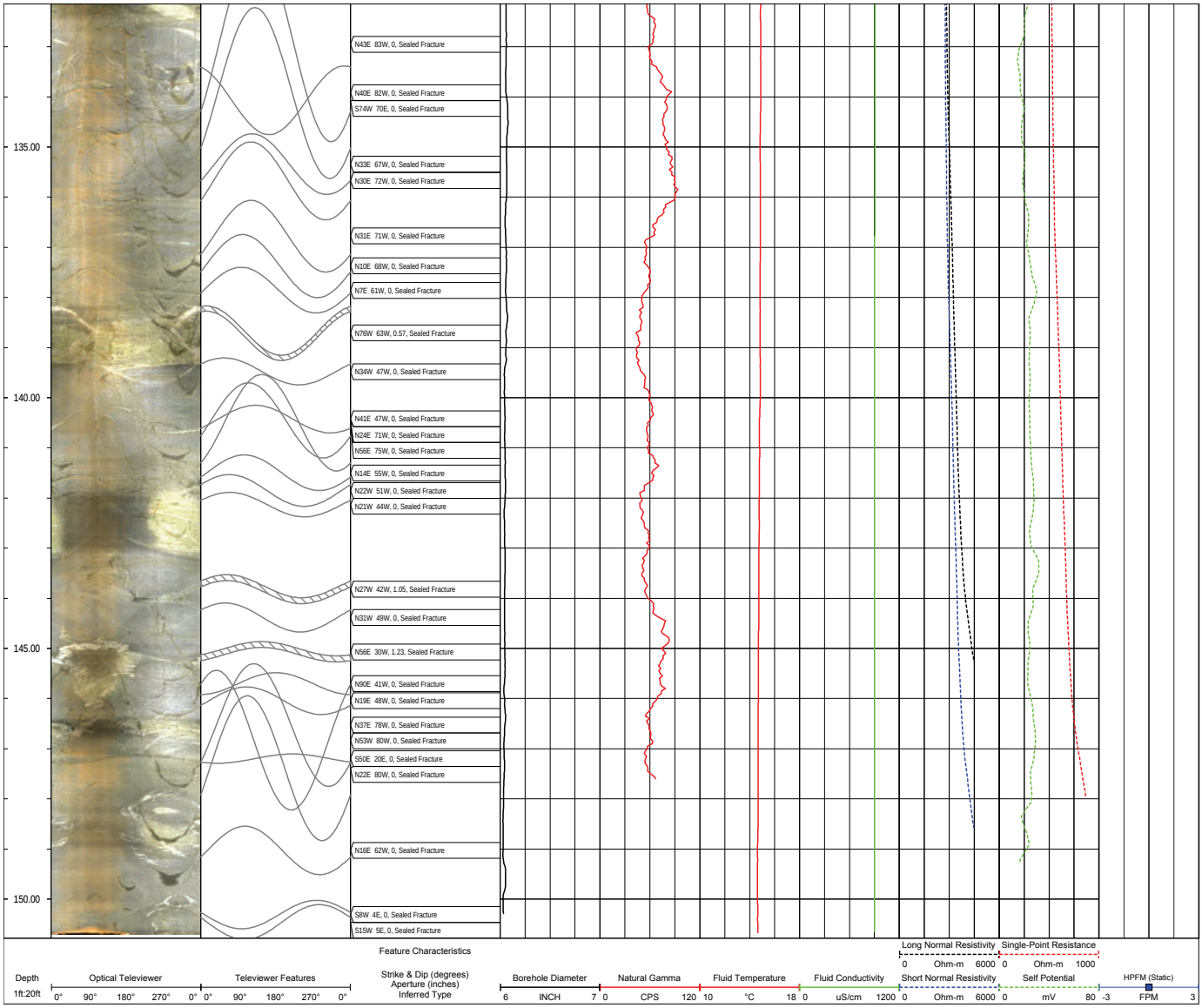
Site Name: *9901 Georgetown Pike*
Location: *Great Falls, VA*
Client: *Kleinfelder*
Project No.: *111146*
Revision Date: *01.10.2012*




35.00
40.00
45.00
50.00
55.00
60.00
65.00


70.00
75.00
80.00
85.00
90.00
95.00
S90E 0E, 0, Bottom of Casing
S9E 45E, 0, Open Fracture
S13E 42E, 2.15, Sealed Fracture
0.000
0.000

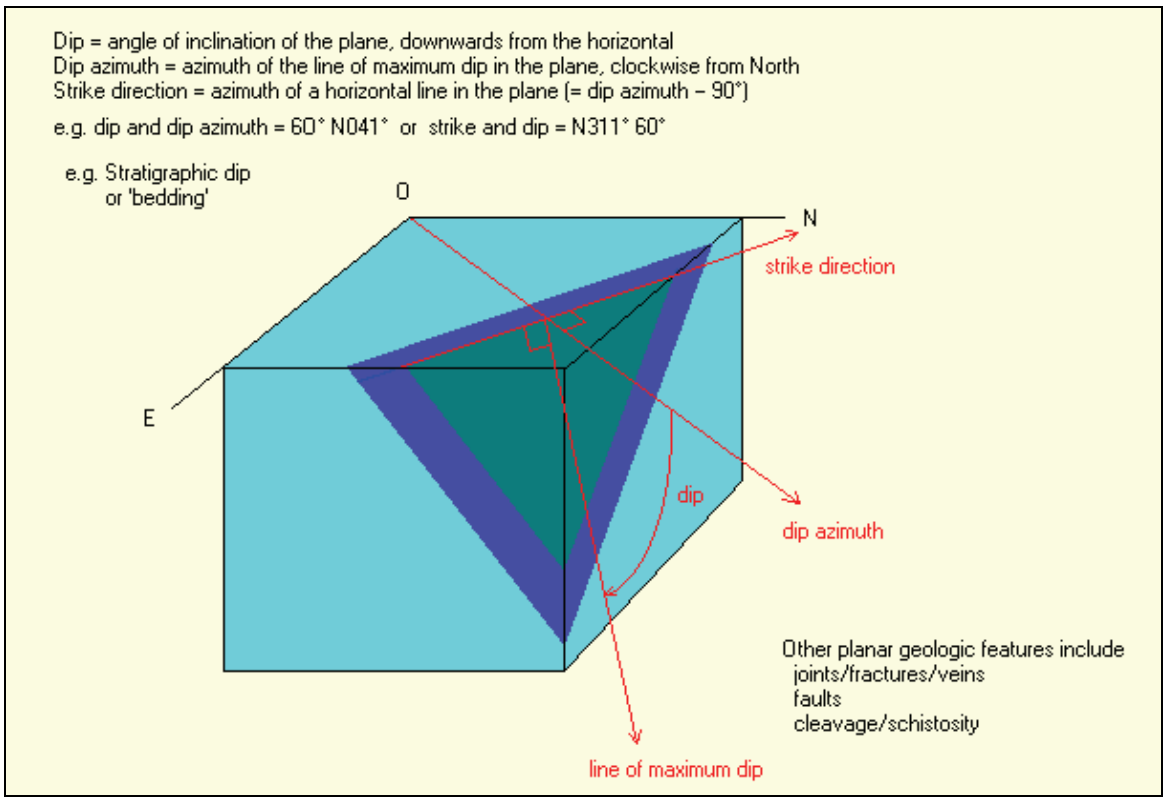

100.00
105.00
110.00
115.00
120.00
125.00
130.00
S77W 39E, 0, Sealed Fracture
S20E 25E, 0, Sealed Fracture
S5E 62E, 0, Sealed Fracture
N29E 33W, 0, Sealed Fracture
S3W 55E, 0, Open Fracture
S6E 49E, 0, Open Fracture
S22E 57E, 0, Sealed Fracture
S32E 53E, 0, Sealed Fracture
S9E 59E, 0, Open Fracture
S5E 53E, 1.98, Open Fracture
S4E 69E, 0, Open Fracture
N8W 66W, 0, Open Fracture
N21W 69W, 0, Sealed Fracture
S3W 50E, 0, Sealed Fracture
S15W 65E, 0, Open Fracture


135.00
140.00
145.00
150.00
N43E 83W, 0, Sealed Fracture
N40E 82W, 0, Sealed Fracture
S74W 70E, 0, Sealed Fracture
N33E 67W, 0, Sealed Fracture
N30E 72W, 0, Sealed Fracture
N31E 71W, 0, Sealed Fracture
N10E 68W, 0, Sealed Fracture
N7E 61W, 0, Sealed Fracture
N76W 63W, 0.57, Sealed Fracture
N34W 47W, 0, Sealed Fracture
N41E 47W, 0, Sealed Fracture
N24E 71W, 0, Sealed Fracture
N56E 75W, 0, Sealed Fracture
N14E 55W, 0, Sealed Fracture
N22W 51W, 0, Sealed Fracture
N21W 44W, 0, Sealed Fracture
N27W 42W, 1.05, Sealed Fracture
N31W 49W, 0, Sealed Fracture
N56E 30W, 1.23, Sealed Fracture
N90E 41W, 0, Sealed Fracture
N19E 48W, 0, Sealed Fracture
N37E 78W, 0, Sealed Fracture
N53W 80W, 0, Sealed Fracture
S50E 20E, 0, Sealed Fracture
N22E 80W, 0, Sealed Fracture
N16E 62W, 0, Sealed Fracture
S8W 4E, 0, Sealed Fracture
S15W 5E, 0, Sealed Fracture
Feature Characteristics
Strike & Dip (degrees)
Aperture (inches)
Inferred Type
Depth
1ft:20ft
Optical Televiewer
0° 90° 180° 270° 0°
Televiewer Features
0° 90° 180° 270° 0°
Borehole Diameter
6 INCH 7
Natural Gamma
0 CPS 120
Fluid Temperature
10 °C 18
Fluid Conductivity
0 uS/cm 1200
Long Normal Resistivity
0 Ohm-m 6000
Short Normal Resistivity
0 Ohm-m 6000
Single-Point Resistance
0 Ohm-m 1000
Self Potential
0 mV 80
HPFM (Static)
-3 FPM 3

Appendix A

Planar Feature Orientation Parameters

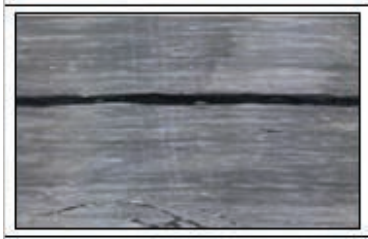
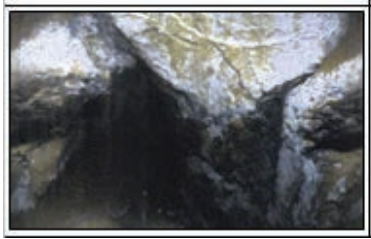
Planar Feature Orientation Parameters



Appendix B

Paillet Ranking System

Paillet Ranking System

Example OPTV Feature	Paillet Rank	Description
	0	Sealed feature – no flow
	1	Partial open fracture
	2	Continuous open fracture
	3	Wide open fracture or fractures
	4	Very wide fracture or multiple interconnected fractures
	5	Major fracture zone or breakout

Appendix C

Planar Feature Characterizations Tables

Mid-Atlantic Geosciences
Planar Feature Characterizations

Well ID:	**MW-6D**	**Client:**	**Kleinfelder**
Site Name:	**9901 Georgetown Pik**	**Project No.:**	**111146**
Location:	**Great Falls, VA**	**Revision Date:**	**01.10.2012**

Depth	Aperture (in.)	Dip Azimuth (deg.)	Strike (deg.)	Dip (deg.)	Feature Type
64.0	0.0	0	S90E	0E	Bottom of Casing
71.8	0.0	152	S62W	68E	Sealed Fracture
72.6	0.0	162	S72W	72E	Sealed Fracture
75.2	0.0	265	N5W	38W	Sealed Fracture
78.8	0.0	243	N27W	48W	Sealed Fracture
79.4	0.0	277	N7E	23W	Sealed Fracture
79.8	0.0	246	N24W	18W	Sealed Fracture
80.8	0.0	151	S61W	71E	Sealed Fracture
82.4	0.0	218	N52W	77W	Open Fracture
83.7	0.0	142	S52W	37E	Open Fracture
85.5	0.0	256	N14W	57W	Open Fracture
85.9	0.0	253	N17W	47W	Open Fracture
86.2	0.0	257	N13W	56W	Open Fracture
89.9	0.0	134	S44W	79E	Sealed Fracture
90.8	0.0	287	N17E	61W	Sealed Fracture
91.9	0.0	285	N15E	50W	Sealed Fracture
93.4	0.0	300	N30E	71W	Sealed Fracture
94.9	0.0	174	S84W	85E	Open Fracture
96.3	0.0	145	S55W	63E	Sealed Fracture
97.4	0.0	194	N76W	71W	Sealed Fracture
98.2	0.0	182	N88W	56W	Sealed Fracture
99.9	0.0	264	N6W	55W	Sealed Fracture
100.0	0.0	319	N49E	32W	Sealed Fracture
100.5	0.0	280	N10E	50W	Sealed Fracture
101.0	0.0	147	S57W	69E	Open Fracture
101.5	0.0	281	N11E	49W	Sealed Fracture
102.3	0.0	200	N70W	48W	Sealed Fracture

Mid-Atlantic Geosciences
Planar Feature Characterizations

Well ID:	**MW-12**	**Client:**	**Kleinfelder**
Site Name:	**9901 Georgetown Pik**	**Project No.:**	**111146**
Location:	**Great Falls, VA**	**Revision Date:**	**01.10.2012**

Depth	Aperture (in.)	Dip Azimuth (deg.)	Strike (deg.)	Dip (deg.)	Feature Type
97.3	0.0	0	S90E	0E	Bottom of Casing
103.7	0.0	81	S9E	55E	Sealed Fracture
104.8	0.0	96	S6W	59E	Sealed Fracture
106.5	0.0	262	N8W	43W	Open Fracture
107.7	0.0	263	N7W	47W	Sealed Fracture
111.0	0.0	206	N64W	81W	Open Fracture
113.7	0.0	94	S4W	47E	Sealed Fracture
114.4	0.0	98	S8W	54E	Sealed Fracture
115.4	0.0	92	S2W	64E	Sealed Fracture
115.8	0.0	91	S1W	64E	Sealed Fracture
116.4	2.2	86	S4E	56E	Sealed Fracture
117.6	1.7	85	S5E	51E	Sealed Fracture
118.8	0.0	243	N27W	69W	Sealed Fracture
119.7	0.0	241	N29W	75W	Sealed Fracture
121.0	0.0	229	N41W	45W	Open Fracture
122.6	0.0	84	S6E	54E	Sealed Fracture
126.8	0.9	91	S1W	47E	Open Fracture
127.6	0.0	83	S7E	54E	Sealed Fracture
128.1	0.0	85	S5E	54E	Open Fracture
128.9	1.1	88	S2E	50E	Open Fracture
130.5	0.9	96	S6W	51E	Sealed Fracture
132.0	0.0	217	N53W	57W	Sealed Fracture
132.1	0.0	87	S3E	33E	Sealed Fracture
133.6	0.7	55	S35E	32E	Sealed Fracture
134.3	1.7	18	S72E	25E	Sealed Fracture
135.9	0.0	88	S2E	46E	Sealed Fracture
138.2	0.0	83	S7E	49E	Sealed Fracture
140.3	0.0	85	S5E	44E	Sealed Fracture

141.6	0.0	89	S1E	48E	Open Fracture
142.1	0.0	79	S11E	41E	Sealed Fracture
143.8	0.0	96	S6W	51E	Sealed Fracture
145.1	0.0	85	S5E	49E	Sealed Fracture
146.0	0.0	93	S3W	49E	Sealed Fracture
150.2	0.0	88	S2E	48E	Sealed Fracture
151.4	0.8	60	S30E	48E	Sealed Fracture
152.0	1.4	74	S16E	49E	Sealed Fracture
152.3	0.0	69	S21E	45E	Sealed Fracture
152.9	0.0	74	S16E	49E	Sealed Fracture
153.5	0.9	51	S39E	44E	Sealed Fracture

Mid-Atlantic Geosciences
Planar Feature Characterizations

Well ID:	**MW-16D**	**Client:**	**Kleinfelder**
Site Name:	**9901 Georgetown Pike**	**Project No.:**	**111146**
Location:	**Great Falls, VA**	**Revision Date:**	**01.10.2012**

Depth	Aperture (in.)	Dip Azimuth (deg.)	Strike (deg.)	Dip (deg.)	Feature Type
85.8	0.0	0	S90E	0E	Bottom of Casing
90.3	0.0	81	S9E	45E	Open Fracture
96.2	2.2	77	S13E	42E	Sealed Fracture
100.8	0.0	167	S77W	39E	Sealed Fracture
102.9	0.0	70	S20E	25E	Sealed Fracture
104.1	0.0	85	S5E	62E	Sealed Fracture
104.9	0.0	299	N29E	33W	Sealed Fracture
106.6	0.0	93	S3W	55E	Open Fracture
106.7	0.0	84	S6E	49E	Open Fracture
107.4	0.0	68	S22E	57E	Sealed Fracture
107.8	0.0	58	S32E	53E	Sealed Fracture
109.8	0.0	81	S9E	59E	Open Fracture
112.1	2.0	85	S5E	53E	Open Fracture
118.0	0.0	86	S4E	69E	Open Fracture
119.3	0.0	262	N8W	66W	Open Fracture
120.6	0.0	249	N21W	69W	Sealed Fracture
124.0	0.0	93	S3W	50E	Sealed Fracture
125.3	0.0	105	S15W	65E	Open Fracture
133.0	0.0	313	N43E	83W	Sealed Fracture
133.9	0.0	310	N40E	82W	Sealed Fracture
134.1	0.0	164	S74W	70E	Sealed Fracture
135.3	0.0	303	N33E	67W	Sealed Fracture
135.7	0.0	300	N30E	72W	Sealed Fracture
136.8	0.0	301	N31E	71W	Sealed Fracture
137.4	0.0	280	N10E	68W	Sealed Fracture
137.9	0.0	277	N7E	61W	Sealed Fracture
138.7	0.6	194	N76W	63W	Sealed Fracture
139.5	0.0	236	N34W	47W	Sealed Fracture

140.4	0.0	311	N41E	47W	Sealed Fracture
140.5	0.0	294	N24E	71W	Sealed Fracture
140.5	0.0	326	N56E	75W	Sealed Fracture
141.5	0.0	284	N14E	55W	Sealed Fracture
141.9	0.0	248	N22W	51W	Sealed Fracture
142.1	0.0	249	N21W	44W	Sealed Fracture
143.8	1.1	243	N27W	42W	Sealed Fracture
144.4	0.0	239	N31W	49W	Sealed Fracture
145.1	1.2	326	N56E	30W	Sealed Fracture
145.7	0.0	360	N90E	41W	Sealed Fracture
146.0	0.0	289	N19E	48W	Sealed Fracture
146.5	0.0	307	N37E	78W	Sealed Fracture
146.8	0.0	217	N53W	80W	Sealed Fracture
147.2	0.0	40	S50E	20E	Sealed Fracture
147.4	0.0	292	N22E	80W	Sealed Fracture
149.0	0.0	286	N16E	62W	Sealed Fracture
150.3	0.0	98	S8W	4E	Sealed Fracture
150.5	0.0	105	S15W	5E	Sealed Fracture

Appendix G
Laboratory Analytical Reports – Groundwater

eurofins | Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Kleinfelder
1 Speen Street
Framingham MA 01701

March 07, 2013

Project: Fairfax 26140

Submittal Date: 02/26/2013
Group Number: 1371554
PO Number: 08531-117575
State of Sample Origin: VA

Client Sample Description	Lancaster Labs (LLI) #
MW-1 Grab Water	6965201
MW-2 Grab Water	6965202
MW-5 Grab Water	6965203
MW-6S Grab Water	6965204
MW-7 Grab Water	6965205
MW-8 Grab Water	6965206
MW-9 Grab Water	6965207
MW-10 Grab Water	6965208
MW-11 Grab Water	6965209
MW-13 Grab Water	6965210
MW-14 Grab Water	6965211
MW-15 Grab Water	6965212
MW-6D(105) Grab Water	6965213
MW-12(153) Grab Water	6965214
MW-16D(95) Grab Water	6965215
PW-1(65) Grab Water	6965216
MW-6D(85) Grab Water	6965217
MW-6D(65) Grab Water	6965218
MW-12(110) Grab Water	6965219

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Kleinfelder	Attn: Mark Steele
ELECTRONIC COPY TO	Kleinfelder	Attn: Angela Vogt
ELECTRONIC COPY TO	Kleinfelder	Attn: Venelda Williams

ELECTRONIC COPY TO Kleinfelder Attn: Don Trego

Respectfully Submitted,

Natalie R. Luciano
Specialist

(717) 556-7258

eurofins | Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Sample Description: MW-1 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965201
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 10:57 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX001

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 1,000	1,000	50
10335	Acrolein	107-02-8	< 5,000	5,000	50
10335	Acrylonitrile	107-13-1	< 1,000	1,000	50
10335	**t-Amyl methyl ether**	994-05-8	**1,700**	250	50
10335	Benzene	71-43-2	< 250	250	50
10335	Bromodichloromethane	75-27-4	< 250	250	50
10335	Bromoform	75-25-2	< 250	250	50
10335	Bromomethane	74-83-9	< 250	250	50
10335	2-Butanone	78-93-3	< 500	500	50
10335	**t-Butyl alcohol**	75-65-0	**15,000**	4,000	50
10335	n-Butylbenzene	104-51-8	< 250	250	50
10335	sec-Butylbenzene	135-98-8	< 250	250	50
10335	Carbon Tetrachloride	56-23-5	< 250	250	50
10335	Chlorobenzene	108-90-7	< 250	250	50
10335	Chloroethane	75-00-3	< 250	250	50
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 500	500	50
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 250	250	50
10335	Chloromethane	74-87-3	< 250	250	50
10335	Dibromochloromethane	124-48-1	< 250	250	50
10335	1,2-Dichlorobenzene	95-50-1	< 250	250	50
10335	1,3-Dichlorobenzene	541-73-1	< 250	250	50
10335	1,4-Dichlorobenzene	106-46-7	< 250	250	50
10335	1,1-Dichloroethane	75-34-3	< 250	250	50
10335	1,2-Dichloroethane	107-06-2	< 250	250	50
10335	1,1-Dichloroethene	75-35-4	< 250	250	50
10335	cis-1,2-Dichloroethene	156-59-2	< 250	250	50
10335	trans-1,2-Dichloroethene	156-60-5	< 250	250	50
10335	1,2-Dichloropropane	78-87-5	< 250	250	50
10335	cis-1,3-Dichloropropene	10061-01-5	< 250	250	50
10335	trans-1,3-Dichloropropene	10061-02-6	< 250	250	50
10335	Ethyl t-butyl ether	637-92-3	< 250	250	50
10335	Ethylbenzene	100-41-4	< 250	250	50
10335	**di-Isopropyl ether**	108-20-3	**3,700**	250	50
10335	Isopropylbenzene	98-82-8	< 250	250	50
10335	p-Isopropyltoluene	99-87-6	< 250	250	50
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**120,000**	2,500	500
10335	Methylene Chloride	75-09-2	< 250	250	50
10335	Naphthalene	91-20-3	< 250	250	50
10335	n-Propylbenzene	103-65-1	< 250	250	50
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 250	250	50
10335	Tetrachloroethene	127-18-4	< 250	250	50
10335	Toluene	108-88-3	< 250	250	50
10335	1,1,1-Trichloroethane	71-55-6	< 250	250	50
10335	1,1,2-Trichloroethane	79-00-5	< 250	250	50
10335	Trichloroethene	79-01-6	< 250	250	50
10335	Trichlorofluoromethane	75-69-4	< 250	250	50
10335	1,2,4-Trimethylbenzene	95-63-6	< 250	250	50

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Analysis Report

Sample Description: MW-1 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965201
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 10:57 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX001

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 250	250	50
10335	Vinyl Chloride	75-01-4	< 250	250	50
10335	Xylene (Total)	1330-20-7	< 250	250	50

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: chloromethane.

GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**93**	1.3	25

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130632AA	03/04/2013 22:44	Sarah A Guill	50
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130632AA	03/04/2013 23:04	Sarah A Guill	500
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130632AA	03/04/2013 22:44	Sarah A Guill	50
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Y130632AA	03/04/2013 23:04	Sarah A Guill	500
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/28/2013 11:56	Catherine J Schwarz	25
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/28/2013 11:56	Catherine J Schwarz	25

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Analysis Report

Sample Description: MW-2 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965202
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 09:10 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX002

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 1,000	1,000	50
10335	Acrolein	107-02-8	< 5,000	5,000	50
10335	Acrylonitrile	107-13-1	< 1,000	1,000	50
10335	**t-Amyl methyl ether**	994-05-8	**1,100**	250	50
10335	Benzene	71-43-2	< 250	250	50
10335	Bromodichloromethane	75-27-4	< 250	250	50
10335	Bromoform	75-25-2	< 250	250	50
10335	Bromomethane	74-83-9	< 250	250	50
10335	2-Butanone	78-93-3	< 500	500	50
10335	**t-Butyl alcohol**	75-65-0	**4,600**	4,000	50
10335	n-Butylbenzene	104-51-8	< 250	250	50
10335	sec-Butylbenzene	135-98-8	< 250	250	50
10335	Carbon Tetrachloride	56-23-5	< 250	250	50
10335	Chlorobenzene	108-90-7	< 250	250	50
10335	Chloroethane	75-00-3	< 250	250	50
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 500	500	50
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 250	250	50
10335	Chloromethane	74-87-3	< 250	250	50
10335	Dibromochloromethane	124-48-1	< 250	250	50
10335	1,2-Dichlorobenzene	95-50-1	< 250	250	50
10335	1,3-Dichlorobenzene	541-73-1	< 250	250	50
10335	1,4-Dichlorobenzene	106-46-7	< 250	250	50
10335	1,1-Dichloroethane	75-34-3	< 250	250	50
10335	1,2-Dichloroethane	107-06-2	< 250	250	50
10335	1,1-Dichloroethene	75-35-4	< 250	250	50
10335	cis-1,2-Dichloroethene	156-59-2	< 250	250	50
10335	trans-1,2-Dichloroethene	156-60-5	< 250	250	50
10335	1,2-Dichloropropane	78-87-5	< 250	250	50
10335	cis-1,3-Dichloropropene	10061-01-5	< 250	250	50
10335	trans-1,3-Dichloropropene	10061-02-6	< 250	250	50
10335	Ethyl t-butyl ether	637-92-3	< 250	250	50
10335	Ethylbenzene	100-41-4	< 250	250	50
10335	**di-Isopropyl ether**	108-20-3	**1,900**	250	50
10335	Isopropylbenzene	98-82-8	< 250	250	50
10335	p-Isopropyltoluene	99-87-6	< 250	250	50
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**71,000**	2,500	500
10335	Methylene Chloride	75-09-2	< 250	250	50
10335	Naphthalene	91-20-3	< 250	250	50
10335	n-Propylbenzene	103-65-1	< 250	250	50
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 250	250	50
10335	Tetrachloroethene	127-18-4	< 250	250	50
10335	Toluene	108-88-3	< 250	250	50
10335	1,1,1-Trichloroethane	71-55-6	< 250	250	50
10335	1,1,2-Trichloroethane	79-00-5	< 250	250	50
10335	Trichloroethene	79-01-6	< 250	250	50
10335	Trichlorofluoromethane	75-69-4	< 250	250	50
10335	1,2,4-Trimethylbenzene	95-63-6	< 250	250	50

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Analysis Report

Sample Description: MW-2 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965202
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 09:10 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX002

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 250	250	50
10335	Vinyl Chloride	75-01-4	< 250	250	50
10335	Xylene (Total)	1330-20-7	< 250	250	50

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: chloromethane.

GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**64**	1.3	25

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130632AA	03/04/2013 23:25	Sarah A Guill	50
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130632AA	03/04/2013 23:45	Sarah A Guill	500
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130632AA	03/04/2013 23:25	Sarah A Guill	50
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Y130632AA	03/04/2013 23:45	Sarah A Guill	500
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/28/2013 12:21	Catherine J Schwarz	25
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/28/2013 12:21	Catherine J Schwarz	25

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Analysis Report

Sample Description: MW-5 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965203
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 08:13 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX005

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	t-Amyl methyl ether	994-05-8	< 5	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	t-Butyl alcohol	75-65-0	< 80	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	cis-1,2-Dichloroethene	156-59-2	< 5	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	di-Isopropyl ether	108-20-3	< 5	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	< 5	5	1
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	**Tetrachloroethene**	127-18-4	**10**	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1
10335	Vinyl Chloride	75-01-4	< 5	5	1

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Analysis Report

Sample Description: MW-5 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965203
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 08:13 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX005

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	< 5	5	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: chloromethane.				
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	< 0.050	0.050	1

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130632AA	03/05/2013 00:06	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130632AA	03/05/2013 00:06	Sarah A Guill	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13059B07A	03/01/2013 12:57	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13059B07A	03/01/2013 12:57	Catherine J Schwarz	1

Sample Description: MW-6S Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965204
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 12:24 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX06S

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	t-Amyl methyl ether	994-05-8	< 5	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	t-Butyl alcohol	75-65-0	< 80	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	cis-1,2-Dichloroethene	156-59-2	< 5	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	di-Isopropyl ether	108-20-3	< 5	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	< 5	5	1
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	Tetrachloroethene	127-18-4	< 5	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1
10335	Vinyl Chloride	75-01-4	< 5	5	1

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Analysis Report

Sample Description: MW-6S Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965204
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 12:24 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX06S

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	< 5	5	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: chloromethane.				
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	< 0.050	0.050	1

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130632AA	03/05/2013 00:27	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130632AA	03/05/2013 00:27	Sarah A Guill	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/27/2013 17:39	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/27/2013 17:39	Catherine J Schwarz	1

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Analysis Report

Sample Description: MW-7 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965205
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 10:45 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX007

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 1,000	1,000	50
10335	Acrolein	107-02-8	< 5,000	5,000	50
10335	Acrylonitrile	107-13-1	< 1,000	1,000	50
10335	**t-Amyl methyl ether**	994-05-8	**940**	250	50
10335	Benzene	71-43-2	< 250	250	50
10335	Bromodichloromethane	75-27-4	< 250	250	50
10335	Bromoform	75-25-2	< 250	250	50
10335	Bromomethane	74-83-9	< 250	250	50
10335	2-Butanone	78-93-3	< 500	500	50
10335	**t-Butyl alcohol**	75-65-0	**14,000**	4,000	50
10335	n-Butylbenzene	104-51-8	< 250	250	50
10335	sec-Butylbenzene	135-98-8	< 250	250	50
10335	Carbon Tetrachloride	56-23-5	< 250	250	50
10335	Chlorobenzene	108-90-7	< 250	250	50
10335	Chloroethane	75-00-3	< 250	250	50
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 500	500	50
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 250	250	50
10335	Chloromethane	74-87-3	< 250	250	50
10335	Dibromochloromethane	124-48-1	< 250	250	50
10335	1,2-Dichlorobenzene	95-50-1	< 250	250	50
10335	1,3-Dichlorobenzene	541-73-1	< 250	250	50
10335	1,4-Dichlorobenzene	106-46-7	< 250	250	50
10335	1,1-Dichloroethane	75-34-3	< 250	250	50
10335	1,2-Dichloroethane	107-06-2	< 250	250	50
10335	1,1-Dichloroethene	75-35-4	< 250	250	50
10335	cis-1,2-Dichloroethene	156-59-2	< 250	250	50
10335	trans-1,2-Dichloroethene	156-60-5	< 250	250	50
10335	1,2-Dichloropropane	78-87-5	< 250	250	50
10335	cis-1,3-Dichloropropene	10061-01-5	< 250	250	50
10335	trans-1,3-Dichloropropene	10061-02-6	< 250	250	50
10335	Ethyl t-butyl ether	637-92-3	< 250	250	50
10335	Ethylbenzene	100-41-4	< 250	250	50
10335	**di-Isopropyl ether**	108-20-3	**1,700**	250	50
10335	Isopropylbenzene	98-82-8	< 250	250	50
10335	p-Isopropyltoluene	99-87-6	< 250	250	50
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**61,000**	2,500	500
10335	Methylene Chloride	75-09-2	< 250	250	50
10335	Naphthalene	91-20-3	< 250	250	50
10335	n-Propylbenzene	103-65-1	< 250	250	50
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 250	250	50
10335	Tetrachloroethene	127-18-4	< 250	250	50
10335	Toluene	108-88-3	< 250	250	50
10335	1,1,1-Trichloroethane	71-55-6	< 250	250	50
10335	1,1,2-Trichloroethane	79-00-5	< 250	250	50
10335	Trichloroethene	79-01-6	< 250	250	50
10335	Trichlorofluoromethane	75-69-4	< 250	250	50
10335	1,2,4-Trimethylbenzene	95-63-6	< 250	250	50

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Analysis Report

Sample Description: MW-7 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965205
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 10:45 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX007

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 250	250	50
10335	Vinyl Chloride	75-01-4	< 250	250	50
10335	Xylene (Total)	1330-20-7	< 250	250	50

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: chloromethane.

GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**40**	1.3	25

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130632AA	03/05/2013 00:47	Sarah A Guill	50
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130632AA	03/05/2013 01:08	Sarah A Guill	500
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130632AA	03/05/2013 00:47	Sarah A Guill	50
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Y130632AA	03/05/2013 01:08	Sarah A Guill	500
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/28/2013 12:46	Catherine J Schwarz	25
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/28/2013 12:46	Catherine J Schwarz	25

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Analysis Report

Sample Description: MW-8 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965206
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 09:30 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX008

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	t-Amyl methyl ether	994-05-8	< 5	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	**t-Butyl alcohol**	75-65-0	**280**	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	cis-1,2-Dichloroethene	156-59-2	< 5	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	**di-Isopropyl ether**	108-20-3	**220**	50	10
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**180**	5	1
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	Tetrachloroethene	127-18-4	< 5	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1

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Analysis Report

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Sample Description: MW-8 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965206
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 09:30 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX008

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Vinyl Chloride	75-01-4	< 5	5	1
10335	Xylene (Total)	1330-20-7	< 5	5	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**1.1**	0.050	1

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130642AA	03/05/2013 22:41	Sarah A Guill	1
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130642AA	03/05/2013 23:01	Sarah A Guill	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130642AA	03/05/2013 22:41	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Y130642AA	03/05/2013 23:01	Sarah A Guill	10
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/27/2013 18:04	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/27/2013 18:04	Catherine J Schwarz	1

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Analysis Report

Sample Description: MW-9 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965207
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 08:37 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX009

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	t-Amyl methyl ether	994-05-8	< 5	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	t-Butyl alcohol	75-65-0	< 80	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	**cis-1,2-Dichloroethene**	156-59-2	**140**	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	**di-Isopropyl ether**	108-20-3	**17**	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**55**	5	1
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	**Tetrachloroethene**	127-18-4	**13**	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1

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Analysis Report

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Sample Description: MW-9 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965207
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 08:37 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX009

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1
10335	Vinyl Chloride	75-01-4	< 5	5	1
10335	Xylene (Total)	1330-20-7	< 5	5	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**0.13**	0.050	1

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130642AA	03/05/2013 23:22	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130642AA	03/05/2013 23:22	Sarah A Guill	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/27/2013 18:30	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/27/2013 18:30	Catherine J Schwarz	1

Sample Description: MW-10 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965208
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 07:35 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX010

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	t-Amyl methyl ether	994-05-8	< 5	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	t-Butyl alcohol	75-65-0	< 80	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	**cis-1,2-Dichloroethene**	156-59-2	**32**	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	di-Isopropyl ether	108-20-3	< 5	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**7**	5	1
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	Tetrachloroethene	127-18-4	< 5	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1

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Analysis Report

Sample Description: MW-10 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965208
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 07:35 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX010

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Vinyl Chloride	75-01-4	< 5	5	1
10335	Xylene (Total)	1330-20-7	< 5	5	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	< 0.050	0.050	1

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130642AA	03/05/2013 23:43	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130642AA	03/05/2013 23:43	Sarah A Guill	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/27/2013 18:55	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/27/2013 18:55	Catherine J Schwarz	1

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Analysis Report

Sample Description: MW-11 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965209
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 11:33 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX011

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 40	40	2
10335	Acrolein	107-02-8	< 200	200	2
10335	Acrylonitrile	107-13-1	< 40	40	2
10335	**t-Amyl methyl ether**	994-05-8	**22**	10	2
10335	Benzene	71-43-2	< 10	10	2
10335	Bromodichloromethane	75-27-4	< 10	10	2
10335	Bromoform	75-25-2	< 10	10	2
10335	Bromomethane	74-83-9	< 10	10	2
10335	2-Butanone	78-93-3	< 20	20	2
10335	**t-Butyl alcohol**	75-65-0	**180**	160	2
10335	n-Butylbenzene	104-51-8	< 10	10	2
10335	sec-Butylbenzene	135-98-8	< 10	10	2
10335	Carbon Tetrachloride	56-23-5	< 10	10	2
10335	Chlorobenzene	108-90-7	< 10	10	2
10335	Chloroethane	75-00-3	< 10	10	2
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 20	20	2
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 10	10	2
10335	Chloromethane	74-87-3	< 10	10	2
10335	Dibromochloromethane	124-48-1	< 10	10	2
10335	1,2-Dichlorobenzene	95-50-1	< 10	10	2
10335	1,3-Dichlorobenzene	541-73-1	< 10	10	2
10335	1,4-Dichlorobenzene	106-46-7	< 10	10	2
10335	1,1-Dichloroethane	75-34-3	< 10	10	2
10335	1,2-Dichloroethane	107-06-2	< 10	10	2
10335	1,1-Dichloroethene	75-35-4	< 10	10	2
10335	cis-1,2-Dichloroethene	156-59-2	< 10	10	2
10335	trans-1,2-Dichloroethene	156-60-5	< 10	10	2
10335	1,2-Dichloropropane	78-87-5	< 10	10	2
10335	cis-1,3-Dichloropropene	10061-01-5	< 10	10	2
10335	trans-1,3-Dichloropropene	10061-02-6	< 10	10	2
10335	Ethyl t-butyl ether	637-92-3	< 10	10	2
10335	Ethylbenzene	100-41-4	< 10	10	2
10335	**di-Isopropyl ether**	108-20-3	**530**	10	2
10335	Isopropylbenzene	98-82-8	< 10	10	2
10335	p-Isopropyltoluene	99-87-6	< 10	10	2
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**1,400**	100	20
10335	Methylene Chloride	75-09-2	< 10	10	2
10335	Naphthalene	91-20-3	< 10	10	2
10335	n-Propylbenzene	103-65-1	< 10	10	2
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 10	10	2
10335	Tetrachloroethene	127-18-4	< 10	10	2
10335	Toluene	108-88-3	< 10	10	2
10335	1,1,1-Trichloroethane	71-55-6	< 10	10	2
10335	1,1,2-Trichloroethane	79-00-5	< 10	10	2
10335	Trichloroethene	79-01-6	< 10	10	2
10335	Trichlorofluoromethane	75-69-4	< 10	10	2
10335	1,2,4-Trimethylbenzene	95-63-6	< 10	10	2

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Analysis Report

Sample Description: MW-11 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965209
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 11:33 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX011

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 10	10	2
10335	Vinyl Chloride	75-01-4	< 10	10	2
10335	Xylene (Total)	1330-20-7	< 10	10	2
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**2.5**	0.050	1

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130642AA	03/06/2013 00:04	Sarah A Guill	2
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130642AA	03/06/2013 00:24	Sarah A Guill	20
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130642AA	03/06/2013 00:04	Sarah A Guill	2
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Y130642AA	03/06/2013 00:24	Sarah A Guill	20
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/27/2013 19:21	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/27/2013 19:21	Catherine J Schwarz	1

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Analysis Report

Sample Description: MW-13 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965210
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 10:03 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX013

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 100	100	5
10335	Acrolein	107-02-8	< 500	500	5
10335	Acrylonitrile	107-13-1	< 100	100	5
10335	**t-Amyl methyl ether**	994-05-8	**80**	25	5
10335	Benzene	71-43-2	< 25	25	5
10335	Bromodichloromethane	75-27-4	< 25	25	5
10335	Bromoform	75-25-2	< 25	25	5
10335	Bromomethane	74-83-9	< 25	25	5
10335	2-Butanone	78-93-3	< 50	50	5
10335	t-Butyl alcohol	75-65-0	< 400	400	5
10335	n-Butylbenzene	104-51-8	< 25	25	5
10335	sec-Butylbenzene	135-98-8	< 25	25	5
10335	Carbon Tetrachloride	56-23-5	< 25	25	5
10335	Chlorobenzene	108-90-7	< 25	25	5
10335	Chloroethane	75-00-3	< 25	25	5
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 50	50	5
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 25	25	5
10335	Chloromethane	74-87-3	< 25	25	5
10335	Dibromochloromethane	124-48-1	< 25	25	5
10335	1,2-Dichlorobenzene	95-50-1	< 25	25	5
10335	1,3-Dichlorobenzene	541-73-1	< 25	25	5
10335	1,4-Dichlorobenzene	106-46-7	< 25	25	5
10335	1,1-Dichloroethane	75-34-3	< 25	25	5
10335	1,2-Dichloroethane	107-06-2	< 25	25	5
10335	1,1-Dichloroethene	75-35-4	< 25	25	5
10335	cis-1,2-Dichloroethene	156-59-2	< 25	25	5
10335	trans-1,2-Dichloroethene	156-60-5	< 25	25	5
10335	1,2-Dichloropropane	78-87-5	< 25	25	5
10335	cis-1,3-Dichloropropene	10061-01-5	< 25	25	5
10335	trans-1,3-Dichloropropene	10061-02-6	< 25	25	5
10335	Ethyl t-butyl ether	637-92-3	< 25	25	5
10335	Ethylbenzene	100-41-4	< 25	25	5
10335	**di-Isopropyl ether**	108-20-3	**150**	25	5
10335	Isopropylbenzene	98-82-8	< 25	25	5
10335	p-Isopropyltoluene	99-87-6	< 25	25	5
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**5,300**	250	50
10335	Methylene Chloride	75-09-2	< 25	25	5
10335	Naphthalene	91-20-3	< 25	25	5
10335	n-Propylbenzene	103-65-1	< 25	25	5
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 25	25	5
10335	Tetrachloroethene	127-18-4	< 25	25	5
10335	Toluene	108-88-3	< 25	25	5
10335	1,1,1-Trichloroethane	71-55-6	< 25	25	5
10335	1,1,2-Trichloroethane	79-00-5	< 25	25	5
10335	Trichloroethene	79-01-6	< 25	25	5
10335	Trichlorofluoromethane	75-69-4	< 25	25	5
10335	1,2,4-Trimethylbenzene	95-63-6	< 25	25	5
10335	1,3,5-Trimethylbenzene	108-67-8	< 25	25	5

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Analysis Report

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Sample Description: MW-13 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965210
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 10:03 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX013

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Vinyl Chloride	75-01-4	< 25	25	5
10335	Xylene (Total)	1330-20-7	< 25	25	5
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**5.5**	0.25	5

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130651AA	03/06/2013 17:21	Chelsea B Stong	5
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130651AA	03/06/2013 17:42	Chelsea B Stong	50
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130651AA	03/06/2013 17:21	Chelsea B Stong	5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Y130651AA	03/06/2013 17:42	Chelsea B Stong	50
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/28/2013 13:12	Catherine J Schwarz	5
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/28/2013 13:12	Catherine J Schwarz	5

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Analysis Report

Sample Description: MW-14 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965211
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 10:23 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX014

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 200	200	10
10335	Acrolein	107-02-8	< 1,000	1,000	10
10335	Acrylonitrile	107-13-1	< 200	200	10
10335	**t-Amyl methyl ether**	994-05-8	**450**	50	10
10335	Benzene	71-43-2	< 50	50	10
10335	Bromodichloromethane	75-27-4	< 50	50	10
10335	Bromoform	75-25-2	< 50	50	10
10335	Bromomethane	74-83-9	< 50	50	10
10335	2-Butanone	78-93-3	< 100	100	10
10335	**t-Butyl alcohol**	75-65-0	**2,500**	800	10
10335	n-Butylbenzene	104-51-8	< 50	50	10
10335	sec-Butylbenzene	135-98-8	< 50	50	10
10335	Carbon Tetrachloride	56-23-5	< 50	50	10
10335	Chlorobenzene	108-90-7	< 50	50	10
10335	Chloroethane	75-00-3	< 50	50	10
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 100	100	10
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 50	50	10
10335	Chloromethane	74-87-3	< 50	50	10
10335	Dibromochloromethane	124-48-1	< 50	50	10
10335	1,2-Dichlorobenzene	95-50-1	< 50	50	10
10335	1,3-Dichlorobenzene	541-73-1	< 50	50	10
10335	1,4-Dichlorobenzene	106-46-7	< 50	50	10
10335	1,1-Dichloroethane	75-34-3	< 50	50	10
10335	1,2-Dichloroethane	107-06-2	< 50	50	10
10335	1,1-Dichloroethene	75-35-4	< 50	50	10
10335	cis-1,2-Dichloroethene	156-59-2	< 50	50	10
10335	trans-1,2-Dichloroethene	156-60-5	< 50	50	10
10335	1,2-Dichloropropane	78-87-5	< 50	50	10
10335	cis-1,3-Dichloropropene	10061-01-5	< 50	50	10
10335	trans-1,3-Dichloropropene	10061-02-6	< 50	50	10
10335	Ethyl t-butyl ether	637-92-3	< 50	50	10
10335	Ethylbenzene	100-41-4	< 50	50	10
10335	**di-Isopropyl ether**	108-20-3	**1,100**	50	10
10335	Isopropylbenzene	98-82-8	< 50	50	10
10335	p-Isopropyltoluene	99-87-6	< 50	50	10
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**29,000**	500	100
10335	Methylene Chloride	75-09-2	< 50	50	10
10335	Naphthalene	91-20-3	< 50	50	10
10335	n-Propylbenzene	103-65-1	< 50	50	10
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 50	50	10
10335	Tetrachloroethene	127-18-4	< 50	50	10
10335	Toluene	108-88-3	< 50	50	10
10335	1,1,1-Trichloroethane	71-55-6	< 50	50	10
10335	1,1,2-Trichloroethane	79-00-5	< 50	50	10
10335	Trichloroethene	79-01-6	< 50	50	10
10335	Trichlorofluoromethane	75-69-4	< 50	50	10
10335	1,2,4-Trimethylbenzene	95-63-6	< 50	50	10

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Analysis Report

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Sample Description: MW-14 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965211
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 10:23 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX014

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 50	50	10
10335	Vinyl Chloride	75-01-4	< 50	50	10
10335	Xylene (Total)	1330-20-7	< 50	50	10
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**28**	0.50	10

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	W130601AA	03/02/2013 01:09	Kevin A Sposito	10
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	W130601AA	03/02/2013 01:33	Kevin A Sposito	100
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W130601AA	03/02/2013 01:09	Kevin A Sposito	10
01163	GC/MS VOA Water Prep	SW-846 5030B	2	W130601AA	03/02/2013 01:33	Kevin A Sposito	100
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/28/2013 13:37	Catherine J Schwarz	10
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/28/2013 13:37	Catherine J Schwarz	10

Sample Description: MW-15 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965212
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 11:58 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX015

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 40	40	2
10335	Acrolein	107-02-8	< 200	200	2
10335	Acrylonitrile	107-13-1	< 40	40	2
10335	**t-Amyl methyl ether**	994-05-8	**28**	10	2
10335	Benzene	71-43-2	< 10	10	2
10335	Bromodichloromethane	75-27-4	< 10	10	2
10335	Bromoform	75-25-2	< 10	10	2
10335	Bromomethane	74-83-9	< 10	10	2
10335	2-Butanone	78-93-3	< 20	20	2
10335	**t-Butyl alcohol**	75-65-0	**300**	160	2
10335	n-Butylbenzene	104-51-8	< 10	10	2
10335	sec-Butylbenzene	135-98-8	< 10	10	2
10335	Carbon Tetrachloride	56-23-5	< 10	10	2
10335	Chlorobenzene	108-90-7	< 10	10	2
10335	Chloroethane	75-00-3	< 10	10	2
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 20	20	2
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 10	10	2
10335	Chloromethane	74-87-3	< 10	10	2
10335	Dibromochloromethane	124-48-1	< 10	10	2
10335	1,2-Dichlorobenzene	95-50-1	< 10	10	2
10335	1,3-Dichlorobenzene	541-73-1	< 10	10	2
10335	1,4-Dichlorobenzene	106-46-7	< 10	10	2
10335	1,1-Dichloroethane	75-34-3	< 10	10	2
10335	1,2-Dichloroethane	107-06-2	< 10	10	2
10335	1,1-Dichloroethene	75-35-4	< 10	10	2
10335	cis-1,2-Dichloroethene	156-59-2	< 10	10	2
10335	trans-1,2-Dichloroethene	156-60-5	< 10	10	2
10335	1,2-Dichloropropane	78-87-5	< 10	10	2
10335	cis-1,3-Dichloropropene	10061-01-5	< 10	10	2
10335	trans-1,3-Dichloropropene	10061-02-6	< 10	10	2
10335	Ethyl t-butyl ether	637-92-3	< 10	10	2
10335	Ethylbenzene	100-41-4	< 10	10	2
10335	**di-Isopropyl ether**	108-20-3	**140**	10	2
10335	Isopropylbenzene	98-82-8	< 10	10	2
10335	p-Isopropyltoluene	99-87-6	< 10	10	2
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**1,800**	100	20
10335	Methylene Chloride	75-09-2	< 10	10	2
10335	Naphthalene	91-20-3	< 10	10	2
10335	n-Propylbenzene	103-65-1	< 10	10	2
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 10	10	2
10335	Tetrachloroethene	127-18-4	< 10	10	2
10335	Toluene	108-88-3	< 10	10	2
10335	1,1,1-Trichloroethane	71-55-6	< 10	10	2
10335	1,1,2-Trichloroethane	79-00-5	< 10	10	2
10335	Trichloroethene	79-01-6	< 10	10	2
10335	Trichlorofluoromethane	75-69-4	< 10	10	2
10335	1,2,4-Trimethylbenzene	95-63-6	< 10	10	2

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Analysis Report

Sample Description: MW-15 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965212
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 11:58 by TD

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX015

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 10	10	2
10335	Vinyl Chloride	75-01-4	< 10	10	2
10335	Xylene (Total)	1330-20-7	< 10	10	2
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**1.5**	0.050	1

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130651AA	03/06/2013 18:02	Chelsea B Stong	2
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130651AA	03/06/2013 18:23	Chelsea B Stong	20
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130651AA	03/06/2013 18:02	Chelsea B Stong	2
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Y130651AA	03/06/2013 18:23	Chelsea B Stong	20
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/27/2013 19:46	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/27/2013 19:46	Catherine J Schwarz	1

Sample Description: MW-6D(105) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965213
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 08:55 by CL

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX06D

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	t-Amyl methyl ether	994-05-8	< 5	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	t-Butyl alcohol	75-65-0	< 80	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	cis-1,2-Dichloroethene	156-59-2	< 5	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	di-Isopropyl ether	108-20-3	< 5	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	< 5	5	1
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	Tetrachloroethene	127-18-4	< 5	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1
10335	Vinyl Chloride	75-01-4	< 5	5	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-6D(105) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965213
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 08:55 by CL

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX06D

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	< 5	5	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	< 0.050	0.050	1

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130651AA	03/06/2013 18:44	Chelsea B Stong	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130651AA	03/06/2013 18:44	Chelsea B Stong	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/27/2013 20:11	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/27/2013 20:11	Catherine J Schwarz	1

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2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Sample Description: MW-12(153) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965214
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 15:25 by CL

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX012

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	t-Amyl methyl ether	994-05-8	< 5	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	t-Butyl alcohol	75-65-0	< 80	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	cis-1,2-Dichloroethene	156-59-2	< 5	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	di-Isopropyl ether	108-20-3	< 5	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	< 5	5	1
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	Tetrachloroethene	127-18-4	< 5	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1
10335	Vinyl Chloride	75-01-4	< 5	5	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-12(153) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965214
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 15:25 by CL

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX012

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	< 5	5	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	< 0.050	0.050	1

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130651AA	03/06/2013 19:05	Chelsea B Stong	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130651AA	03/06/2013 19:05	Chelsea B Stong	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/27/2013 20:37	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/27/2013 20:37	Catherine J Schwarz	1

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2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Sample Description: MW-16D(95) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965215
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 12:30 by CL

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX16D

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 400	400	20
10335	Acrolein	107-02-8	< 2,000	2,000	20
10335	Acrylonitrile	107-13-1	< 400	400	20
10335	**t-Amyl methyl ether**	994-05-8	**200**	100	20
10335	Benzene	71-43-2	< 100	100	20
10335	Bromodichloromethane	75-27-4	< 100	100	20
10335	Bromoform	75-25-2	< 100	100	20
10335	Bromomethane	74-83-9	< 100	100	20
10335	2-Butanone	78-93-3	< 200	200	20
10335	t-Butyl alcohol	75-65-0	< 1,600	1,600	20
10335	n-Butylbenzene	104-51-8	< 100	100	20
10335	sec-Butylbenzene	135-98-8	< 100	100	20
10335	Carbon Tetrachloride	56-23-5	< 100	100	20
10335	Chlorobenzene	108-90-7	< 100	100	20
10335	Chloroethane	75-00-3	< 100	100	20
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 200	200	20
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 100	100	20
10335	Chloromethane	74-87-3	< 100	100	20
10335	Dibromochloromethane	124-48-1	< 100	100	20
10335	1,2-Dichlorobenzene	95-50-1	< 100	100	20
10335	1,3-Dichlorobenzene	541-73-1	< 100	100	20
10335	1,4-Dichlorobenzene	106-46-7	< 100	100	20
10335	1,1-Dichloroethane	75-34-3	< 100	100	20
10335	1,2-Dichloroethane	107-06-2	< 100	100	20
10335	1,1-Dichloroethene	75-35-4	< 100	100	20
10335	**cis-1,2-Dichloroethene**	156-59-2	**250**	100	20
10335	trans-1,2-Dichloroethene	156-60-5	< 100	100	20
10335	1,2-Dichloropropane	78-87-5	< 100	100	20
10335	cis-1,3-Dichloropropene	10061-01-5	< 100	100	20
10335	trans-1,3-Dichloropropene	10061-02-6	< 100	100	20
10335	Ethyl t-butyl ether	637-92-3	< 100	100	20
10335	Ethylbenzene	100-41-4	< 100	100	20
10335	**di-Isopropyl ether**	108-20-3	**360**	100	20
10335	Isopropylbenzene	98-82-8	< 100	100	20
10335	p-Isopropyltoluene	99-87-6	< 100	100	20
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**9,800**	1,000	200
10335	Methylene Chloride	75-09-2	< 100	100	20
10335	Naphthalene	91-20-3	< 100	100	20
10335	n-Propylbenzene	103-65-1	< 100	100	20
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 100	100	20
10335	Tetrachloroethene	127-18-4	< 100	100	20
10335	Toluene	108-88-3	< 100	100	20
10335	1,1,1-Trichloroethane	71-55-6	< 100	100	20
10335	1,1,2-Trichloroethane	79-00-5	< 100	100	20
10335	Trichloroethene	79-01-6	< 100	100	20
10335	Trichlorofluoromethane	75-69-4	< 100	100	20
10335	1,2,4-Trimethylbenzene	95-63-6	< 100	100	20

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-16D(95) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965215
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 12:30 by CL

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FX16D

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 100	100	20
10335	Vinyl Chloride	75-01-4	< 100	100	20
10335	Xylene (Total)	1330-20-7	< 100	100	20
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**11**	1.0	20

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130651AA	03/06/2013 19:25	Chelsea B Stong	20
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130651AA	03/06/2013 19:46	Chelsea B Stong	200
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130651AA	03/06/2013 19:25	Chelsea B Stong	20
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Y130651AA	03/06/2013 19:46	Chelsea B Stong	200
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/28/2013 14:02	Catherine J Schwarz	20
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/28/2013 14:02	Catherine J Schwarz	20

Sample Description: PW-1(65) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965216
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 11:30 by CL

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FXP01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	**t-Amyl methyl ether**	994-05-8	**51**	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	**t-Butyl alcohol**	75-65-0	**110**	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	**cis-1,2-Dichloroethene**	156-59-2	**110**	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	**di-Isopropyl ether**	108-20-3	**140**	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**800**	50	10
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	**Tetrachloroethene**	127-18-4	**8**	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: PW-1(65) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965216
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 11:30 by CL

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

FXP01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1
10335	Vinyl Chloride	75-01-4	< 5	5	1
10335	Xylene (Total)	1330-20-7	< 5	5	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**1.4**	0.050	1

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130651AA	03/06/2013 20:07	Chelsea B Stong	1
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130651AA	03/06/2013 20:28	Chelsea B Stong	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130651AA	03/06/2013 20:07	Chelsea B Stong	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Y130651AA	03/06/2013 20:28	Chelsea B Stong	10
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/28/2013 11:30	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/28/2013 11:30	Catherine J Schwarz	1

Sample Description: MW-6D(85) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965217
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 09:35 by CL

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

6D-85

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	t-Amyl methyl ether	994-05-8	< 5	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	t-Butyl alcohol	75-65-0	< 80	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	cis-1,2-Dichloroethene	156-59-2	< 5	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	di-Isopropyl ether	108-20-3	< 5	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	< 5	5	1
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	Tetrachloroethene	127-18-4	< 5	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1
10335	Vinyl Chloride	75-01-4	< 5	5	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-6D(85) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965217
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 09:35 by CL

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

6D-85

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	< 5	5	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	< 0.050	0.050	1

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130651AA	03/06/2013 20:49	Chelsea B Stong	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130651AA	03/06/2013 20:49	Chelsea B Stong	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/28/2013 10:14	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/28/2013 10:14	Catherine J Schwarz	1

Sample Description: MW-6D(65) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965218
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 10:15 by CL

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

6D-65

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	t-Amyl methyl ether	994-05-8	< 5	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	t-Butyl alcohol	75-65-0	< 80	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	cis-1,2-Dichloroethene	156-59-2	< 5	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	di-Isopropyl ether	108-20-3	< 5	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	< 5	5	1
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	Tetrachloroethene	127-18-4	< 5	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1
10335	Vinyl Chloride	75-01-4	< 5	5	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-6D(65) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965218
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 10:15 by CL

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

6D-65

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	< 5	5	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	< 0.050	0.050	1

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130651AA	03/06/2013 21:10	Chelsea B Stong	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130651AA	03/06/2013 21:10	Chelsea B Stong	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/28/2013 10:40	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/28/2013 10:40	Catherine J Schwarz	1

Sample Description: MW-12(110) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965219
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 16:00 by CL

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

12110

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	t-Amyl methyl ether	994-05-8	< 5	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	t-Butyl alcohol	75-65-0	< 80	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	cis-1,2-Dichloroethene	156-59-2	< 5	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	di-Isopropyl ether	108-20-3	< 5	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	< 5	5	1
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	Tetrachloroethene	127-18-4	< 5	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1
10335	Vinyl Chloride	75-01-4	< 5	5	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-12(110) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 6965219
LLI Group # 1371554
Account # 12152

Project Name: Fairfax 26140

Collected: 02/25/2013 16:00 by CL

Submitted: 02/26/2013 17:30
Reported: 03/07/2013 17:48

Kleinfelder
1 Speen Street
Framingham MA 01701

12110

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	< 5	5	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	< 0.050	0.050	1

General Sample Comments

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	Y130651AA	03/06/2013 21:30	Chelsea B Stong	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y130651AA	03/06/2013 21:30	Chelsea B Stong	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13058A07A	02/28/2013 11:05	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13058A07A	02/28/2013 11:05	Catherine J Schwarz	1

Quality Control Summary

Client Name: Kleinfelder Group Number: 1371554
Reported: 03/07/13 at 05:48 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: W130601AA	Sample number(s): 6965211							
Acetone	< 20	20.	ug/l	115	91	49-234	24	30
Acrolein	< 100	100.	ug/l	103	91	46-146	13	30
Acrylonitrile	< 20	20.	ug/l	90	79	61-130	13	30
t-Amyl methyl ether	< 5	5.	ug/l	103	92	66-120	11	30
Benzene	< 5	5.	ug/l	110	97	77-121	13	30
Bromodichloromethane	< 5	5.	ug/l	114	99	73-120	14	30
Bromoform	< 5	5.	ug/l	91	82	61-120	10	30
Bromomethane	< 5	5.	ug/l	72	64	51-120	11	30
2-Butanone	< 10	10.	ug/l	99	85	57-141	15	30
t-Butyl alcohol	< 80	80.	ug/l	109	97	75-120	12	30
n-Butylbenzene	< 5	5.	ug/l	98	88	73-130	11	30
sec-Butylbenzene	< 5	5.	ug/l	101	90	74-124	12	30
Carbon Tetrachloride	< 5	5.	ug/l	117	104	65-137	13	30
Chlorobenzene	< 5	5.	ug/l	108	97	80-120	11	30
Chloroethane	< 5	5.	ug/l	68	60	60-120	11	30
2-Chloroethyl Vinyl Ether	< 10	10.	ug/l	95	83	52-127	14	30
Chloroform	< 5	5.	ug/l	112	98	77-122	13	30
Chloromethane	< 5	5.	ug/l	73	67	54-123	9	30
Dibromochloromethane	< 5	5.	ug/l	106	95	72-120	11	30
1,2-Dichlorobenzene	< 5	5.	ug/l	108	97	80-120	11	30
1,3-Dichlorobenzene	< 5	5.	ug/l	110	96	80-120	14	30
1,4-Dichlorobenzene	< 5	5.	ug/l	107	95	80-120	12	30
1,1-Dichloroethane	< 5	5.	ug/l	109	93	79-120	15	30
1,2-Dichloroethane	< 5	5.	ug/l	128	110	64-130	15	30
1,1-Dichloroethene	< 5	5.	ug/l	109	97	76-124	11	30
cis-1,2-Dichloroethene	< 5	5.	ug/l	116	103	80-120	12	30
trans-1,2-Dichloroethene	< 5	5.	ug/l	112	98	80-120	14	30
1,2-Dichloropropane	< 5	5.	ug/l	102	89	80-120	14	30
cis-1,3-Dichloropropene	< 5	5.	ug/l	112	98	78-120	13	30
trans-1,3-Dichloropropene	< 5	5.	ug/l	96	85	66-124	12	30
Ethyl t-butyl ether	< 5	5.	ug/l	101	91	66-120	10	30
Ethylbenzene	< 5	5.	ug/l	105	93	79-120	12	30
di-Isopropyl ether	< 5	5.	ug/l	95	85	65-120	11	30
Isopropylbenzene	< 5	5.	ug/l	107	95	77-120	12	30
p-Isopropyltoluene	< 5	5.	ug/l	104	93	77-121	11	30
Methyl Tertiary Butyl Ether	< 5	5.	ug/l	107	97	68-121	10	30
Methylene Chloride	< 5	5.	ug/l	107	94	84-118	12	30
Naphthalene	< 5	5.	ug/l	93	84	47-126	10	30
n-Propylbenzene	< 5	5.	ug/l	103	91	77-130	12	30
1,1,2,2-Tetrachloroethane	< 5	5.	ug/l	90	84	70-129	8	30
Tetrachloroethene	< 5	5.	ug/l	114	103	79-120	10	30
Toluene	< 5	5.	ug/l	105	94	79-120	12	30
1,1,1-Trichloroethane	< 5	5.	ug/l	121	106	66-126	14	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1371554
Reported: 03/07/13 at 05:48 PM

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1,2-Trichloroethane	< 5	5.	ug/l	102	92	80-120	11	30
Trichloroethene	< 5	5.	ug/l	119	105	80-120	13	30
Trichlorofluoromethane	< 5	5.	ug/l	111	98	65-130	13	30
1,2,4-Trimethylbenzene	< 5	5.	ug/l	104	92	69-122	12	30
1,3,5-Trimethylbenzene	< 5	5.	ug/l	106	92	68-124	14	30
Vinyl Chloride	< 5	5.	ug/l	80	72	63-120	10	30
Xylene (Total)	< 5	5.	ug/l	107	95	77-120	12	30
Batch number: Y130632AA	Sample number(s): 6965201-6965205							
Acetone	< 20	20.	ug/l	75		49-234		
Acrolein	< 100	100.	ug/l	71		46-146		
Acrylonitrile	< 20	20.	ug/l	77		61-130		
t-Amyl methyl ether	< 5	5.	ug/l	90		66-120		
Benzene	< 5	5.	ug/l	104		77-121		
Bromodichloromethane	< 5	5.	ug/l	92		73-120		
Bromoform	< 5	5.	ug/l	72		61-120		
Bromomethane	< 5	5.	ug/l	61		51-120		
2-Butanone	< 10	10.	ug/l	84		57-141		
t-Butyl alcohol	< 80	80.	ug/l	89		75-120		
n-Butylbenzene	< 5	5.	ug/l	98		73-130		
sec-Butylbenzene	< 5	5.	ug/l	100		74-124		
Carbon Tetrachloride	< 5	5.	ug/l	94		65-137		
Chlorobenzene	< 5	5.	ug/l	99		80-120		
Chloroethane	< 5	5.	ug/l	59*		60-120		
2-Chloroethyl Vinyl Ether	< 10	10.	ug/l	95		52-127		
Chloroform	< 5	5.	ug/l	96		77-122		
Chloromethane	< 5	5.	ug/l	90		54-123		
Dibromochloromethane	< 5	5.	ug/l	88		72-120		
1,2-Dichlorobenzene	< 5	5.	ug/l	101		80-120		
1,3-Dichlorobenzene	< 5	5.	ug/l	96		80-120		
1,4-Dichlorobenzene	< 5	5.	ug/l	99		80-120		
1,1-Dichloroethane	< 5	5.	ug/l	106		79-120		
1,2-Dichloroethane	< 5	5.	ug/l	102		64-130		
1,1-Dichloroethene	< 5	5.	ug/l	97		76-124		
cis-1,2-Dichloroethene	< 5	5.	ug/l	104		80-120		
trans-1,2-Dichloroethene	< 5	5.	ug/l	98		80-120		
1,2-Dichloropropane	< 5	5.	ug/l	103		80-120		
cis-1,3-Dichloropropene	< 5	5.	ug/l	101		78-120		
trans-1,3-Dichloropropene	< 5	5.	ug/l	80		66-124		
Ethyl t-butyl ether	< 5	5.	ug/l	95		66-120		
Ethylbenzene	< 5	5.	ug/l	98		79-120		
di-Isopropyl ether	< 5	5.	ug/l	100		65-120		
Isopropylbenzene	< 5	5.	ug/l	98		77-120		
p-Isopropyltoluene	< 5	5.	ug/l	101		77-121		
Methyl Tertiary Butyl Ether	< 5	5.	ug/l	94		68-121		
Methylene Chloride	< 5	5.	ug/l	97		84-118		
Naphthalene	< 5	5.	ug/l	82		47-126		
n-Propylbenzene	< 5	5.	ug/l	101		77-130		
1,1,2,2-Tetrachloroethane	< 5	5.	ug/l	91		70-129		
Tetrachloroethene	< 5	5.	ug/l	101		79-120		
Toluene	< 5	5.	ug/l	100		79-120		
1,1,1-Trichloroethane	< 5	5.	ug/l	112		66-126		
1,1,2-Trichloroethane	< 5	5.	ug/l	98		80-120		
Trichloroethene	< 5	5.	ug/l	102		80-120		
Trichlorofluoromethane	< 5	5.	ug/l	79		65-130		
1,2,4-Trimethylbenzene	< 5	5.	ug/l	98		69-122		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1371554
Reported: 03/07/13 at 05:48 PM

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,3,5-Trimethylbenzene	< 5	5.	ug/l	100		68-124		
Vinyl Chloride	< 5	5.	ug/l	85		63-120		
Xylene (Total)	< 5	5.	ug/l	98		77-120		
Batch number: Y130642AA	Sample number(s): 6965206-6965209							
Acetone	< 20	20.	ug/l	71		49-234		
Acrolein	< 100	100.	ug/l	79		46-146		
Acrylonitrile	< 20	20.	ug/l	74		61-130		
t-Amyl methyl ether	< 5	5.	ug/l	90		66-120		
Benzene	< 5	5.	ug/l	101		77-121		
Bromodichloromethane	< 5	5.	ug/l	89		73-120		
Bromoform	< 5	5.	ug/l	70		61-120		
Bromomethane	< 5	5.	ug/l	60		51-120		
2-Butanone	< 10	10.	ug/l	81		57-141		
t-Butyl alcohol	< 80	80.	ug/l	78		75-120		
n-Butylbenzene	< 5	5.	ug/l	97		73-130		
sec-Butylbenzene	< 5	5.	ug/l	98		74-124		
Carbon Tetrachloride	< 5	5.	ug/l	88		65-137		
Chlorobenzene	< 5	5.	ug/l	98		80-120		
Chloroethane	< 5	5.	ug/l	64		60-120		
2-Chloroethyl Vinyl Ether	< 10	10.	ug/l	95		52-127		
Chloroform	< 5	5.	ug/l	93		77-122		
Chloromethane	< 5	5.	ug/l	78		54-123		
Dibromochloromethane	< 5	5.	ug/l	88		72-120		
1,2-Dichlorobenzene	< 5	5.	ug/l	99		80-120		
1,3-Dichlorobenzene	< 5	5.	ug/l	94		80-120		
1,4-Dichlorobenzene	< 5	5.	ug/l	97		80-120		
1,1-Dichloroethane	< 5	5.	ug/l	104		79-120		
1,2-Dichloroethane	< 5	5.	ug/l	100		64-130		
1,1-Dichloroethene	< 5	5.	ug/l	91		76-124		
cis-1,2-Dichloroethene	< 5	5.	ug/l	102		80-120		
trans-1,2-Dichloroethene	< 5	5.	ug/l	94		80-120		
1,2-Dichloropropane	< 5	5.	ug/l	102		80-120		
cis-1,3-Dichloropropene	< 5	5.	ug/l	100		78-120		
trans-1,3-Dichloropropene	< 5	5.	ug/l	81		66-124		
Ethyl t-butyl ether	< 5	5.	ug/l	96		66-120		
Ethylbenzene	< 5	5.	ug/l	97		79-120		
di-Isopropyl ether	< 5	5.	ug/l	103		65-120		
Isopropylbenzene	< 5	5.	ug/l	97		77-120		
p-Isopropyltoluene	< 5	5.	ug/l	99		77-121		
Methyl Tertiary Butyl Ether	< 5	5.	ug/l	92		68-121		
Methylene Chloride	< 5	5.	ug/l	94		84-118		
Naphthalene	< 5	5.	ug/l	80		47-126		
n-Propylbenzene	< 5	5.	ug/l	100		77-130		
1,1,2,2-Tetrachloroethane	< 5	5.	ug/l	91		70-129		
Tetrachloroethene	< 5	5.	ug/l	98		79-120		
Toluene	< 5	5.	ug/l	99		79-120		
1,1,1-Trichloroethane	< 5	5.	ug/l	91		66-126		
1,1,2-Trichloroethane	< 5	5.	ug/l	97		80-120		
Trichloroethene	< 5	5.	ug/l	99		80-120		
Trichlorofluoromethane	< 5	5.	ug/l	71		65-130		
1,2,4-Trimethylbenzene	< 5	5.	ug/l	97		69-122		
1,3,5-Trimethylbenzene	< 5	5.	ug/l	98		68-124		
Vinyl Chloride	< 5	5.	ug/l	79		63-120		
Xylene (Total)	< 5	5.	ug/l	97		77-120		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1371554
Reported: 03/07/13 at 05:48 PM

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: Y130651AA	Sample number(s): 6965210,6965212-6965219							
Acetone	< 20	20.	ug/l	88	82	49-234	8	30
Acrolein	< 100	100.	ug/l	77	80	46-146	4	30
Acrylonitrile	< 20	20.	ug/l	79	73	61-130	7	30
t-Amyl methyl ether	< 5	5.	ug/l	90	90	66-120	0	30
Benzene	< 5	5.	ug/l	101	104	77-121	3	30
Bromodichloromethane	< 5	5.	ug/l	88	89	73-120	1	30
Bromoform	< 5	5.	ug/l	70	69	61-120	2	30
Bromomethane	< 5	5.	ug/l	60	63	51-120	5	30
2-Butanone	< 10	10.	ug/l	91	85	57-141	7	30
t-Butyl alcohol	< 80	80.	ug/l	86	88	75-120	2	30
n-Butylbenzene	< 5	5.	ug/l	99	99	73-130	1	30
sec-Butylbenzene	< 5	5.	ug/l	99	101	74-124	3	30
Carbon Tetrachloride	< 5	5.	ug/l	90	93	65-137	3	30
Chlorobenzene	< 5	5.	ug/l	97	100	80-120	3	30
Chloroethane	< 5	5.	ug/l	61	65	60-120	6	30
2-Chloroethyl Vinyl Ether	< 10	10.	ug/l	97	93	52-127	4	30
Chloroform	< 5	5.	ug/l	93	96	77-122	3	30
Chloromethane	< 5	5.	ug/l	90	93	54-123	3	30
Dibromochloromethane	< 5	5.	ug/l	86	86	72-120	0	30
1,2-Dichlorobenzene	< 5	5.	ug/l	100	100	80-120	0	30
1,3-Dichlorobenzene	< 5	5.	ug/l	96	96	80-120	1	30
1,4-Dichlorobenzene	< 5	5.	ug/l	98	98	80-120	1	30
1,1-Dichloroethane	< 5	5.	ug/l	103	105	79-120	2	30
1,2-Dichloroethane	< 5	5.	ug/l	101	101	64-130	0	30
1,1-Dichloroethene	< 5	5.	ug/l	93	98	76-124	5	30
cis-1,2-Dichloroethene	< 5	5.	ug/l	101	103	80-120	2	30
trans-1,2-Dichloroethene	< 5	5.	ug/l	94	97	80-120	3	30
1,2-Dichloropropane	< 5	5.	ug/l	100	103	80-120	2	30
cis-1,3-Dichloropropene	< 5	5.	ug/l	99	101	78-120	1	30
trans-1,3-Dichloropropene	< 5	5.	ug/l	79	81	66-124	3	30
Ethyl t-butyl ether	< 5	5.	ug/l	95	96	66-120	1	30
Ethylbenzene	< 5	5.	ug/l	95	99	79-120	4	30
di-Isopropyl ether	< 5	5.	ug/l	100	102	65-120	2	30
Isopropylbenzene	< 5	5.	ug/l	96	99	77-120	3	30
p-Isopropyltoluene	< 5	5.	ug/l	99	101	77-121	1	30
Methyl Tertiary Butyl Ether	< 5	5.	ug/l	94	92	68-121	1	30
Methylene Chloride	< 5	5.	ug/l	94	95	84-118	1	30
Naphthalene	< 5	5.	ug/l	82	80	47-126	2	30
n-Propylbenzene	< 5	5.	ug/l	99	103	77-130	3	30
1,1,2,2-Tetrachloroethane	< 5	5.	ug/l	92	89	70-129	3	30
Tetrachloroethene	< 5	5.	ug/l	97	103	79-120	6	30
Toluene	< 5	5.	ug/l	97	100	79-120	4	30
1,1,1-Trichloroethane	< 5	5.	ug/l	92	96	66-126	3	30
1,1,2-Trichloroethane	< 5	5.	ug/l	96	97	80-120	2	30
Trichloroethene	< 5	5.	ug/l	98	102	80-120	4	30
Trichlorofluoromethane	< 5	5.	ug/l	81	85	65-130	5	30
1,2,4-Trimethylbenzene	< 5	5.	ug/l	97	98	69-122	1	30
1,3,5-Trimethylbenzene	< 5	5.	ug/l	97	100	68-124	2	30
Vinyl Chloride	< 5	5.	ug/l	84	87	63-120	3	30
Xylene (Total)	< 5	5.	ug/l	96	99	77-120	3	30
Batch number: 13058A07A	Sample number(s): 6965201-6965202,6965204-6965219							
TPH-GRO water C6-C10	< 0.050	0.050	mg/l	95	96	75-135	1	30
Batch number: 13059B07A	Sample number(s): 6965203							

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder
Reported: 03/07/13 at 05:48 PM

Group Number: 1371554

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
TPH-GRO water C6-C10	< 0.050	0.050	mg/l	102	103	75-135	1	30

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: Y130632AA	Sample number(s): 6965201-6965205 UNSPK: P967697								
Acetone	85	84	33-159	2	30				
Acrolein	58	60	33-147	2	30				
Acrylonitrile	66	66	43-146	0	30				
t-Amyl methyl ether	89	90	65-117	1	30				
Benzene	110	110	72-134	1	30				
Bromodichloromethane	93	92	78-125	1	30				
Bromoform	63	60	48-118	6	30				
Bromomethane	72	71	47-129	1	30				
2-Butanone	79	78	57-138	1	30				
t-Butyl alcohol	88	87	67-119	1	30				
n-Butylbenzene	106	105	59-156	0	30				
sec-Butylbenzene	108	108	79-125	0	30				
Carbon Tetrachloride	106	105	72-135	1	30				
Chlorobenzene	105	104	87-124	1	30				
Chloroethane	73	73	51-145	0	30				
2-Chloroethyl Vinyl Ether	0*	0*	10-151	0	30				
Chloroform	102	101	81-134	1	30				
Chloromethane	91	91	46-137	0	30				
Dibromochloromethane	81	83	74-116	2	30				
1,2-Dichlorobenzene	105	103	84-119	2	30				
1,3-Dichlorobenzene	102	101	86-121	1	30				
1,4-Dichlorobenzene	103	101	85-121	2	30				
1,1-Dichloroethane	112	111	84-129	0	30				
1,2-Dichloroethane	107	105	68-131	2	30				
1,1-Dichloroethene	111	110	75-155	1	30				
cis-1,2-Dichloroethene	111	111	80-141	0	30				
trans-1,2-Dichloroethene	105	104	81-142	1	30				
1,2-Dichloropropane	106	106	83-124	0	30				
cis-1,3-Dichloropropene	96	97	70-116	1	30				
trans-1,3-Dichloropropene	74	76	74-119	3	30				
Ethyl t-butyl ether	94	95	74-122	1	30				
Ethylbenzene	104	104	71-134	0	30				
di-Isopropyl ether	103	103	70-129	0	30				
Isopropylbenzene	102	105	75-128	2	30				
p-Isopropyltoluene	108	107	76-123	1	30				
Methyl Tertiary Butyl Ether	93	93	72-126	0	30				
Methylene Chloride	101	101	78-133	1	30				
Naphthalene	81	80	52-125	1	30				
n-Propylbenzene	107	107	74-134	1	30				
1,1,2,2-Tetrachloroethane	91	89	72-128	2	30				
Tetrachloroethene	108	109	80-128	1	30				
Toluene	103	106	80-125	3	30				
1,1,1-Trichloroethane	105	105	69-140	0	30				

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1371554
Reported: 03/07/13 at 05:48 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,1,2-Trichloroethane	97	97	71-141	1	30				
Trichloroethene	112	109	88-133	2	30				
Trichlorofluoromethane	101	98	64-146	3	30				
1,2,4-Trimethylbenzene	103	102	72-130	1	30				
1,3,5-Trimethylbenzene	106	105	65-132	0	30				
Vinyl Chloride	93	93	66-133	0	30				
Xylene (Total)	102	103	79-125	2	30				
Batch number: Y130642AA	Sample number(s): 6965206-6965209 UNSPK: P967833								
Acetone	74	68	33-159	7	30				
Acrolein	58	57	33-147	2	30				
Acrylonitrile	68	64	43-146	7	30				
t-Amyl methyl ether	90	89	65-117	1	30				
Benzene	113	109	72-134	3	30				
Bromodichloromethane	92	90	78-125	2	30				
Bromoform	61	58	48-118	5	30				
Bromomethane	68	67	47-129	2	30				
2-Butanone	80	79	57-138	1	30				
t-Butyl alcohol	89	88	67-119	1	30				
n-Butylbenzene	108	104	59-156	4	30				
sec-Butylbenzene	111	108	79-125	3	30				
Carbon Tetrachloride	104	101	72-135	3	30				
Chlorobenzene	106	104	87-124	2	30				
Chloroethane	70	68	51-145	4	30				
2-Chloroethyl Vinyl Ether	0*	0*	10-151	0	30				
Chloroform	103	100	81-134	3	30				
Chloromethane	85	82	46-137	3	30				
Dibromochloromethane	84	81	74-116	4	30				
1,2-Dichlorobenzene	106	103	84-119	3	30				
1,3-Dichlorobenzene	103	99	86-121	4	30				
1,4-Dichlorobenzene	104	101	85-121	3	30				
1,1-Dichloroethane	116	113	84-129	3	30				
1,2-Dichloroethane	108	102	68-131	5	30				
1,1-Dichloroethene	106	104	75-155	2	30				
cis-1,2-Dichloroethene	114	106	80-141	6	30				
trans-1,2-Dichloroethene	104	102	81-142	2	30				
1,2-Dichloropropane	114	105	83-124	6	30				
cis-1,3-Dichloropropene	96	96	70-116	0	30				
trans-1,3-Dichloropropene	76	76	74-119	1	30				
Ethyl t-butyl ether	96	95	74-122	1	30				
Ethylbenzene	105	103	71-134	2	30				
di-Isopropyl ether	104	103	70-129	1	30				
Isopropylbenzene	106	104	75-128	2	30				
p-Isopropyltoluene	110	106	76-123	3	30				
Methyl Tertiary Butyl Ether	98	93	72-126	5	30				
Methylene Chloride	100	97	78-133	4	30				
Naphthalene	81	79	52-125	2	30				
n-Propylbenzene	109	106	74-134	3	30				
1,1,2,2-Tetrachloroethane	92	89	72-128	3	30				
Tetrachloroethene	110	108	80-128	2	30				
Toluene	107	106	80-125	2	30				
1,1,1-Trichloroethane	103	100	69-140	2	30				

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1371554
Reported: 03/07/13 at 05:48 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,1,2-Trichloroethane	100	99	71-141	2	30				
Trichloroethene	116	113	88-133	3	30				
Trichlorofluoromethane	96	93	64-146	3	30				
1,2,4-Trimethylbenzene	106	103	72-130	3	30				
1,3,5-Trimethylbenzene	107	104	65-132	3	30				
Vinyl Chloride	90	88	66-133	3	30				
Xylene (Total)	106	103	79-125	3	30				
Batch number: 13059B07A	Sample number(s): 6965203 UNSPK: P966663								
TPH-GRO water C6-C10	135	149*	75-135	8	30				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260 VOCs
Batch number: W130601AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6965211	102	103	96	95
Blank	106	104	94	94
LCS	108	105	95	97
LCSD	107	101	95	98
Limits:	80-116	77-113	80-113	78-113

Analysis Name: 8260 VOCs
Batch number: Y130632AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6965201	95	101	100	96
6965202	97	101	99	96
6965203	99	102	99	96
6965204	99	102	99	96
6965205	97	101	98	95
Blank	99	101	99	96
LCS	99	102	101	100
MS	99	105	98	97
MSD	99	100	100	99
Limits:	80-116	77-113	80-113	78-113

Analysis Name: 8260 VOCs
Batch number: Y130642AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6965206	95	99	100	98
6965207	98	100	100	97

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder
Reported: 03/07/13 at 05:48 PM

Group Number: 1371554

Surrogate Quality Control

6965208	97	102	100	97
6965209	96	101	99	96
Blank	96	101	101	97
LCS	97	103	102	100
MS	99	104	100	99
MSD	97	103	101	99
Limits:	80-116	77-113	80-113	78-113

Analysis Name: 8260 VOCs
Batch number: Y130651AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6965210	98	101	99	93
6965212	98	101	99	95
6965213	100	103	98	94
6965214	100	102	98	94
6965215	98	101	99	95
6965216	99	102	98	96
6965217	100	102	98	94
6965218	100	102	97	94
6965219	100	102	97	93
Blank	98	102	100	95
LCS	97	104	100	99
LCSD	97	104	101	99
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TPH-GRO water C6-C10
Batch number: 13058A07A

	Trifluorotoluene-F
6965201	88
6965202	88
6965204	88
6965205	85
6965206	90
6965207	87
6965208	85
6965209	97
6965210	80
6965211	87
6965212	86
6965213	83
6965214	86
6965215	83
6965216	88
6965217	86
6965218	90
6965219	84
Blank	79
LCS	91
LCSD	91
Limits:	63-135

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder
Reported: 03/07/13 at 05:48 PM

Group Number: 1371554

Surrogate Quality Control

Analysis Name: TPH-GRO water C6-C10
Batch number: 13059B07A

	Trifluorotoluene-F
6965203	87
Blank	90
LCS	99
LCSD	100
MS	125
MSD	124
Limits:	63-135

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Lancaster Laboratories

Analysis Request/Environmental Services Chain of Custody

For Lancaster Laboratories use only Acct. #: 121523

Group #: 1371554 Sample #: 696520 1-19

Client:	Fairfax Petroleum	Acct. #:	
Project Name/#:	26140/ Great Falls	PWSID #:	
Project Address:	9901 Georgetown Pike Great Falls, VA		
Project Manager:	Don Trego	P.O. #:	08531-117575
Sampler:	Travis Dugstad	Quote #:	
Name of State where samples were collected:	Virginia		

For Lab Use Only
FSC:
SCR#:

Preservation Codes: H=HCl T=Thiosulfate N=HNO3 B=NaOH S=H2SO4 O=Other

Sample Identification	Date Collected (2013)	Time Collected	Grab	Composite	Soil	Water (Potable / NPDES)	Other	Total # of Containers	~~BTEX, MTBE 8260~~	TPH-GRO 8015	Full List VOCs 8260	Remarks	Temperature of samples upon receipt (if requested)
MW-1	2/25	1057	X			X		6		X	X		
MW-2	2/25	0910	X			X		6		X	X		
~~MW-3~~												TD	
MW-5	2/25	0813	X			X		6		X	X		
MW-6S	2/25	1224	X			X		6		X	X		
~~MW-6D (65 ft)~~												TD	
~~MW-6D (85 ft)~~												TD	
~~MW-6D (105 ft)~~												TD	
MW-7	2/25	1045	X			X		6		X	X		
MW-8	2/25	0930	X			X		6		X	X		

Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	2/25/13	1345	[signature]	2/26/13	13:00
[signature]	2/26/13	17:00			
			[signature]	2/26/13	1730

Data Package Options (please circle if required)
Type I (validation/NJ reg) TX-TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

SDG Complete? Yes No

State-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicated QC sample and submit triplicate volume)
Internal COC required? Yes No

Lancaster Laboratories

Analysis Request/Environmental Services Chain of Custody

For Lancaster Laboratories use only Acct. #: 12152 (3)

Group #: 1371554 Sample #: 696520 1-19

Client:	Fairfax Petroleum	Acct. #:	
Project Name/#:	26140/ Great Falls	PWSID #:	
Project Address:	9901 Georgetown Pike Great Falls, VA		
Project Manager:	Don Trego	P.O. #:	08531-117575
Sampler:	Travis Dugstad	Quote #:	
Name of State where samples were collected:	Virginia		

For Lab Use Only
FSC:
SCR#:

Preservation Codes: H=HCl T=Thiosulfate N=HNO3 B=NaOH S=H2SO4 O=Other

Sample Identification	Date Collected (2013)	Time Collected	Grab	Composite	Soil	Potable	NPDES	Water	Other	Total # of Containers	~~BTEX, MTBE 8260~~	TPH-GRO 8015	Full List VOCs 8260	Remarks	Temperature of samples upon receipt (if requested)
MW-9	2/25	0837	X					X		6		X	X		
MW-10	2/25	0735	X					X		6		X	X		
MW-11	2/25	1133	X					X		6		X	X		
~~MW-12 (110ft)~~														TD	
~~MW-12 (153ft)~~														TD	
~~PW-01 (65ft)~~														TD	
MW-13	2/25	1003	X					X		6		X	X		
MW-14	2/25	1023	X					X		6		X			
MW-15	2/25	1158	X					X		6		X	X		
~~MW-16D (95ft)~~														TD	

Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

Relinquished by:	Date	Time	Received by:	Date	Time
Travis Dugstad	2/25/13	1345	[illegible]	2/26/13	1320
[illegible]	2/26/13	1720			
			[illegible]	2/26/13	1730

Data Package Options (please circle if required)
Type I (validation/NJ reg) TX-TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

SDG Complete? Yes No

State-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicated QC sample and submit triplicate volume)
Internal COC required? Yes No

Lancaster Laboratories, Inc. 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 717-656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client

Lancaster Laboratories

Analysis Request/Environmental Services Chain of Custody

For Lancaster Laboratories use only Acct. #: 121526 (1)
Group #: _____ Sample #: _____

1371554 696520 1-19.

Client:	Fairfax Petroleum	Acct. #:	
Project Name/#:	~~20095~~ 26140	PWSID #:	
Project Manager:	Don Trego	P.O. #:	51141-248470
Sampler:	Charlie Low	Quote #:	
Name of State where samples were collected:	Virginia		

For Lab Use Only
FSC: _____
SCR#: _____

Preservation Codes: H=HCl T=Thiosulfate N=HNO3 B=NaOH S=H2SO4 O=Other

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (Potable / NPDES)	Matrix: Other	Total # of Containers	Full List VOCs - 8260	TPH-GRO 8015	Remarks	Temperature of samples upon receipt (if requested)
MW-6D (105)	2-25-13	0855	X			X		6	X	X		
MW-12 (153)		1525	X			X		6	X	X		
MW-16D (95)		1230	X			X		6	X	X		
PW-1 (65)		1130	X			X		6	X	X		
MW-6D (85)		0935	X			X		6	X	X		
MW-6D (65)		1015	X			X		6	X	X		
MW-12 (110)		1600	X			X		6	X	X		

Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: _____
Rush results requested by (please circle): Phone Fax E-mail
Phone #: _____ Fax #: _____
E-mail address:

Data Package Options (please circle if required)
Type I (validation/NJ reg) TX-TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

SDG Complete? Yes No

State-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicated QC sample and submit triplecate volume)
Internal COC required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	2-25-13	1830	Sample Room	2-25-13	1830
Sample Room	2/26/13	13:00	[signature]	2/26/13	13:00
[signature]	2/26/13	17:30			
			[signature]	2/26/13	17:30

Lancaster Laboratories, Inc. 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 717-656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client

4886.01

Natalie R. Luciano

From: Mark Steele [MCSteele@kleinfelder.com]
Sent: Wednesday, February 27, 2013 4:14 PM
To: Natalie R. Luciano
Cc: Charles Low; Don Trego
Subject: FW: 1371554-Fairfax 26140-02/26/2013 17:30:00 Acknowledgement

Attachments: 1371554c.pdf; 1371554d.pdf; EAcknow_1371554.xls

1371554c.pdf (266 KB) 1371554d.pdf (47 KB) EAcknow_1371554.xls (130 KB)

Natalie - MW-14 should also be run for 8260 VOCs. The COC mistakenly did not have that box checked.

From: Lancaster Laboratories Automated Acknowledgements [LAutomatedAcknowledgements@lancasterlabs.com]
Sent: Wednesday, February 27, 2013 3:36 PM
To: Mark Steele; Angela Vogt; Don Trego
Subject: 1371554-Fairfax 26140-02/26/2013 17:30:00 Acknowledgement

The following is an acknowledgement of the receipt of samples by Lancaster Laboratories. Please review this acknowledgement and contact your Client Service Representative if you have concerns.

This is an automated message from an unmonitored address. Please do not reply to this address.

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions, and Lancaster hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:	Prepared for:
Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster, PA 17601	Kleinfelder 1 Speen Street Framingham MA 01701

May 13, 2013

Project: Fairfax 26140

Submittal Date: 05/10/2013
Group Number: 1389140
PO Number: 51141-248470
State of Sample Origin: VA

Client Sample Description	Lancaster Labs (LLI) #
MW-18D (1V) Grab Water	7052453
MW-18D (3V) Grab Water	7052454
Trip Blank Water	7052455

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Kleinfelder	Attn: Mark Steele
ELECTRONIC COPY TO	Kleinfelder	Attn: Angela Vogt
ELECTRONIC COPY TO	Kleinfelder	Attn: Venelda Williams
ELECTRONIC COPY TO	Kleinfelder	Attn: Don Trego
ELECTRONIC COPY TO	Kleinfelder	Attn: Charlie Low

Respectfully Submitted,

Natalie R. Luciano
Senior Specialist

(717) 556-7258

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: MW-18D (1V) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7052453
LLI Group # 1389140
Account # 12152

Project Name: Fairfax 26140

Collected: 05/10/2013 09:30 by CL

Submitted: 05/10/2013 15:55
Reported: 05/13/2013 16:06

Kleinfelder
1 Speen Street
Framingham MA 01701

18D1V

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	t-Amyl methyl ether	994-05-8	< 5	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	t-Butyl alcohol	75-65-0	< 80	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	**cis-1,2-Dichloroethene**	156-59-2	**13**	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	di-Isopropyl ether	108-20-3	< 5	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	< 5	5	1
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	Tetrachloroethene	127-18-4	< 5	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1
10335	Vinyl Chloride	75-01-4	< 5	5	1

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Analysis Report

Sample Description: MW-18D (1V) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7052453
LLI Group # 1389140
Account # 12152

Project Name: Fairfax 26140

Collected: 05/10/2013 09:30 by CL

Submitted: 05/10/2013 15:55
Reported: 05/13/2013 16:06

Kleinfelder
1 Speen Street
Framingham MA 01701

18D1V

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	< 5	5	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N131321AA	05/12/2013 19:43	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131321AA	05/12/2013 19:43	Sarah A Guill	1

Sample Description: MW-18D (3V) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7052454
LLI Group # 1389140
Account # 12152

Project Name: Fairfax 26140

Collected: 05/10/2013 11:00 by CL

Submitted: 05/10/2013 15:55
Reported: 05/13/2013 16:06

Kleinfelder
1 Speen Street
Framingham MA 01701

18D3V

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	t-Amyl methyl ether	994-05-8	< 5	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	t-Butyl alcohol	75-65-0	< 80	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	**cis-1,2-Dichloroethene**	156-59-2	**14**	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	di-Isopropyl ether	108-20-3	< 5	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	< 5	5	1
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	Tetrachloroethene	127-18-4	< 5	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1
10335	Vinyl Chloride	75-01-4	< 5	5	1

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Analysis Report

Sample Description: MW-18D (3V) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7052454
LLI Group # 1389140
Account # 12152

Project Name: Fairfax 26140

Collected: 05/10/2013 11:00 by CL

Submitted: 05/10/2013 15:55
Reported: 05/13/2013 16:06

Kleinfelder
1 Speen Street
Framingham MA 01701

18D3V

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	< 5	5	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N131321AA	05/12/2013 20:06	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131321AA	05/12/2013 20:06	Sarah A Guill	1

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Analysis Report

Sample Description: Trip Blank Water
Fairfax Petroleum 26140

LLI Sample # WW 7052455
LLI Group # 1389140
Account # 12152

Project Name: Fairfax 26140

Collected: 05/10/2013

Submitted: 05/10/2013 15:55
Reported: 05/13/2013 16:06

Kleinfelder
1 Speen Street
Framingham MA 01701

TB18D

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	t-Amyl methyl ether	994-05-8	< 5	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	t-Butyl alcohol	75-65-0	< 80	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	cis-1,2-Dichloroethene	156-59-2	< 5	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	di-Isopropyl ether	108-20-3	< 5	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	< 5	5	1
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	Tetrachloroethene	127-18-4	< 5	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1
10335	Vinyl Chloride	75-01-4	< 5	5	1

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Analysis Report

Sample Description: Trip Blank Water
Fairfax Petroleum 26140

LLI Sample # WW 7052455
LLI Group # 1389140
Account # 12152

Project Name: Fairfax 26140

Collected: 05/10/2013

Submitted: 05/10/2013 15:55
Reported: 05/13/2013 16:06

Kleinfelder
1 Speen Street
Framingham MA 01701

TB18D

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	< 5	5	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N131321AA	05/12/2013 20:30	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131321AA	05/12/2013 20:30	Sarah A Guill	1

Quality Control Summary

Client Name: Kleinfelder Group Number: 1389140
Reported: 05/13/13 at 04:06 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: N131321AA	Sample number(s): 7052453-7052455							
Acetone	< 20	20.	ug/l	81		35-181		
Acrolein	< 100	100.	ug/l	110		46-146		
Acrylonitrile	< 20	20.	ug/l	81		61-130		
t-Amyl methyl ether	< 5	5.	ug/l	94		66-120		
Benzene	< 5	5.	ug/l	96		77-121		
Bromodichloromethane	< 5	5.	ug/l	94		73-120		
Bromoform	< 5	5.	ug/l	102		61-120		
Bromomethane	< 5	5.	ug/l	83		51-120		
2-Butanone	< 10	10.	ug/l	77		57-141		
t-Butyl alcohol	< 80	80.	ug/l	100		75-120		
n-Butylbenzene	< 5	5.	ug/l	79		73-130		
sec-Butylbenzene	< 5	5.	ug/l	83		74-124		
Carbon Tetrachloride	< 5	5.	ug/l	99		65-137		
Chlorobenzene	< 5	5.	ug/l	103		80-120		
Chloroethane	< 5	5.	ug/l	86		60-120		
2-Chloroethyl Vinyl Ether	< 10	10.	ug/l	72		52-127		
Chloroform	< 5	5.	ug/l	98		77-122		
Chloromethane	< 5	5.	ug/l	77		54-123		
Dibromochloromethane	< 5	5.	ug/l	104		72-120		
1,2-Dichlorobenzene	< 5	5.	ug/l	95		80-120		
1,3-Dichlorobenzene	< 5	5.	ug/l	95		80-120		
1,4-Dichlorobenzene	< 5	5.	ug/l	94		80-120		
1,1-Dichloroethane	< 5	5.	ug/l	95		79-120		
1,2-Dichloroethane	< 5	5.	ug/l	93		64-130		
1,1-Dichloroethene	< 5	5.	ug/l	104		76-124		
cis-1,2-Dichloroethene	< 5	5.	ug/l	100		80-120		
trans-1,2-Dichloroethene	< 5	5.	ug/l	103		80-120		
1,2-Dichloropropane	< 5	5.	ug/l	95		80-120		
cis-1,3-Dichloropropene	< 5	5.	ug/l	100		78-120		
trans-1,3-Dichloropropene	< 5	5.	ug/l	94		66-124		
Ethyl t-butyl ether	< 5	5.	ug/l	92		66-120		
Ethylbenzene	< 5	5.	ug/l	95		79-120		
di-Isopropyl ether	< 5	5.	ug/l	87		65-120		
Isopropylbenzene	< 5	5.	ug/l	96		77-120		
p-Isopropyltoluene	< 5	5.	ug/l	85		77-121		
Methyl Tertiary Butyl Ether	< 5	5.	ug/l	95		68-121		
Methylene Chloride	< 5	5.	ug/l	103		84-118		
Naphthalene	< 5	5.	ug/l	59		47-126		
n-Propylbenzene	< 5	5.	ug/l	87		77-130		
1,1,2,2-Tetrachloroethane	< 5	5.	ug/l	86		70-129		
Tetrachloroethene	< 5	5.	ug/l	104		79-120		
Toluene	< 5	5.	ug/l	100		79-120		
1,1,1-Trichloroethane	< 5	5.	ug/l	101		66-126		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder
Reported: 05/13/13 at 04:06 PM

Group Number: 1389140

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1,2-Trichloroethane	< 5	5.	ug/l	98		80-120		
Trichloroethene	< 5	5.	ug/l	97		80-120		
Trichlorofluoromethane	< 5	5.	ug/l	82		65-130		
1,2,4-Trimethylbenzene	< 5	5.	ug/l	88		69-122		
1,3,5-Trimethylbenzene	< 5	5.	ug/l	89		68-124		
Vinyl Chloride	< 5	5.	ug/l	86		63-120		
Xylene (Total)	< 5	5.	ug/l	100		77-120		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: N131321AA	Sample number(s): 7052453-7052455 UNSPK: P044725								
Acetone	77	79	33-159	2	30				
Acrolein	108	105	33-147	2	30				
Acrylonitrile	76	79	43-146	3	30				
t-Amyl methyl ether	90	94	65-117	5	30				
Benzene	98	100	72-134	2	30				
Bromodichloromethane	93	97	78-125	4	30				
Bromoform	99	99	48-118	0	30				
Bromomethane	88	91	47-129	3	30				
2-Butanone	72	74	57-138	3	30				
t-Butyl alcohol	92	94	67-119	2	30				
n-Butylbenzene	83	85	59-156	3	30				
sec-Butylbenzene	88	91	79-125	3	30				
Carbon Tetrachloride	109	111	72-135	2	30				
Chlorobenzene	104	105	87-124	1	30				
Chloroethane	92	95	51-145	3	30				
2-Chloroethyl Vinyl Ether	0*	0*	10-151	0	30				
Chloroform	100	102	81-134	1	30				
Chloromethane	83	86	46-137	3	30				
Dibromochloromethane	102	103	74-116	1	30				
1,2-Dichlorobenzene	94	96	84-119	2	30				
1,3-Dichlorobenzene	94	96	86-121	3	30				
1,4-Dichlorobenzene	92	94	85-121	2	30				
1,1-Dichloroethane	99	101	84-129	2	30				
1,2-Dichloroethane	94	97	68-131	3	30				
1,1-Dichloroethene	113	113	75-155	0	30				
cis-1,2-Dichloroethene	102	105	80-141	3	30				
trans-1,2-Dichloroethene	105	108	81-142	4	30				
1,2-Dichloropropane	95	99	83-124	4	30				
cis-1,3-Dichloropropene	97	101	70-116	4	30				
trans-1,3-Dichloropropene	91	93	74-119	2	30				
Ethyl t-butyl ether	88	91	74-122	4	30				
Ethylbenzene	98	100	71-134	2	30				
di-Isopropyl ether	85	87	70-129	2	30				
Isopropylbenzene	100	100	75-128	0	30				
p-Isopropyltoluene	88	89	76-123	2	30				
Methyl Tertiary Butyl Ether	91	93	72-126	3	30				
Methylene Chloride	102	104	78-133	2	30				

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1389140
Reported: 05/13/13 at 04:06 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Naphthalene	55	59	52-125	7	30				
n-Propylbenzene	89	91	74-134	2	30				
1,1,2,2-Tetrachloroethane	81	82	72-128	1	30				
Tetrachloroethene	111	113	80-128	1	30				
Toluene	102	103	80-125	1	30				
1,1,1-Trichloroethane	107	109	69-140	2	30				
1,1,2-Trichloroethane	96	98	71-141	2	30				
Trichloroethene	101	105	88-133	4	30				
Trichlorofluoromethane	103	105	64-146	2	30				
1,2,4-Trimethylbenzene	89	91	72-130	3	30				
1,3,5-Trimethylbenzene	90	92	65-132	2	30				
Vinyl Chloride	98	101	66-133	3	30				
Xylene (Total)	102	104	79-125	1	30				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260 VOCs
Batch number: N131321AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7052453	99	100	99	95
7052454	100	103	98	94
7052455	99	100	98	94
Blank	99	101	100	95
LCS	99	103	101	100
MS	99	99	102	100
MSD	100	100	101	100
Limits:	80-116	77-113	80-113	78-113

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Lancaster Laboratories

Analysis Request/Environmental Services Chain of Custody

For Lancaster Laboratories use only Acct. #: 12152

Group #: 1389140 Sample #: 7052453-55

Client:	Fairfax Petroleum	Acct. #:	
Project Name/#:	26140/ Great Falls	PWSID #:	
Project Address:	9901 Georgetown Pike Great Falls, VA		
Project Manager:	~~Dan Trego~~ Mark C. Steele	P.O. #:	51141-248470
Sampler:	Charlie Low	Quote #:	
Name of State where samples were collected:	Virginia		

For Lab Use Only

FSC:

SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO3 B=NaOH
S=H2SO4 O=Other

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water (Potable / NPDES)	Other	Total # of Containers	Full List VOCs + Oxy	~~TPH GRO 8015~~	Remarks	Temperature of samples upon receipt (if requested)
MW - 18D (1V)	5-10-13	0930	X			X		3	X			
MW-18D (3V)	5-10-13	1100	X			X		3	X			
Trip Blank						X		2	X			

Turnaround Time Requested (TAT) (please circle): Normal Rush

(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed: 24-Hour TAT

Rush results requested by (please circle): Phone Fax E-mail

Phone #: Fax #:

E-mail address: MCSteele@Kleinfelder.com, CLOW@kleinfelder.com

Relinquished by:	Date	Time	Received by:	Date	Time
Charlie Low	5-10-13	1400	~~FedEx~~		
			Sample Room	5-10-13	1400
	5/10/13	15:55			

WS 5/10/13 13:40

Data Package Options (please circle if required)

Type I (validation/NJ reg) TX-TRRP-13

Type II (Tier II) MA MCP CT RCP

Type III (Reduced NJ)

Type IV (CLP SOW)

Type VI (Raw Data Only)

SDG Complete? Yes No

State-specific QC (MS/MSD/Dup)? Yes No

(If yes, indicated QC sample and submit triplicate volume)

Internal COC required? Yes No

Lancaster Laboratories, Inc. 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 717-656-2300

Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions, and Lancaster hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:	Prepared for:
Eurofins Lancaster Laboratories 2425 New Holland Pike Lancaster, PA 17601	Kleinfelder 1 Speen Street Framingham MA 01701

June 13, 2013

Project: Fairfax 26140

Submittal Date: 06/05/2013
Group Number: 1394928
PO Number: 51141-258890
State of Sample Origin: VA

Client Sample Description	Lancaster Labs (LLI) #
MW-17D (77) Grab Water	7082668
MW-17D (93) Grab Water	7082669
MW-17D (120) Grab Water	7082670
MW-17D (146) Grab Water	7082671
Trip Blank Water	7082672

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Kleinfelder	Attn: Mark Steele
ELECTRONIC COPY TO	Kleinfelder	Attn: Angela Vogt
ELECTRONIC COPY TO	Kleinfelder	Attn: Venelda Williams
ELECTRONIC COPY TO	Kleinfelder	Attn: Don Trego
ELECTRONIC COPY TO	Kleinfelder	Attn: Charlie Low

Respectfully Submitted,

Natalie R. Luciano
Senior Specialist

(717) 556-7258

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Analysis Report

Sample Description: MW-17D (77) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7082668
LLI Group # 1394928
Account # 12152

Project Name: Fairfax 26140

Collected: 06/05/2013 07:15 by SR

Submitted: 06/05/2013 15:15
Reported: 06/13/2013 19:25

Kleinfelder
1 Speen Street
Framingham MA 01701

FXP01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 100	100	5
10335	Acrolein	107-02-8	< 500	500	5
10335	Acrylonitrile	107-13-1	< 100	100	5
10335	**t-Amyl methyl ether**	994-05-8	**100**	25	5
10335	Benzene	71-43-2	< 25	25	5
10335	Bromodichloromethane	75-27-4	< 25	25	5
10335	Bromoform	75-25-2	< 25	25	5
10335	Bromomethane	74-83-9	< 25	25	5
10335	2-Butanone	78-93-3	< 50	50	5
10335	**t-Butyl alcohol**	75-65-0	**1,800**	400	5
10335	n-Butylbenzene	104-51-8	< 25	25	5
10335	sec-Butylbenzene	135-98-8	< 25	25	5
10335	Carbon Tetrachloride	56-23-5	< 25	25	5
10335	Chlorobenzene	108-90-7	< 25	25	5
10335	Chloroethane	75-00-3	< 25	25	5
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 50	50	5
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 25	25	5
10335	Chloromethane	74-87-3	< 25	25	5
10335	Dibromochloromethane	124-48-1	< 25	25	5
10335	1,2-Dichlorobenzene	95-50-1	< 25	25	5
10335	1,3-Dichlorobenzene	541-73-1	< 25	25	5
10335	1,4-Dichlorobenzene	106-46-7	< 25	25	5
10335	1,1-Dichloroethane	75-34-3	< 25	25	5
10335	1,2-Dichloroethane	107-06-2	< 25	25	5
10335	1,1-Dichloroethene	75-35-4	< 25	25	5
10335	**cis-1,2-Dichloroethene**	156-59-2	**190**	25	5
10335	trans-1,2-Dichloroethene	156-60-5	< 25	25	5
10335	1,2-Dichloropropane	78-87-5	< 25	25	5
10335	cis-1,3-Dichloropropene	10061-01-5	< 25	25	5
10335	trans-1,3-Dichloropropene	10061-02-6	< 25	25	5
10335	Ethyl t-butyl ether	637-92-3	< 25	25	5
10335	Ethylbenzene	100-41-4	< 25	25	5
10335	**di-Isopropyl ether**	108-20-3	**120**	25	5
10335	Isopropylbenzene	98-82-8	< 25	25	5
10335	p-Isopropyltoluene	99-87-6	< 25	25	5
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**6,600**	250	50
10335	Methylene Chloride	75-09-2	< 25	25	5
10335	Naphthalene	91-20-3	< 25	25	5
10335	n-Propylbenzene	103-65-1	< 25	25	5
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 25	25	5
10335	Tetrachloroethene	127-18-4	< 25	25	5
10335	Toluene	108-88-3	< 25	25	5
10335	1,1,1-Trichloroethane	71-55-6	< 25	25	5
10335	1,1,2-Trichloroethane	79-00-5	< 25	25	5
10335	Trichloroethene	79-01-6	< 25	25	5
10335	Trichlorofluoromethane	75-69-4	< 25	25	5
10335	1,2,4-Trimethylbenzene	95-63-6	< 25	25	5

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Analysis Report

Sample Description: MW-17D (77) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7082668
LLI Group # 1394928
Account # 12152

Project Name: Fairfax 26140

Collected: 06/05/2013 07:15 by SR

Submitted: 06/05/2013 15:15
Reported: 06/13/2013 19:25

Kleinfelder
1 Speen Street
Framingham MA 01701

FXP01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 25	25	5
10335	Vinyl Chloride	75-01-4	< 25	25	5
10335	Xylene (Total)	1330-20-7	< 25	25	5

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N131621AA	06/11/2013 11:46	Linda C Pape	5
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N131621AA	06/11/2013 12:09	Linda C Pape	50
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131621AA	06/11/2013 11:46	Linda C Pape	5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	N131621AA	06/11/2013 12:09	Linda C Pape	50

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Analysis Report

Sample Description: MW-17D (93) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7082669
LLI Group # 1394928
Account # 12152

Project Name: Fairfax 26140

Collected: 06/05/2013 07:25 by SR

Submitted: 06/05/2013 15:15
Reported: 06/13/2013 19:25

Kleinfelder
1 Speen Street
Framingham MA 01701

FXP02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 100	100	5
10335	Acrolein	107-02-8	< 500	500	5
10335	Acrylonitrile	107-13-1	< 100	100	5
10335	**t-Amyl methyl ether**	994-05-8	**93**	25	5
10335	Benzene	71-43-2	< 25	25	5
10335	Bromodichloromethane	75-27-4	< 25	25	5
10335	Bromoform	75-25-2	< 25	25	5
10335	Bromomethane	74-83-9	< 25	25	5
10335	2-Butanone	78-93-3	< 50	50	5
10335	**t-Butyl alcohol**	75-65-0	**1,700**	400	5
10335	n-Butylbenzene	104-51-8	< 25	25	5
10335	sec-Butylbenzene	135-98-8	< 25	25	5
10335	Carbon Tetrachloride	56-23-5	< 25	25	5
10335	Chlorobenzene	108-90-7	< 25	25	5
10335	Chloroethane	75-00-3	< 25	25	5
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 50	50	5
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 25	25	5
10335	Chloromethane	74-87-3	< 25	25	5
10335	Dibromochloromethane	124-48-1	< 25	25	5
10335	1,2-Dichlorobenzene	95-50-1	< 25	25	5
10335	1,3-Dichlorobenzene	541-73-1	< 25	25	5
10335	1,4-Dichlorobenzene	106-46-7	< 25	25	5
10335	1,1-Dichloroethane	75-34-3	< 25	25	5
10335	1,2-Dichloroethane	107-06-2	< 25	25	5
10335	1,1-Dichloroethene	75-35-4	< 25	25	5
10335	**cis-1,2-Dichloroethene**	156-59-2	**180**	25	5
10335	trans-1,2-Dichloroethene	156-60-5	< 25	25	5
10335	1,2-Dichloropropane	78-87-5	< 25	25	5
10335	cis-1,3-Dichloropropene	10061-01-5	< 25	25	5
10335	trans-1,3-Dichloropropene	10061-02-6	< 25	25	5
10335	Ethyl t-butyl ether	637-92-3	< 25	25	5
10335	Ethylbenzene	100-41-4	< 25	25	5
10335	**di-Isopropyl ether**	108-20-3	**110**	25	5
10335	Isopropylbenzene	98-82-8	< 25	25	5
10335	p-Isopropyltoluene	99-87-6	< 25	25	5
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**6,300**	250	50
10335	Methylene Chloride	75-09-2	< 25	25	5
10335	Naphthalene	91-20-3	< 25	25	5
10335	n-Propylbenzene	103-65-1	< 25	25	5
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 25	25	5
10335	Tetrachloroethene	127-18-4	< 25	25	5
10335	Toluene	108-88-3	< 25	25	5
10335	1,1,1-Trichloroethane	71-55-6	< 25	25	5
10335	1,1,2-Trichloroethane	79-00-5	< 25	25	5
10335	Trichloroethene	79-01-6	< 25	25	5
10335	Trichlorofluoromethane	75-69-4	< 25	25	5
10335	1,2,4-Trimethylbenzene	95-63-6	< 25	25	5

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Analysis Report

Sample Description: MW-17D (93) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7082669
LLI Group # 1394928
Account # 12152

Project Name: Fairfax 26140

Collected: 06/05/2013 07:25 by SR

Submitted: 06/05/2013 15:15
Reported: 06/13/2013 19:25

Kleinfelder
1 Speen Street
Framingham MA 01701

FXP02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 25	25	5
10335	Vinyl Chloride	75-01-4	< 25	25	5
10335	Xylene (Total)	1330-20-7	< 25	25	5

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N131621AA	06/11/2013 12:33	Linda C Pape	5
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N131621AA	06/11/2013 12:56	Linda C Pape	50
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131621AA	06/11/2013 12:33	Linda C Pape	5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	N131621AA	06/11/2013 12:56	Linda C Pape	50

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Analysis Report

Sample Description: MW-17D (120) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7082670
LLI Group # 1394928
Account # 12152

Project Name: Fairfax 26140

Collected: 06/05/2013 07:40 by SR

Submitted: 06/05/2013 15:15
Reported: 06/13/2013 19:25

Kleinfelder
1 Speen Street
Framingham MA 01701

FXP03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 100	100	5
10335	Acrolein	107-02-8	< 500	500	5
10335	Acrylonitrile	107-13-1	< 100	100	5
10335	**t-Amyl methyl ether**	994-05-8	**100**	25	5
10335	Benzene	71-43-2	< 25	25	5
10335	Bromodichloromethane	75-27-4	< 25	25	5
10335	Bromoform	75-25-2	< 25	25	5
10335	Bromomethane	74-83-9	< 25	25	5
10335	2-Butanone	78-93-3	< 50	50	5
10335	**t-Butyl alcohol**	75-65-0	**1,800**	400	5
10335	n-Butylbenzene	104-51-8	< 25	25	5
10335	sec-Butylbenzene	135-98-8	< 25	25	5
10335	Carbon Tetrachloride	56-23-5	< 25	25	5
10335	Chlorobenzene	108-90-7	< 25	25	5
10335	Chloroethane	75-00-3	< 25	25	5
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 50	50	5
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 25	25	5
10335	Chloromethane	74-87-3	< 25	25	5
10335	Dibromochloromethane	124-48-1	< 25	25	5
10335	1,2-Dichlorobenzene	95-50-1	< 25	25	5
10335	1,3-Dichlorobenzene	541-73-1	< 25	25	5
10335	1,4-Dichlorobenzene	106-46-7	< 25	25	5
10335	1,1-Dichloroethane	75-34-3	< 25	25	5
10335	1,2-Dichloroethane	107-06-2	< 25	25	5
10335	1,1-Dichloroethene	75-35-4	< 25	25	5
10335	**cis-1,2-Dichloroethene**	156-59-2	**190**	25	5
10335	trans-1,2-Dichloroethene	156-60-5	< 25	25	5
10335	1,2-Dichloropropane	78-87-5	< 25	25	5
10335	cis-1,3-Dichloropropene	10061-01-5	< 25	25	5
10335	trans-1,3-Dichloropropene	10061-02-6	< 25	25	5
10335	Ethyl t-butyl ether	637-92-3	< 25	25	5
10335	Ethylbenzene	100-41-4	< 25	25	5
10335	**di-Isopropyl ether**	108-20-3	**120**	25	5
10335	Isopropylbenzene	98-82-8	< 25	25	5
10335	p-Isopropyltoluene	99-87-6	< 25	25	5
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**6,600**	250	50
10335	Methylene Chloride	75-09-2	< 25	25	5
10335	Naphthalene	91-20-3	< 25	25	5
10335	n-Propylbenzene	103-65-1	< 25	25	5
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 25	25	5
10335	Tetrachloroethene	127-18-4	< 25	25	5
10335	Toluene	108-88-3	< 25	25	5
10335	1,1,1-Trichloroethane	71-55-6	< 25	25	5
10335	1,1,2-Trichloroethane	79-00-5	< 25	25	5
10335	Trichloroethene	79-01-6	< 25	25	5
10335	Trichlorofluoromethane	75-69-4	< 25	25	5
10335	1,2,4-Trimethylbenzene	95-63-6	< 25	25	5

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Analysis Report

Sample Description: MW-17D (120) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7082670
LLI Group # 1394928
Account # 12152

Project Name: Fairfax 26140

Collected: 06/05/2013 07:40 by SR

Submitted: 06/05/2013 15:15
Reported: 06/13/2013 19:25

Kleinfelder
1 Speen Street
Framingham MA 01701

FXP03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 25	25	5
10335	Vinyl Chloride	75-01-4	< 25	25	5
10335	Xylene (Total)	1330-20-7	< 25	25	5

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N131621AA	06/11/2013 13:20	Linda C Pape	5
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N131621AA	06/11/2013 13:44	Linda C Pape	50
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131621AA	06/11/2013 13:20	Linda C Pape	5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	N131621AA	06/11/2013 13:44	Linda C Pape	50

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Analysis Report

Sample Description: MW-17D (146) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7082671
LLI Group # 1394928
Account # 12152

Project Name: Fairfax 26140

Collected: 06/05/2013 08:00 by SR

Submitted: 06/05/2013 15:15
Reported: 06/13/2013 19:25

Kleinfelder
1 Speen Street
Framingham MA 01701

FXP04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 200	200	10
10335	Acrolein	107-02-8	< 1,000	1,000	10
10335	Acrylonitrile	107-13-1	< 200	200	10
10335	**t-Amyl methyl ether**	994-05-8	**100**	50	10
10335	Benzene	71-43-2	< 50	50	10
10335	Bromodichloromethane	75-27-4	< 50	50	10
10335	Bromoform	75-25-2	< 50	50	10
10335	Bromomethane	74-83-9	< 50	50	10
10335	2-Butanone	78-93-3	< 100	100	10
10335	**t-Butyl alcohol**	75-65-0	**1,900**	800	10
10335	n-Butylbenzene	104-51-8	< 50	50	10
10335	sec-Butylbenzene	135-98-8	< 50	50	10
10335	Carbon Tetrachloride	56-23-5	< 50	50	10
10335	Chlorobenzene	108-90-7	< 50	50	10
10335	Chloroethane	75-00-3	< 50	50	10
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 100	100	10
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 50	50	10
10335	Chloromethane	74-87-3	< 50	50	10
10335	Dibromochloromethane	124-48-1	< 50	50	10
10335	1,2-Dichlorobenzene	95-50-1	< 50	50	10
10335	1,3-Dichlorobenzene	541-73-1	< 50	50	10
10335	1,4-Dichlorobenzene	106-46-7	< 50	50	10
10335	1,1-Dichloroethane	75-34-3	< 50	50	10
10335	1,2-Dichloroethane	107-06-2	< 50	50	10
10335	1,1-Dichloroethene	75-35-4	< 50	50	10
10335	**cis-1,2-Dichloroethene**	156-59-2	**150**	50	10
10335	trans-1,2-Dichloroethene	156-60-5	< 50	50	10
10335	1,2-Dichloropropane	78-87-5	< 50	50	10
10335	cis-1,3-Dichloropropene	10061-01-5	< 50	50	10
10335	trans-1,3-Dichloropropene	10061-02-6	< 50	50	10
10335	Ethyl t-butyl ether	637-92-3	< 50	50	10
10335	Ethylbenzene	100-41-4	< 50	50	10
10335	**di-Isopropyl ether**	108-20-3	**130**	50	10
10335	Isopropylbenzene	98-82-8	< 50	50	10
10335	p-Isopropyltoluene	99-87-6	< 50	50	10
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**7,400**	500	100
10335	Methylene Chloride	75-09-2	< 50	50	10
10335	Naphthalene	91-20-3	< 50	50	10
10335	n-Propylbenzene	103-65-1	< 50	50	10
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 50	50	10
10335	Tetrachloroethene	127-18-4	< 50	50	10
10335	Toluene	108-88-3	< 50	50	10
10335	1,1,1-Trichloroethane	71-55-6	< 50	50	10
10335	1,1,2-Trichloroethane	79-00-5	< 50	50	10
10335	Trichloroethene	79-01-6	< 50	50	10
10335	Trichlorofluoromethane	75-69-4	< 50	50	10
10335	1,2,4-Trimethylbenzene	95-63-6	< 50	50	10

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Analysis Report

Sample Description: MW-17D (146) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7082671
LLI Group # 1394928
Account # 12152

Project Name: Fairfax 26140

Collected: 06/05/2013 08:00 by SR

Submitted: 06/05/2013 15:15
Reported: 06/13/2013 19:25

Kleinfelder
1 Speen Street
Framingham MA 01701

FXP04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 50	50	10
10335	Vinyl Chloride	75-01-4	< 50	50	10
10335	Xylene (Total)	1330-20-7	< 50	50	10

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N131621AA	06/11/2013 14:07	Linda C Pape	10
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N131621AA	06/11/2013 14:31	Linda C Pape	100
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131621AA	06/11/2013 14:07	Linda C Pape	10
01163	GC/MS VOA Water Prep	SW-846 5030B	2	N131621AA	06/11/2013 14:31	Linda C Pape	100

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Analysis Report

Sample Description: Trip Blank Water
Fairfax Petroleum 26140

LLI Sample # WW 7082672
LLI Group # 1394928
Account # 12152

Project Name: Fairfax 26140

Collected: 05/30/2013

Submitted: 06/05/2013 15:15
Reported: 06/13/2013 19:25

Kleinfelder
1 Speen Street
Framingham MA 01701

FXP0T

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	t-Amyl methyl ether	994-05-8	< 5	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	t-Butyl alcohol	75-65-0	< 80	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	cis-1,2-Dichloroethene	156-59-2	< 5	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	di-Isopropyl ether	108-20-3	< 5	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	< 5	5	1
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	Tetrachloroethene	127-18-4	< 5	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1
10335	Vinyl Chloride	75-01-4	< 5	5	1

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Analysis Report

Sample Description: Trip Blank Water
Fairfax Petroleum 26140

LLI Sample # WW 7082672
LLI Group # 1394928
Account # 12152

Project Name: Fairfax 26140

Collected: 05/30/2013

Submitted: 06/05/2013 15:15
Reported: 06/13/2013 19:25

Kleinfelder
1 Speen Street
Framingham MA 01701

FXP0T

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	< 5	5	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N131621AA	06/11/2013 09:15	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N131621AA	06/11/2013 09:15	Linda C Pape	1

Quality Control Summary

Client Name: Kleinfelder Group Number: 1394928
Reported: 06/13/13 at 07:25 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: N131621AA	Sample number(s): 7082668-7082672							
Acetone	< 20	20.	ug/l	90	103	35-181	14	30
Acrolein	< 100	100.	ug/l	101	101	46-146	0	30
Acrylonitrile	< 20	20.	ug/l	84	83	61-130	1	30
t-Amyl methyl ether	< 5	5.	ug/l	94	93	66-120	2	30
Benzene	< 5	5.	ug/l	98	94	77-121	4	30
Bromodichloromethane	< 5	5.	ug/l	103	99	73-120	4	30
Bromoform	< 5	5.	ug/l	105	101	61-120	3	30
Bromomethane	< 5	5.	ug/l	93	91	51-120	2	30
2-Butanone	< 10	10.	ug/l	81	85	57-141	5	30
t-Butyl alcohol	< 80	80.	ug/l	101	98	75-120	3	30
n-Butylbenzene	< 5	5.	ug/l	105	100	73-130	5	30
sec-Butylbenzene	< 5	5.	ug/l	106	103	74-124	3	30
Carbon Tetrachloride	< 5	5.	ug/l	115	110	65-137	4	30
Chlorobenzene	< 5	5.	ug/l	105	101	80-120	4	30
Chloroethane	< 5	5.	ug/l	94	94	60-120	0	30
2-Chloroethyl Vinyl Ether	< 10	10.	ug/l	73	72	52-127	2	30
Chloroform	< 5	5.	ug/l	105	101	77-122	4	30
Chloromethane	< 5	5.	ug/l	87	86	54-123	2	30
Dibromochloromethane	< 5	5.	ug/l	110	106	72-120	4	30
1,2-Dichlorobenzene	< 5	5.	ug/l	106	105	80-120	2	30
1,3-Dichlorobenzene	< 5	5.	ug/l	107	103	80-120	4	30
1,4-Dichlorobenzene	< 5	5.	ug/l	103	101	80-120	2	30
1,1-Dichloroethane	< 5	5.	ug/l	93	91	79-120	2	30
1,2-Dichloroethane	< 5	5.	ug/l	103	101	64-130	2	30
1,1-Dichloroethene	< 5	5.	ug/l	99	95	76-124	4	30
cis-1,2-Dichloroethene	< 5	5.	ug/l	99	97	80-120	2	30
trans-1,2-Dichloroethene	< 5	5.	ug/l	105	100	80-120	4	30
1,2-Dichloropropane	< 5	5.	ug/l	97	95	80-120	2	30
cis-1,3-Dichloropropene	< 5	5.	ug/l	100	98	78-120	3	30
trans-1,3-Dichloropropene	< 5	5.	ug/l	97	94	66-124	3	30
Ethyl t-butyl ether	< 5	5.	ug/l	90	88	66-120	2	30
Ethylbenzene	< 5	5.	ug/l	98	94	79-120	4	30
di-Isopropyl ether	< 5	5.	ug/l	83	82	65-120	1	30
Isopropylbenzene	< 5	5.	ug/l	103	97	77-120	6	30
p-Isopropyltoluene	< 5	5.	ug/l	105	101	77-121	4	30
Methyl Tertiary Butyl Ether	< 5	5.	ug/l	96	95	68-121	1	30
Methylene Chloride	< 5	5.	ug/l	102	100	84-118	3	30
Naphthalene	< 5	5.	ug/l	75	75	47-126	0	30
n-Propylbenzene	< 5	5.	ug/l	100	97	77-130	3	30
1,1,2,2-Tetrachloroethane	< 5	5.	ug/l	97	95	70-129	2	30
Tetrachloroethene	< 5	5.	ug/l	111	106	79-120	5	30
Toluene	< 5	5.	ug/l	100	97	79-120	3	30
1,1,1-Trichloroethane	< 5	5.	ug/l	108	104	66-126	3	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1394928
Reported: 06/13/13 at 07:25 PM

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1,2-Trichloroethane	< 5	5.	ug/l	100	98	80-120	2	30
Trichloroethene	< 5	5.	ug/l	105	101	80-120	3	30
Trichlorofluoromethane	< 5	5.	ug/l	103	100	65-130	3	30
1,2,4-Trimethylbenzene	< 5	5.	ug/l	101	99	69-122	3	30
1,3,5-Trimethylbenzene	< 5	5.	ug/l	103	99	68-124	4	30
Vinyl Chloride	< 5	5.	ug/l	98	97	63-120	1	30
Xylene (Total)	< 5	5.	ug/l	103	99	77-120	4	30

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260 VOCs
Batch number: N131621AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7082668	101	97	97	91
7082669	102	100	96	93
7082670	103	99	96	91
7082671	104	101	96	91
7082672	103	100	96	93
Blank	104	102	96	91
LCS	102	97	99	100
LCSD	102	102	98	99
Limits:	80-116	77-113	80-113	78-113

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Lancaster Laboratories

Analysis Request/Environmental Services Chain of Custody

For Lancaster Laboratories use only Acct. #: 12152 (3)

Group #: 1394928 Sample #: 7082668-72

1.4°C

Client:	Fairfax Petroleum	Acct. #:	
Project Name/#:	26140/ Great Falls	PWSID #:	
Project Address:	9901 Georgetown Pike Great Falls, VA		
Project Manager:	Mark Steele	P.O. #:	51141-258890
Sampler:	Sean Rockford	Quote #:	
Name of State where samples were collected:	Virginia		

For Lab Use Only

FSC:

SCR#:

Preservation Codes: H=HCl T=Thiosulfate N=HNO3 B=NaOH S=H2SO4 O=Other

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (Potable / NPDES)	Matrix: Other	Total # of Containers	Analyses Requested / Preservation Codes: Full List VOCs + Oxy 8260 (H)	Remarks	Temperature of samples upon receipt (if requested)
MW-17D (77)	6/5/13	0715	X			X		3	X		
MW-17D (93)	6/5/13	0725	X			X		3	X		
MW-17D (120)	6/5/13	0740	X			X		3	X		
MW-17D (146)	6/5/13	0800	X			X		3	X		
Trip Blank	5/30/13		X			X		2	X		

Turnaround Time Requested (TAT) (please circle): Normal Rush

(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed:

Rush results requested by (please circle): Phone Fax E-mail

Phone #: Fax #:

E-mail address:

Data Package Options (please circle if required)

Type I (validation/NJ reg) TX-TRRP-13

Type II (Tier II) MA MCP CT RCP

Type III (Reduced NJ)

Type IV (CLP SOW)

Type VI (Raw Data Only)

SDG Complete? Yes No

State-specific QC (MS/MSD/Dup)? Yes No

(If yes, indicated QC sample and submit triplicate volume)

Internal COC required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	6/5/13	0935	[signature]	6/5/13	1215
[signature]	6/5/13	15:10			
			[signature]	6/5/13	1515

Lancaster Laboratories, Inc. 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 717-656-2300

Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions, and Lancaster hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Kleinfelder
1 Speen Street
Framingham MA 01701

June 24, 2013

Project: Fairfax 26140

Submittal Date: 06/07/2013
Group Number: 1395646
PO Number: 51141-258890
State of Sample Origin: VA

Client Sample Description	Lancaster Labs (LLI) #
MW-1 Grab Water	7086331
MW-2 Grab Water	7086332
MW-5 Grab Water	7086333
MW-6S Grab Water	7086334
MW-6D (65 ft) Grab Water	7086335
MW-6D (85 ft) Grab Water	7086336
MW-6D (105 ft) Grab Water	7086337
MW-7 Grab Water	7086338
MW-8 Grab Water	7086339
MW-9 Grab Water	7086340
MW-10 Grab Water	7086341
MW-11 Grab Water	7086342
MW-12 (110 ft) Grab Water	7086343
MW-12 (153 ft) Grab Water	7086344
PW-01 (65 ft) Grab Water	7086345
MW-13 Grab Water	7086346
MW-14 Grab Water	7086347
MW-15 Grab Water	7086348
MW-16D (95 ft) Grab Water	7086349
MW-18D Grab Water	7086350
W-1 Grab Water	7086351
W-2 Grab Water	7086352
W-3 Grab Water	7086353
W-4 Grab Water	7086354
W-5 Grab Water	7086355
W-6 Grab Water	7086356
W-7 Grab Water	7086357
Trip Blank Water	7086358

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Kleinfelder	Attn: Mark Steele
ELECTRONIC COPY TO	Kleinfelder	Attn: Angela Vogt
ELECTRONIC COPY TO	Kleinfelder	Attn: Venelda Williams
ELECTRONIC COPY TO	Kleinfelder	Attn: Don Trego
ELECTRONIC COPY TO	Kleinfelder	Attn: Charlie Low

Respectfully Submitted,

Natalie R. Luciano
Senior Specialist

(717) 556-7258

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Analysis Report

Sample Description: MW-1 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086331
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 19:00 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTF01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	50	100
10335	Ethylbenzene	100-41-4	N.D.	80	100
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**150,000**	500	1000
10335	Toluene	108-88-3	N.D.	70	100
10335	Xylene (Total)	1330-20-7	N.D.	80	100
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**110**	1.0	50

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131671AA	06/16/2013 19:07	Sarah A Guill	100
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131671AA	06/16/2013 19:32	Sarah A Guill	1000
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131671AA	06/16/2013 19:07	Sarah A Guill	100
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T131671AA	06/16/2013 19:32	Sarah A Guill	1000
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13169A20A	06/19/2013 02:48	Marie D John	50
01146	GC VOA Water Prep	SW-846 5030B	1	13169A20A	06/19/2013 02:48	Marie D John	50

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Analysis Report

Sample Description: MW-2 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086332
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 17:40 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTF02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	3	5
10335	Ethylbenzene	100-41-4	N.D.	4	5
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**3,500**	25	50
10335	Toluene	108-88-3	N.D.	4	5
10335	Xylene (Total)	1330-20-7	N.D.	4	5
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**2.8**	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131642AA	06/14/2013 02:35	Sarah A Guill	5
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131642AA	06/14/2013 02:59	Sarah A Guill	50
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131642AA	06/14/2013 02:35	Sarah A Guill	5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T131642AA	06/14/2013 02:59	Sarah A Guill	50
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13165B20A	06/16/2013 13:35	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13165B20A	06/16/2013 13:35	Marie D John	1

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Analysis Report

Sample Description: MW-5 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086333
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 16:45 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTF05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**1 J**	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131642AA	06/14/2013 03:23	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131642AA	06/14/2013 03:23	Sarah A Guill	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13165B20A	06/16/2013 14:19	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13165B20A	06/16/2013 14:19	Marie D John	1

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Analysis Report

Sample Description: MW-6S Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086334
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 07:10 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTF6S

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131642AA	06/14/2013 03:47	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131642AA	06/14/2013 03:47	Sarah A Guill	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13165B20A	06/16/2013 14:40	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13165B20A	06/16/2013 14:40	Marie D John	1

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Analysis Report

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Sample Description: MW-6D (65 ft) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086335
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 09:30 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GT6D1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131642AA	06/14/2013 04:11	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131642AA	06/14/2013 04:11	Sarah A Guill	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13165B20A	06/16/2013 15:02	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13165B20A	06/16/2013 15:02	Marie D John	1

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Analysis Report

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Sample Description: MW-6D (85 ft) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086336
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 08:55 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GT6D2

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131642AA	06/14/2013 04:35	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131642AA	06/14/2013 04:35	Sarah A Guill	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13165B20A	06/16/2013 15:24	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13165B20A	06/16/2013 15:24	Marie D John	1

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Analysis Report

Sample Description: MW-6D (105 ft) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086337
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 08:20 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GT6D3

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131642AA	06/14/2013 04:59	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131642AA	06/14/2013 04:59	Sarah A Guill	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13165B20A	06/16/2013 15:46	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13165B20A	06/16/2013 15:46	Marie D John	1

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Analysis Report

Sample Description: MW-7 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086338
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 19:15 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTF07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**950**	5	10
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**0.85**	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131642AA	06/14/2013 05:23	Sarah A Guill	1
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131642AA	06/14/2013 05:47	Sarah A Guill	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131642AA	06/14/2013 05:23	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T131642AA	06/14/2013 05:47	Sarah A Guill	10
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13165B20A	06/16/2013 16:07	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13165B20A	06/16/2013 16:07	Marie D John	1

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Analysis Report

Sample Description: MW-8 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086339
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 18:25 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

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1 Speen Street
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GTF08

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	
10335	**Benzene**	71-43-2	**0.7**	**J**	0.5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	1
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**160**		0.5	1
10335	Toluene	108-88-3	N.D.		0.7	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**		**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**0.52**		0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131651AA	06/14/2013 13:04	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131651AA	06/14/2013 13:04	Linda C Pape	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13165B20A	06/16/2013 16:29	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13165B20A	06/16/2013 16:29	Marie D John	1

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Analysis Report

Sample Description: MW-9 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086340
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 17:00 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTF09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**20**	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**0.042 J**	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131651AA	06/14/2013 13:28	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131651AA	06/14/2013 13:28	Linda C Pape	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13165B20A	06/16/2013 16:51	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13165B20A	06/16/2013 16:51	Marie D John	1

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Analysis Report

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Sample Description: MW-10 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086341
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 06:30 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTF10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131651AA	06/14/2013 13:52	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131651AA	06/14/2013 13:52	Linda C Pape	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13165B20A	06/16/2013 17:13	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13165B20A	06/16/2013 17:13	Marie D John	1

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Analysis Report

Sample Description: MW-11 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086342
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 18:45 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTF11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**770**	5	10
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**1.4**	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131651AA	06/14/2013 14:16	Linda C Pape	1
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131671AA	06/16/2013 19:56	Sarah A Guill	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131651AA	06/14/2013 14:16	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T131671AA	06/16/2013 19:56	Sarah A Guill	10
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13168A07A	06/17/2013 11:43	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13168A07A	06/17/2013 11:43	Marie D John	1

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Analysis Report

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Sample Description: MW-12 (110 ft) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086343
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 15:40 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GT121

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131651AA	06/14/2013 14:41	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131651AA	06/14/2013 14:41	Linda C Pape	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13168A07A	06/17/2013 12:08	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13168A07A	06/17/2013 12:08	Marie D John	1

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Analysis Report

Sample Description: MW-12 (153 ft) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086344
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 15:15 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GT122

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131651AA	06/14/2013 15:05	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131651AA	06/14/2013 15:05	Linda C Pape	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13168A07A	06/17/2013 12:34	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13168A07A	06/17/2013 12:34	Marie D John	1

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Analysis Report

Sample Description: PW-01 (65 ft) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086345
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 10:30 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTFP1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	**Benzene**	71-43-2	**3 J**	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**1,200**	5	10
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**1.6**	0.020	1

A preserved vial was submitted for analysis. However, the pH at the time of analysis was 3.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131651AA	06/14/2013 18:18	Linda C Pape	1
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131651AA	06/14/2013 18:42	Linda C Pape	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131651AA	06/14/2013 18:18	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T131651AA	06/14/2013 18:42	Linda C Pape	10
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13168A07A	06/17/2013 13:00	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13168A07A	06/17/2013 13:00	Marie D John	1

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Analysis Report

Sample Description: MW-13 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086346
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 18:05 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTF13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**1,300**	10	20
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**1.6**	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131651AA	06/14/2013 15:29	Linda C Pape	1
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131671AA	06/16/2013 20:20	Sarah A Guill	20
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131651AA	06/14/2013 15:29	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T131671AA	06/16/2013 20:20	Sarah A Guill	20
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13168A07A	06/17/2013 13:26	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13168A07A	06/17/2013 13:26	Marie D John	1

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Analysis Report

Sample Description: MW-14 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086347
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 17:25 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTF14

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	1	2
10335	Ethylbenzene	100-41-4	N.D.	2	2
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**3,600**	10	20
10335	Toluene	108-88-3	N.D.	1	2
10335	Xylene (Total)	1330-20-7	N.D.	2	2
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**3.9**	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131651AA	06/14/2013 19:06	Linda C Pape	2
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131651AA	06/14/2013 19:30	Linda C Pape	20
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131651AA	06/14/2013 19:06	Linda C Pape	2
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T131651AA	06/14/2013 19:30	Linda C Pape	20
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13168A07A	06/17/2013 13:52	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13168A07A	06/17/2013 13:52	Marie D John	1

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Analysis Report

Sample Description: MW-15 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086348
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 19:40 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTF15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**120**	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**0.15**	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131651AA	06/14/2013 15:53	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131651AA	06/14/2013 15:53	Linda C Pape	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13168A07A	06/17/2013 14:17	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13168A07A	06/17/2013 14:17	Marie D John	1

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Analysis Report

Sample Description: MW-16D (95 ft) Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086349
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 11:45 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

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1 Speen Street
Framingham MA 01701

GTF16

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	
10335	**Benzene**	71-43-2	**18**	**J**	5	10
10335	Ethylbenzene	100-41-4	N.D.		8	10
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**11,000**		50	100
10335	Toluene	108-88-3	N.D.		7	10
10335	Xylene (Total)	1330-20-7	N.D.		8	10
GC Volatiles	**SW-846 8015B**		**mg/l**		**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**9.9**		0.10	5

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131651AA	06/14/2013 19:55	Linda C Pape	10
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131651AA	06/14/2013 20:19	Linda C Pape	100
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131651AA	06/14/2013 19:55	Linda C Pape	10
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T131651AA	06/14/2013 20:19	Linda C Pape	100
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13168A07A	06/17/2013 23:38	Marie D John	5
01146	GC VOA Water Prep	SW-846 5030B	1	13168A07A	06/17/2013 23:38	Marie D John	5

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Analysis Report

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Sample Description: MW-18D Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086350
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 14:00 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

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GTF18

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131671AA	06/16/2013 20:44	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131671AA	06/16/2013 20:44	Sarah A Guill	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13168A07A	06/17/2013 14:43	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13168A07A	06/17/2013 14:43	Marie D John	1

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Analysis Report

Sample Description: W-1 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086351
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/07/2013 05:50 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

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1 Speen Street
Framingham MA 01701

GTFW1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	10	20
10335	Ethylbenzene	100-41-4	N.D.	16	20
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**26,000**	100	200
10335	Toluene	108-88-3	N.D.	14	20
10335	Xylene (Total)	1330-20-7	N.D.	16	20
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**20**	0.10	5

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131671AA	06/16/2013 21:08	Sarah A Guill	20
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131671AA	06/16/2013 21:32	Sarah A Guill	200
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131671AA	06/16/2013 21:08	Sarah A Guill	20
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T131671AA	06/16/2013 21:32	Sarah A Guill	200
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13168A07A	06/18/2013 00:04	Marie D John	5
01146	GC VOA Water Prep	SW-846 5030B	1	13168A07A	06/18/2013 00:04	Marie D John	5

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Analysis Report

Sample Description: W-2 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086352
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/07/2013 05:25 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

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1 Speen Street
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GTFW2

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	5	10
10335	Ethylbenzene	100-41-4	N.D.	8	10
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**14,000**	50	100
10335	Toluene	108-88-3	N.D.	7	10
10335	Xylene (Total)	1330-20-7	N.D.	8	10
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**12**	0.10	5

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131671AA	06/16/2013 21:56	Sarah A Guill	10
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131671AA	06/16/2013 22:20	Sarah A Guill	100
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131671AA	06/16/2013 21:56	Sarah A Guill	10
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T131671AA	06/16/2013 22:20	Sarah A Guill	100
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13168A07A	06/18/2013 00:30	Marie D John	5
01146	GC VOA Water Prep	SW-846 5030B	1	13168A07A	06/18/2013 00:30	Marie D John	5

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Analysis Report

Sample Description: W-3 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086353
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/07/2013 05:00 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
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GTFW3

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**2 J**	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131671AA	06/16/2013 22:44	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131671AA	06/16/2013 22:44	Sarah A Guill	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13168A07A	06/17/2013 15:09	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	13168A07A	06/17/2013 15:09	Marie D John	1

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Analysis Report

Sample Description: W-4 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086354
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/07/2013 06:45 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTFW4

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131671AA	06/16/2013 23:08	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131671AA	06/16/2013 23:08	Sarah A Guill	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13168A07A	06/17/2013 16:00	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13168A07A	06/17/2013 16:00	Catherine J Schwarz	1

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Analysis Report

Sample Description: W-5 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086355
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/07/2013 07:05 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTFW5

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	**Benzene**	71-43-2	**180**	0.5	1
10335	**Ethylbenzene**	100-41-4	**270**	0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10335	**Toluene**	108-88-3	**96**	0.7	1
10335	**Xylene (Total)**	1330-20-7	**11,000**	40	50
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**28**	0.20	10

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131671AA	06/16/2013 23:32	Sarah A Guill	1
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131681AA	06/17/2013 15:31	Chelsea B Stong	50
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131671AA	06/16/2013 23:32	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T131681AA	06/17/2013 15:31	Chelsea B Stong	50
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13168A07A	06/17/2013 23:12	Marie D John	10
01146	GC VOA Water Prep	SW-846 5030B	1	13168A07A	06/17/2013 23:12	Marie D John	10

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Analysis Report

Sample Description: W-6 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086356
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/07/2013 06:15 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTFW6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**6**	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	TPH-GRO water C6-C10	n.a.	N.D.	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131681AA	06/17/2013 15:55	Chelsea B Stong	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131681AA	06/17/2013 15:55	Chelsea B Stong	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13168A07A	06/17/2013 16:26	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13168A07A	06/17/2013 16:26	Catherine J Schwarz	1

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Analysis Report

Sample Description: W-7 Grab Water
Fairfax Petroleum 26140

LLI Sample # WW 7086357
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013 16:25 by CL

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTFW7

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC Volatiles	**SW-846 8015B**		**mg/l**	**mg/l**	
01635	**TPH-GRO water C6-C10**	n.a.	**0.76**	0.020	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131681AA	06/17/2013 16:20	Chelsea B Stong	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131681AA	06/17/2013 16:20	Chelsea B Stong	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	13168A07A	06/17/2013 22:22	Catherine J Schwarz	1
01146	GC VOA Water Prep	SW-846 5030B	1	13168A07A	06/17/2013 22:22	Catherine J Schwarz	1

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Analysis Report

Sample Description: Trip Blank Water
Fairfax Petroleum 26140

LLI Sample # WW 7086358
LLI Group # 1395646
Account # 12152

Project Name: Fairfax 26140

Collected: 06/06/2013

Submitted: 06/07/2013 15:20
Reported: 06/24/2013 08:19

Kleinfelder
1 Speen Street
Framingham MA 01701

GTFTB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T131681AA	06/17/2013 16:44	Chelsea B Stong	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131681AA	06/17/2013 16:44	Chelsea B Stong	1

Quality Control Summary

Client Name: Kleinfelder Group Number: 1395646
Reported: 06/24/13 at 08:19 AM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: T131642AA	Sample number(s): 7086332-7086338							
Benzene	N.D.	0.5	ug/l	104		77-121		
Ethylbenzene	N.D.	0.8	ug/l	99		79-120		
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	106		68-121		
Toluene	N.D.	0.7	ug/l	100		79-120		
Xylene (Total)	N.D.	0.8	ug/l	102		77-120		
Batch number: T131651AA	Sample number(s): 7086339-7086349							
Benzene	N.D.	0.5	ug/l	108	105	77-121	3	30
Ethylbenzene	N.D.	0.8	ug/l	101	101	79-120	1	30
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	109	107	68-121	2	30
Toluene	N.D.	0.7	ug/l	104	104	79-120	0	30
Xylene (Total)	N.D.	0.8	ug/l	105	103	77-120	2	30
Batch number: T131671AA	Sample number(s): 7086331,7086342,7086346,7086350-7086355							
Benzene	N.D.	0.5	ug/l	101	102	77-121	1	30
Ethylbenzene	N.D.	0.8	ug/l	94	96	79-120	2	30
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	107	105	68-121	2	30
Toluene	N.D.	0.7	ug/l	96	98	79-120	1	30
Xylene (Total)	N.D.	0.8	ug/l	97	97	77-120	0	30
Batch number: T131681AA	Sample number(s): 7086355-7086358							
Benzene	N.D.	0.5	ug/l	107	107	77-121	0	30
Ethylbenzene	N.D.	0.8	ug/l	100	97	79-120	3	30
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	109	110	68-121	0	30
Toluene	N.D.	0.7	ug/l	101	101	79-120	0	30
Xylene (Total)	N.D.	0.8	ug/l	103	100	77-120	3	30
Batch number: 13165B20A	Sample number(s): 7086332-7086341							
TPH-GRO water C6-C10	N.D.	0.020	mg/l	100	102	75-135	2	30
Batch number: 13168A07A	Sample number(s): 7086342-7086357							
TPH-GRO water C6-C10	N.D.	0.020	mg/l	106	111	75-135	5	30
Batch number: 13169A20A	Sample number(s): 7086331							
TPH-GRO water C6-C10	N.D.	0.020	mg/l	102		75-135		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1395646
Reported: 06/24/13 at 08:19 AM

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: T131642AA	Sample number(s): 7086332-7086338 UNSPK: P082675								
Benzene	112	110	72-134	2	30				
Ethylbenzene	106	106	71-134	0	30				
Methyl Tertiary Butyl Ether	108	109	72-126	1	30				
Toluene	104	104	80-125	0	30				
Xylene (Total)	105	104	79-125	1	30				
Batch number: 13169A20A	Sample number(s): 7086331 UNSPK: P087156								
TPH-GRO water C6-C10	103	106	75-135	2	30				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260 VOCs
Batch number: T131642AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7086332	100	103	102	100
7086333	103	104	96	97
7086334	104	102	98	97
7086335	104	101	99	100
7086336	102	103	97	98
7086337	104	104	99	99
7086338	101	104	97	101
Blank	101	104	98	96
LCS	101	102	99	99
MS	102	103	100	101
MSD	103	106	99	101
Limits:	80-116	77-113	80-113	78-113

Analysis Name: 8260 VOCs
Batch number: T131651AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7086339	101	101	98	99
7086340	103	105	97	99
7086341	103	105	98	97
7086342	102	103	99	100
7086343	104	103	99	101
7086344	103	102	99	98
7086345	102	104	99	101
7086346	101	105	99	100
7086347	101	102	101	99
7086348	103	103	100	99
7086349	102	102	100	101
Blank	105	104	99	101
LCS	103	105	99	102
LCSD	100	103	97	100

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder
Reported: 06/24/13 at 08:19 AM

Group Number: 1395646

Surrogate Quality Control

Limits: 80-116 77-113 80-113 78-113

Analysis Name: 8260 VOCs
Batch number: T131671AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7086331	101	102	96	98
7086350	105	104	97	99
7086351	100	101	100	101
7086352	103	103	98	98
7086353	106	105	99	99
7086354	104	103	98	103
7086355	101	101	109	82
Blank	102	105	98	97
LCS	102	103	98	101
LCSD	103	106	96	102

Limits: 80-116 77-113 80-113 78-113

Analysis Name: 8260 VOCs
Batch number: T131681AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7086356	102	104	98	100
7086357	103	104	97	101
7086358	103	103	98	99
Blank	103	106	98	98
LCS	103	103	99	103
LCSD	102	103	97	102

Limits: 80-116 77-113 80-113 78-113

Analysis Name: TPH-GRO water C6-C10
Batch number: 13165B20A

	Trifluorotoluene-F
7086332	92
7086333	86
7086334	86
7086335	86
7086336	87
7086337	86
7086338	86
7086339	87
7086340	86
7086341	87
Blank	86
LCS	117
LCSD	117

Limits: 63-135

Analysis Name: TPH-GRO water C6-C10
Batch number: 13168A07A

Trifluorotoluene-F

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder
Reported: 06/24/13 at 08:19 AM

Group Number: 1395646

Surrogate Quality Control

7086342	102
7086343	99
7086344	104
7086345	100
7086346	102
7086347	102
7086348	99
7086349	101
7086350	101
7086351	101
7086352	106
7086353	93
7086354	99
7086355	101
7086356	101
7086357	108
Blank	104
LCS	110
LCSD	115
Limits:	63-135

Analysis Name: TPH-GRO water C6-C10
Batch number: 13169A20A

	Trifluorotoluene-F
7086331	88
Blank	88
LCS	122
MS	121
MSD	128
Limits:	63-135

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Lancaster Laboratories

Analysis Request/Environmental Services Chain of Custody

For Lancaster Laboratories use only Acct. #: 12152 (1)

Group #: 1395646 Sample #: 7086331-58

Client:	Fairfax Petroleum	Acct. #:	
Project Name/#:	26140/ Great Falls	PWSID #:	
Project Address:	9901 Georgetown Pike Great Falls, VA		
Project Manager:	Mark Steele	P.O. #:	51141-258890
Sampler:	Charlie Low	Quote #:	
Name of State where samples were collected:	Virginia		

For Lab Use Only
FSC:
SCR#:

Preservation Codes: H=HCl T=Thiosulfate N=HNO3 B=NaOH S=H2SO4 O=Other

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water (Potable / NPDES)	Other	Total # of Containers	BTEX, MTBE 8260 (H)	TPH-GRO 8015 (H)	Remarks	Temperature of samples upon receipt (if requested)
MW-1	6-6-13	1900	X			X		6	X	X		
MW-2	6-6-13	1740	X			X		6	X	X		
~~MW-3~~											CL	
MW-5	6-6-13	1645	X			X		6	X	X		
MW-6S	6-6-13	0910	X			X		6	X	X		
MW-6D (65 ft)	6-6-13	0930	X			X		6	X	X	3 Coolers	
MW-6D (85 ft)	6-6-13	0855	X			X		6	X	X		
MW-6D (105 ft)	6-6-13	0820	X			X		6	X	X	Page 1 of 3	
MW-7	6-6-13	1915	X			X		6	X	X		
MW-8	6-6-13	1825	X			X		6	X	X		

Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

Data Package Options (please circle if required)
Type I (validation/NJ reg) TX-TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

SDG Complete? Yes No

State-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicated QC sample and submit triplecate volume)
Internal COC required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	6-7-13	1100	Sample Room	6-7-13	1100
Sample Room	6/7/13	11:21	[signature]	6/7/13	11:21
[signature]	6/7/13	15:20			
			[signature]	6/7/13	1520

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Lancaster Laboratories

Analysis Request/Environmental Services Chain of Custody

For Lancaster Laboratories use only Acct. #: 12152 (1)

Group #: 1395646 Sample #: 7086331-58

Client:	Fairfax Petroleum	Acct. #:	
Project Name/#:	26140/ Great Falls	PWSID #:	
Project Address:	9901 Georgetown Pike Great Falls, VA		
Project Manager:	Mark Steele	P.O. #:	51141-258890
Sampler:	Charlie Low	Quote #:	
Name of State where samples were collected:	Virginia		

For Lab Use Only
FSC:
SCR#:

Preservation Codes: H=HCl T=Thiosulfate N=HNO3 B=NaOH S=H2SO4 O=Other

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water (Potable / NPDES)	Other	Total # of Containers	BTEX, MTBE 8260 (H)	TPH-GRO 8015 (H)	Remarks	Temperature of samples upon receipt (if requested)
MW-9	6-6-13	1700	X			X		6	X	X		
MW-10	6-6-13	0630	X			X		6	X	X		
MW-11	6-6-13	1845	X			X		6	X	X		
MW-12 (110ft)	6-6-13	1540	X			X		6	X	X		
MW-12 (153ft)	6-6-13	1515	X			X		6	X	X	3 Coolers	
PW-01 (65ft)	6-6-13	1030	X			X		6	X	X		
MW-13	6-6-13	1805	X			X		6	X	X	Page 2 of 3	
MW-14	6-6-13	1725	X			X		6	X	X		
MW-15	6-6-13	1940	X			X		6	X	X		
MW-16D (95ft)	6-6-13	1145	X			X		6	X	X		

Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

Relinquished by:	Date	Time	Received by:	Date	Time
Charlie Low	6-7-13	1100	Sample Room	6-7-13	1100
Sample Room	6/7/13	12:35	[illegible]	6/7/13	[illegible]
[illegible]	6/7/13	15:20			

Data Package Options (please circle if required)
Type I (validation/NJ reg) TX-TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

SDG Complete? Yes No

State-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicated QC sample and submit triplicate volume)
Internal COC required? Yes No

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Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client

Lancaster Laboratories

Analysis Request/Environmental Services Chain of Custody

For Lancaster Laboratories use only Acct. #: 12152

Group #: 1395646 Sample #: 7086331-58

(1)

Client:	Fairfax Petroleum	Acct. #:	
Project Name/#:	26140/ Great Falls	PWSID #:	
Project Address:	9901 Georgetown Pike Great Falls, VA		
Project Manager:	Mark Seele	P.O. #:	51141-258891
Sampler:	Charlie Low	Quote #:	
Name of State where samples were collected:	Virginia		

For Lab Use Only

FSC:

SCR#:

Preservation Codes: H=HCl T=Thiosulfate N=HNO3 B=NaOH S=H2SO4 O=Other

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water (Potable / NPDES)	Other	Total # of Containers	BTEX, MTBE 8260 (H)	TPH-GRO 8015 (H)	Remarks	Temperature of samples upon receipt (if requested)
MW-18D	6-6-13	1400	X			X		6	X	X		
W-1	6-7-13	0550	X			X		6	X	X		
W-2	6-7-13	~~0500~~ CL	X			X		6	X	X	←Time = 0525	
W-3	6-7-13	0500	X			X		6	X	X		
W-4	6-7-13	0645	X			X		6	X	X		
W-5	6-7-13	0705	X			X		6	X	X	3 coolers	
W-6	6-7-13	0615	X			X		6	X	X		
W-7	6-6-13	1625	X			X		6	X	X	Page 3 of 3	
Trip Blank CL	–	–				X		2	X			

Turnaround Time Requested (TAT) (please circle): Normal Rush

(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed:

Rush results requested by (please circle): Phone Fax E-mail

Phone #: Fax #:

E-mail address:

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	6-7-13	1100	Sample Room	6-7-13	1100
Sample Room	6/7/13	1[illegible]	[signature]	6/7/13	1[illegible]
[signature]	6/7/13	15:20			
			[signature]	6/7/13	1520

Data Package Options (please circle if required)

Type I (validation/NJ reg) TX-TRRP-13

Type II (Tier II) MA MCP CT RCP

Type III (Reduced NJ)

Type IV (CLP SOW)

Type VI (Raw Data Only)

SDG Complete? Yes No

State-specific QC (MS/MSD/Dup)? Yes No

(If yes, indicated QC sample and submit triplecate volume)

Internal COC required? Yes No

Lancaster Laboratories, Inc. 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 717-656-2300

Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Kleinfelder
1 Speen Street
Framingham MA 01701

August 12, 2013

Project: Fairfax 26140

Submittal Date: 08/02/2013
Group Number: 1408927
PO Number: 51141-265652
State of Sample Origin: VA

Client Sample Description	Lancaster Labs (LL) #
MW-17D-91-101-3V Grab Water	7149065
MW-17D-91-101-2V Grab Water	7149066
MW-17D-91-101-1V Grab Water	7149067
MW-17D-114-124-1V Grab Water	7149068
MW-17D-127-137-1V Grab Water	7149069
Trip Blank Water	7149070

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Kleinfelder	Attn: Mark Steele
ELECTRONIC COPY TO	Kleinfelder	Attn: Angela Vogt
ELECTRONIC COPY TO	Kleinfelder	Attn: Venelda Williams
ELECTRONIC COPY TO	Kleinfelder	Attn: Charlie Low
ELECTRONIC COPY TO	Kleinfelder	Attn: Paxton Wertz

Respectfully Submitted,

Natalie R. Luciano
Senior Specialist

(717) 556-7258

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Analysis Report

Sample Description: MW-17D-91-101-3V Grab Water
Fairfax Petroleum 26140

LL Sample # WW 7149065
LL Group # 1408927
Account # 12152

Project Name: Fairfax 26140

Collected: 08/02/2013 10:48

Submitted: 08/02/2013 17:05
Reported: 08/12/2013 13:26

Kleinfelder
1 Speen Street
Framingham MA 01701

FFX01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	**t-Amyl methyl ether**	994-05-8	**10**	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	**t-Butyl alcohol**	75-65-0	**140**	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	**cis-1,2-Dichloroethene**	156-59-2	**310**	50	10
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	**di-Isopropyl ether**	108-20-3	**14**	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**610**	50	10
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	**Tetrachloroethene**	127-18-4	**16**	5	1
10335	**Toluene**	108-88-3	**8**	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	**Trichloroethene**	79-01-6	**8**	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1

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Analysis Report

Sample Description: MW-17D-91-101-3V Grab Water
Fairfax Petroleum 26140

LL Sample # WW 7149065
LL Group # 1408927
Account # 12152

Project Name: Fairfax 26140

Collected: 08/02/2013 10:48

Submitted: 08/02/2013 17:05
Reported: 08/12/2013 13:26

Kleinfelder
1 Speen Street
Framingham MA 01701

FFX01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1
10335	Vinyl Chloride	75-01-4	< 5	5	1
10335	Xylene (Total)	1330-20-7	< 5	5	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N132181AA	08/06/2013 09:43	Christopher G Torres	1
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N132181AA	08/06/2013 10:07	Christopher G Torres	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N132181AA	08/06/2013 09:43	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	N132181AA	08/06/2013 10:07	Christopher G Torres	10

Sample Description: MW-17D-91-101-2V Grab Water
Fairfax Petroleum 26140

LL Sample # WW 7149066
LL Group # 1408927
Account # 12152

Project Name: Fairfax 26140

Collected: 08/02/2013 10:21

Submitted: 08/02/2013 17:05
Reported: 08/12/2013 13:26

Kleinfelder
1 Speen Street
Framingham MA 01701

FFX02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 40	40	2
10335	Acrolein	107-02-8	< 200	200	2
10335	Acrylonitrile	107-13-1	< 40	40	2
10335	**t-Amyl methyl ether**	994-05-8	**10**	10	2
10335	Benzene	71-43-2	< 10	10	2
10335	Bromodichloromethane	75-27-4	< 10	10	2
10335	Bromoform	75-25-2	< 10	10	2
10335	Bromomethane	74-83-9	< 10	10	2
10335	2-Butanone	78-93-3	< 20	20	2
10335	**t-Butyl alcohol**	75-65-0	**170**	160	2
10335	n-Butylbenzene	104-51-8	< 10	10	2
10335	sec-Butylbenzene	135-98-8	< 10	10	2
10335	Carbon Tetrachloride	56-23-5	< 10	10	2
10335	Chlorobenzene	108-90-7	< 10	10	2
10335	Chloroethane	75-00-3	< 10	10	2
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 20	20	2
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 10	10	2
10335	Chloromethane	74-87-3	< 10	10	2
10335	Dibromochloromethane	124-48-1	< 10	10	2
10335	1,2-Dichlorobenzene	95-50-1	< 10	10	2
10335	1,3-Dichlorobenzene	541-73-1	< 10	10	2
10335	1,4-Dichlorobenzene	106-46-7	< 10	10	2
10335	1,1-Dichloroethane	75-34-3	< 10	10	2
10335	1,2-Dichloroethane	107-06-2	< 10	10	2
10335	1,1-Dichloroethene	75-35-4	< 10	10	2
10335	**cis-1,2-Dichloroethene**	156-59-2	**310**	10	2
10335	trans-1,2-Dichloroethene	156-60-5	< 10	10	2
10335	1,2-Dichloropropane	78-87-5	< 10	10	2
10335	cis-1,3-Dichloropropene	10061-01-5	< 10	10	2
10335	trans-1,3-Dichloropropene	10061-02-6	< 10	10	2
10335	Ethyl t-butyl ether	637-92-3	< 10	10	2
10335	Ethylbenzene	100-41-4	< 10	10	2
10335	**di-Isopropyl ether**	108-20-3	**14**	10	2
10335	Isopropylbenzene	98-82-8	< 10	10	2
10335	p-Isopropyltoluene	99-87-6	< 10	10	2
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**650**	100	20
10335	Methylene Chloride	75-09-2	< 10	10	2
10335	Naphthalene	91-20-3	< 10	10	2
10335	n-Propylbenzene	103-65-1	< 10	10	2
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 10	10	2
10335	**Tetrachloroethene**	127-18-4	**12**	10	2
10335	Toluene	108-88-3	< 10	10	2
10335	1,1,1-Trichloroethane	71-55-6	< 10	10	2
10335	1,1,2-Trichloroethane	79-00-5	< 10	10	2
10335	Trichloroethene	79-01-6	< 10	10	2
10335	Trichlorofluoromethane	75-69-4	< 10	10	2
10335	1,2,4-Trimethylbenzene	95-63-6	< 10	10	2

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Analysis Report

Sample Description: MW-17D-91-101-2V Grab Water
Fairfax Petroleum 26140

LL Sample # WW 7149066
LL Group # 1408927
Account # 12152

Project Name: Fairfax 26140

Collected: 08/02/2013 10:21

Submitted: 08/02/2013 17:05
Reported: 08/12/2013 13:26

Kleinfelder
1 Speen Street
Framingham MA 01701

FFX02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 10	10	2
10335	Vinyl Chloride	75-01-4	< 10	10	2
10335	Xylene (Total)	1330-20-7	< 10	10	2

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N132181AA	08/06/2013 10:31	Christopher G Torres	2
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N132181AA	08/06/2013 10:54	Christopher G Torres	20
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N132181AA	08/06/2013 10:31	Christopher G Torres	2
01163	GC/MS VOA Water Prep	SW-846 5030B	2	N132181AA	08/06/2013 10:54	Christopher G Torres	20

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Analysis Report

Sample Description: MW-17D-91-101-1V Grab Water
Fairfax Petroleum 26140

LL Sample # WW 7149067
LL Group # 1408927
Account # 12152

Project Name: Fairfax 26140

Collected: 08/02/2013 09:52

Submitted: 08/02/2013 17:05
Reported: 08/12/2013 13:26

Kleinfelder
1 Speen Street
Framingham MA 01701

FFX03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 40	40	2
10335	Acrolein	107-02-8	< 200	200	2
10335	Acrylonitrile	107-13-1	< 40	40	2
10335	**t-Amyl methyl ether**	994-05-8	**22**	10	2
10335	Benzene	71-43-2	< 10	10	2
10335	Bromodichloromethane	75-27-4	< 10	10	2
10335	Bromoform	75-25-2	< 10	10	2
10335	Bromomethane	74-83-9	< 10	10	2
10335	2-Butanone	78-93-3	< 20	20	2
10335	**t-Butyl alcohol**	75-65-0	**360**	160	2
10335	n-Butylbenzene	104-51-8	< 10	10	2
10335	sec-Butylbenzene	135-98-8	< 10	10	2
10335	Carbon Tetrachloride	56-23-5	< 10	10	2
10335	Chlorobenzene	108-90-7	< 10	10	2
10335	Chloroethane	75-00-3	< 10	10	2
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 20	20	2
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 10	10	2
10335	Chloromethane	74-87-3	< 10	10	2
10335	Dibromochloromethane	124-48-1	< 10	10	2
10335	1,2-Dichlorobenzene	95-50-1	< 10	10	2
10335	1,3-Dichlorobenzene	541-73-1	< 10	10	2
10335	1,4-Dichlorobenzene	106-46-7	< 10	10	2
10335	1,1-Dichloroethane	75-34-3	< 10	10	2
10335	1,2-Dichloroethane	107-06-2	< 10	10	2
10335	1,1-Dichloroethene	75-35-4	< 10	10	2
10335	**cis-1,2-Dichloroethene**	156-59-2	**320**	10	2
10335	trans-1,2-Dichloroethene	156-60-5	< 10	10	2
10335	1,2-Dichloropropane	78-87-5	< 10	10	2
10335	cis-1,3-Dichloropropene	10061-01-5	< 10	10	2
10335	trans-1,3-Dichloropropene	10061-02-6	< 10	10	2
10335	Ethyl t-butyl ether	637-92-3	< 10	10	2
10335	Ethylbenzene	100-41-4	< 10	10	2
10335	**di-Isopropyl ether**	108-20-3	**32**	10	2
10335	Isopropylbenzene	98-82-8	< 10	10	2
10335	p-Isopropyltoluene	99-87-6	< 10	10	2
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**1,300**	25	5
10335	Methylene Chloride	75-09-2	< 10	10	2
10335	Naphthalene	91-20-3	< 10	10	2
10335	n-Propylbenzene	103-65-1	< 10	10	2
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 10	10	2
10335	**Tetrachloroethene**	127-18-4	**11**	10	2
10335	**Toluene**	108-88-3	**15**	10	2
10335	1,1,1-Trichloroethane	71-55-6	< 10	10	2
10335	1,1,2-Trichloroethane	79-00-5	< 10	10	2
10335	Trichloroethene	79-01-6	< 10	10	2
10335	Trichlorofluoromethane	75-69-4	< 10	10	2
10335	1,2,4-Trimethylbenzene	95-63-6	< 10	10	2

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Analysis Report

Sample Description: MW-17D-91-101-1V Grab Water
Fairfax Petroleum 26140

LL Sample # WW 7149067
LL Group # 1408927
Account # 12152

Project Name: Fairfax 26140

Collected: 08/02/2013 09:52

Submitted: 08/02/2013 17:05
Reported: 08/12/2013 13:26

Kleinfelder
1 Speen Street
Framingham MA 01701

FFX03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 10	10	2
10335	Vinyl Chloride	75-01-4	< 10	10	2
10335	Xylene (Total)	1330-20-7	< 10	10	2

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N132181AA	08/06/2013 11:41	Christopher G Torres	5
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	T132182AA	08/07/2013 03:04	Sarah A Guill	2
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N132181AA	08/06/2013 11:41	Christopher G Torres	5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T132182AA	08/07/2013 03:04	Sarah A Guill	2

Sample Description: MW-17D-114-124-1V Grab Water
Fairfax Petroleum 26140

LL Sample # WW 7149068
LL Group # 1408927
Account # 12152

Project Name: Fairfax 26140

Collected: 08/02/2013 07:45

Submitted: 08/02/2013 17:05
Reported: 08/12/2013 13:26

Kleinfelder
1 Speen Street
Framingham MA 01701

FFX04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 200	200	10
10335	Acrolein	107-02-8	< 1,000	1,000	10
10335	Acrylonitrile	107-13-1	< 200	200	10
10335	**t-Amyl methyl ether**	994-05-8	**83**	50	10
10335	Benzene	71-43-2	< 50	50	10
10335	Bromodichloromethane	75-27-4	< 50	50	10
10335	Bromoform	75-25-2	< 50	50	10
10335	Bromomethane	74-83-9	< 50	50	10
10335	2-Butanone	78-93-3	< 100	100	10
10335	**t-Butyl alcohol**	75-65-0	**1,400**	800	10
10335	n-Butylbenzene	104-51-8	< 50	50	10
10335	sec-Butylbenzene	135-98-8	< 50	50	10
10335	Carbon Tetrachloride	56-23-5	< 50	50	10
10335	Chlorobenzene	108-90-7	< 50	50	10
10335	Chloroethane	75-00-3	< 50	50	10
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 100	100	10
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 50	50	10
10335	Chloromethane	74-87-3	< 50	50	10
10335	Dibromochloromethane	124-48-1	< 50	50	10
10335	1,2-Dichlorobenzene	95-50-1	< 50	50	10
10335	1,3-Dichlorobenzene	541-73-1	< 50	50	10
10335	1,4-Dichlorobenzene	106-46-7	< 50	50	10
10335	1,1-Dichloroethane	75-34-3	< 50	50	10
10335	1,2-Dichloroethane	107-06-2	< 50	50	10
10335	1,1-Dichloroethene	75-35-4	< 50	50	10
10335	**cis-1,2-Dichloroethene**	156-59-2	**150**	50	10
10335	trans-1,2-Dichloroethene	156-60-5	< 50	50	10
10335	1,2-Dichloropropane	78-87-5	< 50	50	10
10335	cis-1,3-Dichloropropene	10061-01-5	< 50	50	10
10335	trans-1,3-Dichloropropene	10061-02-6	< 50	50	10
10335	Ethyl t-butyl ether	637-92-3	< 50	50	10
10335	Ethylbenzene	100-41-4	< 50	50	10
10335	**di-Isopropyl ether**	108-20-3	**110**	50	10
10335	Isopropylbenzene	98-82-8	< 50	50	10
10335	p-Isopropyltoluene	99-87-6	< 50	50	10
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**5,900**	500	100
10335	Methylene Chloride	75-09-2	< 50	50	10
10335	Naphthalene	91-20-3	< 50	50	10
10335	n-Propylbenzene	103-65-1	< 50	50	10
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 50	50	10
10335	Tetrachloroethene	127-18-4	< 50	50	10
10335	**Toluene**	108-88-3	**150**	50	10
10335	1,1,1-Trichloroethane	71-55-6	< 50	50	10
10335	1,1,2-Trichloroethane	79-00-5	< 50	50	10
10335	Trichloroethene	79-01-6	< 50	50	10
10335	Trichlorofluoromethane	75-69-4	< 50	50	10
10335	1,2,4-Trimethylbenzene	95-63-6	< 50	50	10

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Analysis Report

Sample Description: MW-17D-114-124-1V Grab Water
Fairfax Petroleum 26140

LL Sample # WW 7149068
LL Group # 1408927
Account # 12152

Project Name: Fairfax 26140

Collected: 08/02/2013 07:45

Submitted: 08/02/2013 17:05
Reported: 08/12/2013 13:26

Kleinfelder
1 Speen Street
Framingham MA 01701

FFX04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 50	50	10
10335	Vinyl Chloride	75-01-4	< 50	50	10
10335	Xylene (Total)	1330-20-7	< 50	50	10

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N132181AA	08/06/2013 13:06	Christopher G Torres	10
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N132181AA	08/06/2013 13:29	Christopher G Torres	100
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N132181AA	08/06/2013 13:06	Christopher G Torres	10
01163	GC/MS VOA Water Prep	SW-846 5030B	2	N132181AA	08/06/2013 13:29	Christopher G Torres	100

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Analysis Report

Sample Description: MW-17D-127-137-1V Grab Water
Fairfax Petroleum 26140

LL Sample # WW 7149069
LL Group # 1408927
Account # 12152

Project Name: Fairfax 26140

Collected: 08/01/2013 08:45

Submitted: 08/02/2013 17:05
Reported: 08/12/2013 13:26

Kleinfelder
1 Speen Street
Framingham MA 01701

FFX05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 200	200	10
10335	Acrolein	107-02-8	< 1,000	1,000	10
10335	Acrylonitrile	107-13-1	< 200	200	10
10335	**t-Amyl methyl ether**	994-05-8	**190**	50	10
10335	Benzene	71-43-2	< 50	50	10
10335	Bromodichloromethane	75-27-4	< 50	50	10
10335	Bromoform	75-25-2	< 50	50	10
10335	Bromomethane	74-83-9	< 50	50	10
10335	2-Butanone	78-93-3	< 100	100	10
10335	**t-Butyl alcohol**	75-65-0	**3,200**	800	10
10335	n-Butylbenzene	104-51-8	< 50	50	10
10335	sec-Butylbenzene	135-98-8	< 50	50	10
10335	Carbon Tetrachloride	56-23-5	< 50	50	10
10335	Chlorobenzene	108-90-7	< 50	50	10
10335	Chloroethane	75-00-3	< 50	50	10
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 100	100	10
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 50	50	10
10335	Chloromethane	74-87-3	< 50	50	10
10335	Dibromochloromethane	124-48-1	< 50	50	10
10335	1,2-Dichlorobenzene	95-50-1	< 50	50	10
10335	1,3-Dichlorobenzene	541-73-1	< 50	50	10
10335	1,4-Dichlorobenzene	106-46-7	< 50	50	10
10335	1,1-Dichloroethane	75-34-3	< 50	50	10
10335	1,2-Dichloroethane	107-06-2	< 50	50	10
10335	1,1-Dichloroethene	75-35-4	< 50	50	10
10335	**cis-1,2-Dichloroethene**	156-59-2	**120**	50	10
10335	trans-1,2-Dichloroethene	156-60-5	< 50	50	10
10335	1,2-Dichloropropane	78-87-5	< 50	50	10
10335	cis-1,3-Dichloropropene	10061-01-5	< 50	50	10
10335	trans-1,3-Dichloropropene	10061-02-6	< 50	50	10
10335	Ethyl t-butyl ether	637-92-3	< 50	50	10
10335	Ethylbenzene	100-41-4	< 50	50	10
10335	**di-Isopropyl ether**	108-20-3	**270**	50	10
10335	Isopropylbenzene	98-82-8	< 50	50	10
10335	p-Isopropyltoluene	99-87-6	< 50	50	10
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**11,000**	250	50
10335	Methylene Chloride	75-09-2	< 50	50	10
10335	Naphthalene	91-20-3	< 50	50	10
10335	n-Propylbenzene	103-65-1	< 50	50	10
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 50	50	10
10335	Tetrachloroethene	127-18-4	< 50	50	10
10335	**Toluene**	108-88-3	**400**	50	10
10335	1,1,1-Trichloroethane	71-55-6	< 50	50	10
10335	1,1,2-Trichloroethane	79-00-5	< 50	50	10
10335	Trichloroethene	79-01-6	< 50	50	10
10335	Trichlorofluoromethane	75-69-4	< 50	50	10
10335	1,2,4-Trimethylbenzene	95-63-6	< 50	50	10

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Analysis Report

Sample Description: MW-17D-127-137-1V Grab Water
Fairfax Petroleum 26140

LL Sample # WW 7149069
LL Group # 1408927
Account # 12152

Project Name: Fairfax 26140

Collected: 08/01/2013 08:45

Submitted: 08/02/2013 17:05
Reported: 08/12/2013 13:26

Kleinfelder
1 Speen Street
Framingham MA 01701

FFX05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 50	50	10
10335	Vinyl Chloride	75-01-4	< 50	50	10
10335	Xylene (Total)	1330-20-7	< 50	50	10

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N132181AA	08/06/2013 13:53	Christopher G Torres	50
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	T132182AA	08/07/2013 03:28	Sarah A Guill	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N132181AA	08/06/2013 13:53	Christopher G Torres	50
01163	GC/MS VOA Water Prep	SW-846 5030B	2	T132182AA	08/07/2013 03:28	Sarah A Guill	10

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Analysis Report

Sample Description: Trip Blank Water
Fairfax Petroleum 26140

LL Sample # WW 7149070
LL Group # 1408927
Account # 12152

Project Name: Fairfax 26140

Collected: 07/25/2013

Kleinfelder
1 Speen Street
Framingham MA 01701

Submitted: 08/02/2013 17:05
Reported: 08/12/2013 13:26

FFX06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	t-Amyl methyl ether	994-05-8	< 5	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	t-Butyl alcohol	75-65-0	< 80	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	cis-1,2-Dichloroethene	156-59-2	< 5	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	di-Isopropyl ether	108-20-3	< 5	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	< 5	5	1
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	Tetrachloroethene	127-18-4	< 5	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1
10335	Vinyl Chloride	75-01-4	< 5	5	1

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Analysis Report

Sample Description: Trip Blank Water
Fairfax Petroleum 26140

LL Sample # WW 7149070
LL Group # 1408927
Account # 12152

Project Name: Fairfax 26140

Collected: 07/25/2013

Submitted: 08/02/2013 17:05
Reported: 08/12/2013 13:26

Kleinfelder
1 Speen Street
Framingham MA 01701

FFX06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	< 5	5	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	N132181AA	08/06/2013 04:44	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N132181AA	08/06/2013 04:44	Christopher G Torres	1

Quality Control Summary

Client Name: Kleinfelder Group Number: 1408927
Reported: 08/12/13 at 01:26 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: N132181AA	Sample number(s): 7149065-7149070							
Acetone	< 20	20.	ug/l	83		35-181		
Acrolein	< 100	100.	ug/l	101		46-146		
Acrylonitrile	< 20	20.	ug/l	84		61-130		
t-Amyl methyl ether	< 5	5.	ug/l	96		66-120		
Benzene	< 5	5.	ug/l	97		77-121		
Bromodichloromethane	< 5	5.	ug/l	98		73-120		
Bromoform	< 5	5.	ug/l	91		61-120		
Bromomethane	< 5	5.	ug/l	93		51-120		
2-Butanone	< 10	10.	ug/l	80		57-141		
t-Butyl alcohol	< 80	80.	ug/l	102		75-120		
n-Butylbenzene	< 5	5.	ug/l	91		73-130		
sec-Butylbenzene	< 5	5.	ug/l	93		74-124		
Carbon Tetrachloride	< 5	5.	ug/l	108		65-137		
Chlorobenzene	< 5	5.	ug/l	100		80-120		
Chloroethane	< 5	5.	ug/l	90		60-120		
2-Chloroethyl Vinyl Ether	< 10	10.	ug/l	88		52-127		
Chloroform	< 5	5.	ug/l	104		77-122		
Chloromethane	< 5	5.	ug/l	87		54-123		
Dibromochloromethane	< 5	5.	ug/l	97		72-120		
1,2-Dichlorobenzene	< 5	5.	ug/l	99		80-120		
1,3-Dichlorobenzene	< 5	5.	ug/l	98		80-120		
1,4-Dichlorobenzene	< 5	5.	ug/l	98		80-120		
1,1-Dichloroethane	< 5	5.	ug/l	98		79-120		
1,2-Dichloroethane	< 5	5.	ug/l	105		64-130		
1,1-Dichloroethene	< 5	5.	ug/l	107		76-124		
cis-1,2-Dichloroethene	< 5	5.	ug/l	101		80-120		
trans-1,2-Dichloroethene	< 5	5.	ug/l	104		80-120		
1,2-Dichloropropane	< 5	5.	ug/l	95		80-120		
cis-1,3-Dichloropropene	< 5	5.	ug/l	100		78-120		
trans-1,3-Dichloropropene	< 5	5.	ug/l	99		66-124		
Ethyl t-butyl ether	< 5	5.	ug/l	95		66-120		
Ethylbenzene	< 5	5.	ug/l	95		79-120		
di-Isopropyl ether	< 5	5.	ug/l	93		65-120		
Isopropylbenzene	< 5	5.	ug/l	95		77-120		
p-Isopropyltoluene	< 5	5.	ug/l	91		77-121		
Methyl Tertiary Butyl Ether	< 5	5.	ug/l	98		68-121		
Methylene Chloride	< 5	5.	ug/l	101		84-118		
Naphthalene	< 5	5.	ug/l	91		47-126		
n-Propylbenzene	< 5	5.	ug/l	95		77-130		
1,1,2,2-Tetrachloroethane	< 5	5.	ug/l	93		70-129		
Tetrachloroethene	< 5	5.	ug/l	101		79-120		
Toluene	< 5	5.	ug/l	97		79-120		
1,1,1-Trichloroethane	< 5	5.	ug/l	104		66-126		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1408927
Reported: 08/12/13 at 01:26 PM

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1,2-Trichloroethane	< 5	5.	ug/l	97		80-120		
Trichloroethene	< 5	5.	ug/l	103		80-120		
Trichlorofluoromethane	< 5	5.	ug/l	108		65-130		
1,2,4-Trimethylbenzene	< 5	5.	ug/l	95		69-122		
1,3,5-Trimethylbenzene	< 5	5.	ug/l	95		68-124		
Vinyl Chloride	< 5	5.	ug/l	96		63-120		
Xylene (Total)	< 5	5.	ug/l	95		77-120		
Batch number: T132182AA	Sample number(s): 7149067,7149069							
Acetone	< 20	20.	ug/l	111		35-181		
Acrolein	< 100	100.	ug/l	81		46-146		
Acrylonitrile	< 20	20.	ug/l	104		61-130		
t-Amyl methyl ether	< 5	5.	ug/l	99		66-120		
Benzene	< 5	5.	ug/l	101		77-121		
Bromodichloromethane	< 5	5.	ug/l	92		73-120		
Bromoform	< 5	5.	ug/l	80		61-120		
Bromomethane	< 5	5.	ug/l	84		51-120		
2-Butanone	< 10	10.	ug/l	92		57-141		
t-Butyl alcohol	< 80	80.	ug/l	99		75-120		
n-Butylbenzene	< 5	5.	ug/l	89		73-130		
sec-Butylbenzene	< 5	5.	ug/l	91		74-124		
Carbon Tetrachloride	< 5	5.	ug/l	112		65-137		
Chlorobenzene	< 5	5.	ug/l	97		80-120		
Chloroethane	< 5	5.	ug/l	76		60-120		
2-Chloroethyl Vinyl Ether	< 10	10.	ug/l	99		52-127		
Chloroform	< 5	5.	ug/l	104		77-122		
Chloromethane	< 5	5.	ug/l	94		54-123		
Dibromochloromethane	< 5	5.	ug/l	91		72-120		
1,2-Dichlorobenzene	< 5	5.	ug/l	99		80-120		
1,3-Dichlorobenzene	< 5	5.	ug/l	96		80-120		
1,4-Dichlorobenzene	< 5	5.	ug/l	98		80-120		
1,1-Dichloroethane	< 5	5.	ug/l	102		79-120		
1,2-Dichloroethane	< 5	5.	ug/l	105		64-130		
1,1-Dichloroethene	< 5	5.	ug/l	98		76-124		
cis-1,2-Dichloroethene	< 5	5.	ug/l	105		80-120		
trans-1,2-Dichloroethene	< 5	5.	ug/l	109		80-120		
1,2-Dichloropropane	< 5	5.	ug/l	102		80-120		
cis-1,3-Dichloropropene	< 5	5.	ug/l	95		78-120		
trans-1,3-Dichloropropene	< 5	5.	ug/l	90		66-124		
Ethyl t-butyl ether	< 5	5.	ug/l	106		66-120		
Ethylbenzene	< 5	5.	ug/l	96		79-120		
di-Isopropyl ether	< 5	5.	ug/l	106		65-120		
Isopropylbenzene	< 5	5.	ug/l	96		77-120		
p-Isopropyltoluene	< 5	5.	ug/l	90		77-121		
Methylene Chloride	< 5	5.	ug/l	105		84-118		
Naphthalene	< 5	5.	ug/l	106		47-126		
n-Propylbenzene	< 5	5.	ug/l	99		77-130		
1,1,2,2-Tetrachloroethane	< 5	5.	ug/l	100		70-129		
Tetrachloroethene	< 5	5.	ug/l	95		79-120		
Toluene	< 5	5.	ug/l	98		79-120		
1,1,1-Trichloroethane	< 5	5.	ug/l	111		66-126		
1,1,2-Trichloroethane	< 5	5.	ug/l	98		80-120		
Trichloroethene	< 5	5.	ug/l	102		80-120		
Trichlorofluoromethane	< 5	5.	ug/l	87		65-130		
1,2,4-Trimethylbenzene	< 5	5.	ug/l	99		69-122		
1,3,5-Trimethylbenzene	< 5	5.	ug/l	98		68-124		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1408927
Reported: 08/12/13 at 01:26 PM

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Vinyl Chloride	< 5	5.	ug/l	88		63-120		
Xylene (Total)	< 5	5.	ug/l	96		77-120		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: N132181AA	Sample number(s): 7149065-7149070 UNSPK: P149064								
Acetone	79	85	33-159	7	30				
Acrolein	88	95	33-147	7	30				
Acrylonitrile	76	84	43-146	10	30				
t-Amyl methyl ether	87	98	65-117	12	30				
Benzene	94	103	72-134	10	30				
Bromodichloromethane	94	104	78-125	11	30				
Bromoform	84	94	48-118	11	30				
Bromomethane	96	102	47-129	6	30				
2-Butanone	75	83	57-138	11	30				
t-Butyl alcohol	91	103	67-119	12	30				
n-Butylbenzene	92	104	59-156	12	30				
sec-Butylbenzene	90	101	79-125	11	30				
Carbon Tetrachloride	109	120	72-135	10	30				
Chlorobenzene	96	106	87-124	10	30				
Chloroethane	90	96	51-145	6	30				
2-Chloroethyl Vinyl Ether	0*	0*	10-151	0	30				
Chloroform	101	111	81-134	9	30				
Chloromethane	83	91	46-137	9	30				
Dibromochloromethane	91	101	74-116	11	30				
1,2-Dichlorobenzene	93	103	84-119	10	30				
1,3-Dichlorobenzene	93	103	86-121	10	30				
1,4-Dichlorobenzene	93	102	85-121	10	30				
1,1-Dichloroethane	94	104	84-129	10	30				
1,2-Dichloroethane	101	111	68-131	10	30				
1,1-Dichloroethene	105	117	75-155	11	30				
cis-1,2-Dichloroethene	95	104	80-141	9	30				
trans-1,2-Dichloroethene	104	112	81-142	8	30				
1,2-Dichloropropane	90	101	83-124	12	30				
cis-1,3-Dichloropropene	89	101	70-116	12	30				
trans-1,3-Dichloropropene	90	102	74-119	13	30				
Ethyl t-butyl ether	85	97	74-122	12	30				
Ethylbenzene	92	102	71-134	10	30				
di-Isopropyl ether	85	95	70-129	11	30				
Isopropylbenzene	93	102	75-128	9	30				
p-Isopropyltoluene	88	100	76-123	13	30				
Methyl Tertiary Butyl Ether	89	101	72-126	12	30				
Methylene Chloride	95	105	78-133	10	30				
Naphthalene	81	95	52-125	16	30				
n-Propylbenzene	92	102	74-134	11	30				
1,1,2,2-Tetrachloroethane	84	95	72-128	11	30				
Tetrachloroethene	100	110	80-128	9	30				
Toluene	94	104	80-125	11	30				

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1408927
Reported: 08/12/13 at 01:26 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,1,1-Trichloroethane	104	114	69-140	9	30				
1,1,2-Trichloroethane	90	101	71-141	12	30				
Trichloroethene	102	110	88-133	8	30				
Trichlorofluoromethane	112	118	64-146	5	30				
1,2,4-Trimethylbenzene	91	102	72-130	11	30				
1,3,5-Trimethylbenzene	91	102	65-132	12	30				
Vinyl Chloride	96	104	66-133	8	30				
Xylene (Total)	92	101	79-125	9	30				
Batch number: T132182AA	Sample number(s): 7149067,7149069 UNSPK: P145398								
Acetone	100	101	33-159	1	30				
Acrolein	91	88	33-147	4	30				
Acrylonitrile	96	100	43-146	4	30				
t-Amyl methyl ether	97	100	65-117	3	30				
Benzene	103	107	72-134	3	30				
Bromodichloromethane	94	96	78-125	2	30				
Bromoform	76	77	48-118	2	30				
Bromomethane	101	95	47-129	7	30				
2-Butanone	87	87	57-138	0	30				
t-Butyl alcohol	92	95	67-119	2	30				
n-Butylbenzene	89	93	59-156	5	30				
sec-Butylbenzene	95	97	79-125	3	30				
Carbon Tetrachloride	125	130	72-135	4	30				
Chlorobenzene	97	96	87-124	1	30				
Chloroethane	90	86	51-145	5	30				
2-Chloroethyl Vinyl Ether	97	97	10-151	0	30				
Chloroform	109	110	81-134	1	30				
Chloromethane	106	106	46-137	1	30				
Dibromochloromethane	89	87	74-116	2	30				
1,2-Dichlorobenzene	96	100	84-119	3	30				
1,3-Dichlorobenzene	96	97	86-121	1	30				
1,4-Dichlorobenzene	97	98	85-121	1	30				
1,1-Dichloroethane	106	110	84-129	4	30				
1,2-Dichloroethane	107	112	68-131	4	30				
1,1-Dichloroethene	106	110	75-155	4	30				
cis-1,2-Dichloroethene	106	108	80-141	2	30				
trans-1,2-Dichloroethene	113	117	81-142	3	30				
1,2-Dichloropropane	103	106	83-124	3	30				
cis-1,3-Dichloropropene	96	98	70-116	2	30				
trans-1,3-Dichloropropene	90	91	74-119	1	30				
Ethyl t-butyl ether	105	108	74-122	3	30				
Ethylbenzene	95	98	71-134	2	30				
di-Isopropyl ether	107	108	70-129	1	30				
Isopropylbenzene	97	98	75-128	1	30				
p-Isopropyltoluene	90	94	76-123	4	30				
Methylene Chloride	104	111	78-133	6	30				
Naphthalene	87	96	52-125	11	30				
n-Propylbenzene	103	106	74-134	2	30				
1,1,2,2-Tetrachloroethane	97	96	72-128	0	30				
Tetrachloroethene	96	99	80-128	3	30				
Toluene	101	102	80-125	1	30				
1,1,1-Trichloroethane	118	122	69-140	3	30				

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1408927
Reported: 08/12/13 at 01:26 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,1,2-Trichloroethane	95	96	71-141	1	30				
Trichloroethene	107	112	88-133	4	30				
Trichlorofluoromethane	112	113	64-146	1	30				
1,2,4-Trimethylbenzene	100	100	72-130	0	30				
1,3,5-Trimethylbenzene	99	102	65-132	3	30				
Vinyl Chloride	101	98	66-133	3	30				
Xylene (Total)	97	98	79-125	2	30				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260 VOCs
Batch number: N132181AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7149065	98	96	94	93
7149066	101	97	94	91
7149068	99	96	94	91
7149070	98	97	94	92
Blank	98	98	94	94
LCS	98	95	96	97
MS	99	100	96	97
MSD	99	100	96	96
Limits:	80-116	77-113	80-113	78-113

Analysis Name: 8260 VOCs
Batch number: T132182AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7149067	107	102	102	101
7149069	107	101	100	101
Blank	106	106	100	99
LCS	105	106	103	102
MS	108	105	102	104
MSD	107	106	102	103
Limits:	80-116	77-113	80-113	78-113

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Lancaster Laboratories

Analysis Request/Environmental Services Chain of Custody

For Lancaster Laboratories use only Acct. #: 12152

Group #: 1408927 Sample #: 7149065-70

Client:	Fairfax Petroleum	Acct. #:	
Project Name/#:	26140/ Great Falls	PWSID #:	
Project Address:	9901 Georgetown Pike Great Falls, VA		
Project Manager:	Mark C. Steele	P.O. #:	51141-265652
Sampler:		Quote #:	
Name of State where samples were collected:	Virginia		

For Lab Use Only
FSC:
SCR#:

Preservation Codes: H=HCl T=Thiosulfate N=HNO3 B=NaOH S=H2SO4 O=Other

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (Potable / NPDES)	Matrix: Other	Total # of Containers	Analyses Requested / Preservation Codes: Full List VOC+oxy8260	Remarks	Temperature of samples upon receipt (if requested)
MW-17D-91-101-3V	8/2/13	1048	X			X		3	X		
MW-17D-91-101-2V	8/2/13	1021	X			X		3	X		
MW-17D-91-101-1V	8/2/13	0952	X			X		3	X		
MW-17D-114-124-1V	8/2/13	0745	X			X		3	X		
MW-17D-127-137-1V	8/1/13	0845	X			X		3	X		
Trip Blank	7/25/13	—	X			X		2	X		

Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

Data Package Options (please circle if required)
Type I (validation/NJ reg) TX-TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

SDG Complete? Yes No

State-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicated QC sample and submit triplicate volume)
Internal COC required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
Bottle Storage	7/29/13	0530	[signature]	7/29/13	0530
[signature]	8/2/13	1415	Bottle Storage	8/2/13	1415
Bottle Storage	8/2/13	14:1v	[signature]	8/2/13	14:1v
[signature]	8/2/13	17:05			
			[signature]	8/2/13	1705

Lancaster Laboratories, Inc. 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 717-656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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ANALYTICAL RESULTS

Prepared by:	Prepared for:
Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601	Kleinfelder 1 Speen Street Framingham MA 01701

August 14, 2013

Project: Fairfax 26140

Submittal Date: 08/08/2013
Group Number: 1410213
PO Number: 51141-265652
State of Sample Origin: VA

Client Sample Description	Lancaster Labs (LL) #
DUP Grab Water	7155109
MW-17D-67-77-3V Grab Water	7155110
MW-17D-67-77-2V Grab Water	7155111
MW-17D-67-77-1V Grab Water	7155112
MW-17D-79-89-3V Grab Water	7155113
MW-17D-79-89-2V Grab Water	7155114
MW-17D-79-89-1V Grab Water	7155115
Trip Blank Water	7155116

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Kleinfelder	Attn: Mark Steele
ELECTRONIC COPY TO	Kleinfelder	Attn: Angela Vogt
ELECTRONIC COPY TO	Kleinfelder	Attn: Venelda Williams
ELECTRONIC COPY TO	Kleinfelder	Attn: Charlie Low
ELECTRONIC COPY TO	Kleinfelder	Attn: Paxton Wertz

Respectfully Submitted,

Natalie R. Luciano
Senior Specialist

(717) 556-7258

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Analysis Report

Sample Description: DUP Grab Water
26140

LL Sample # WW 7155109
LL Group # 1410213
Account # 12152

Project Name: Fairfax 26140

Collected: 08/07/2013 by PW

Submitted: 08/08/2013 16:40
Reported: 08/14/2013 13:20

Kleinfelder
1 Speen Street
Framingham MA 01701

26411

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 400	400	20
10335	Acrolein	107-02-8	< 2,000	2,000	20
10335	Acrylonitrile	107-13-1	< 400	400	20
10335	**t-Amyl methyl ether**	994-05-8	**360**	100	20
10335	Benzene	71-43-2	< 100	100	20
10335	Bromodichloromethane	75-27-4	< 100	100	20
10335	Bromoform	75-25-2	< 100	100	20
10335	Bromomethane	74-83-9	< 100	100	20
10335	2-Butanone	78-93-3	< 200	200	20
10335	**t-Butyl alcohol**	75-65-0	**5,800**	1,600	20
10335	n-Butylbenzene	104-51-8	< 100	100	20
10335	sec-Butylbenzene	135-98-8	< 100	100	20
10335	Carbon Tetrachloride	56-23-5	< 100	100	20
10335	Chlorobenzene	108-90-7	< 100	100	20
10335	Chloroethane	75-00-3	< 100	100	20
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 200	200	20
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 100	100	20
10335	Chloromethane	74-87-3	< 100	100	20
10335	Dibromochloromethane	124-48-1	< 100	100	20
10335	1,2-Dichlorobenzene	95-50-1	< 100	100	20
10335	1,3-Dichlorobenzene	541-73-1	< 100	100	20
10335	1,4-Dichlorobenzene	106-46-7	< 100	100	20
10335	1,1-Dichloroethane	75-34-3	< 100	100	20
10335	1,2-Dichloroethane	107-06-2	< 100	100	20
10335	1,1-Dichloroethene	75-35-4	< 100	100	20
10335	**cis-1,2-Dichloroethene**	156-59-2	**230**	100	20
10335	trans-1,2-Dichloroethene	156-60-5	< 100	100	20
10335	1,2-Dichloropropane	78-87-5	< 100	100	20
10335	cis-1,3-Dichloropropene	10061-01-5	< 100	100	20
10335	trans-1,3-Dichloropropene	10061-02-6	< 100	100	20
10335	Ethyl t-butyl ether	637-92-3	< 100	100	20
10335	Ethylbenzene	100-41-4	< 100	100	20
10335	**di-Isopropyl ether**	108-20-3	**520**	100	20
10335	Isopropylbenzene	98-82-8	< 100	100	20
10335	p-Isopropyltoluene	99-87-6	< 100	100	20
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**24,000**	1,000	200
10335	Methylene Chloride	75-09-2	< 100	100	20
10335	Naphthalene	91-20-3	< 100	100	20
10335	n-Propylbenzene	103-65-1	< 100	100	20
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 100	100	20
10335	Tetrachloroethene	127-18-4	< 100	100	20
10335	Toluene	108-88-3	< 100	100	20
10335	1,1,1-Trichloroethane	71-55-6	< 100	100	20
10335	1,1,2-Trichloroethane	79-00-5	< 100	100	20
10335	Trichloroethene	79-01-6	< 100	100	20
10335	Trichlorofluoromethane	75-69-4	< 100	100	20
10335	1,2,4-Trimethylbenzene	95-63-6	< 100	100	20

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Analysis Report

Sample Description: DUP Grab Water 26140

LL Sample # WW 7155109
LL Group # 1410213
Account # 12152

Project Name: Fairfax 26140

Collected: 08/07/2013 by PW

Submitted: 08/08/2013 16:40
Reported: 08/14/2013 13:20

Kleinfelder
1 Speen Street
Framingham MA 01701

26411

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 100	100	20
10335	Vinyl Chloride	75-01-4	< 100	100	20
10335	Xylene (Total)	1330-20-7	< 100	100	20

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	L132241AA	08/12/2013 16:39	Angela D Sneeringer	20
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	L132241AA	08/12/2013 17:01	Angela D Sneeringer	200
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L132241AA	08/12/2013 16:39	Angela D Sneeringer	20
01163	GC/MS VOA Water Prep	SW-846 5030B	2	L132241AA	08/12/2013 17:01	Angela D Sneeringer	200

Sample Description: MW-17D-67-77-3V Grab Water
26140

LL Sample # WW 7155110
LL Group # 1410213
Account # 12152

Project Name: Fairfax 26140

Collected: 08/06/2013 16:33 by PW

Kleinfelder
1 Speen Street
Framingham MA 01701

Submitted: 08/08/2013 16:40
Reported: 08/14/2013 13:20

26412

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 5,000	5,000	250
10335	Acrolein	107-02-8	< 25,000	25,000	250
10335	Acrylonitrile	107-13-1	< 5,000	5,000	250
10335	**t-Amyl methyl ether**	994-05-8	**1,900**	1,300	250
10335	Benzene	71-43-2	< 1,300	1,300	250
10335	Bromodichloromethane	75-27-4	< 1,300	1,300	250
10335	Bromoform	75-25-2	< 1,300	1,300	250
10335	Bromomethane	74-83-9	< 1,300	1,300	250
10335	2-Butanone	78-93-3	< 2,500	2,500	250
10335	**t-Butyl alcohol**	75-65-0	**33,000**	20,000	250
10335	n-Butylbenzene	104-51-8	< 1,300	1,300	250
10335	sec-Butylbenzene	135-98-8	< 1,300	1,300	250
10335	Carbon Tetrachloride	56-23-5	< 1,300	1,300	250
10335	Chlorobenzene	108-90-7	< 1,300	1,300	250
10335	Chloroethane	75-00-3	< 1,300	1,300	250
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 2,500	2,500	250
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 1,300	1,300	250
10335	Chloromethane	74-87-3	< 1,300	1,300	250
10335	Dibromochloromethane	124-48-1	< 1,300	1,300	250
10335	1,2-Dichlorobenzene	95-50-1	< 1,300	1,300	250
10335	1,3-Dichlorobenzene	541-73-1	< 1,300	1,300	250
10335	1,4-Dichlorobenzene	106-46-7	< 1,300	1,300	250
10335	1,1-Dichloroethane	75-34-3	< 1,300	1,300	250
10335	1,2-Dichloroethane	107-06-2	< 1,300	1,300	250
10335	1,1-Dichloroethene	75-35-4	< 1,300	1,300	250
10335	cis-1,2-Dichloroethene	156-59-2	< 1,300	1,300	250
10335	trans-1,2-Dichloroethene	156-60-5	< 1,300	1,300	250
10335	1,2-Dichloropropane	78-87-5	< 1,300	1,300	250
10335	cis-1,3-Dichloropropene	10061-01-5	< 1,300	1,300	250
10335	trans-1,3-Dichloropropene	10061-02-6	< 1,300	1,300	250
10335	Ethyl t-butyl ether	637-92-3	< 1,300	1,300	250
10335	Ethylbenzene	100-41-4	< 1,300	1,300	250
10335	**di-Isopropyl ether**	108-20-3	**2,800**	1,300	250
10335	Isopropylbenzene	98-82-8	< 1,300	1,300	250
10335	p-Isopropyltoluene	99-87-6	< 1,300	1,300	250
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**140,000**	5,000	1000
10335	Methylene Chloride	75-09-2	< 1,300	1,300	250
10335	Naphthalene	91-20-3	< 1,300	1,300	250
10335	n-Propylbenzene	103-65-1	< 1,300	1,300	250
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 1,300	1,300	250
10335	Tetrachloroethene	127-18-4	< 1,300	1,300	250
10335	Toluene	108-88-3	< 1,300	1,300	250
10335	1,1,1-Trichloroethane	71-55-6	< 1,300	1,300	250
10335	1,1,2-Trichloroethane	79-00-5	< 1,300	1,300	250
10335	Trichloroethene	79-01-6	< 1,300	1,300	250
10335	Trichlorofluoromethane	75-69-4	< 1,300	1,300	250
10335	1,2,4-Trimethylbenzene	95-63-6	< 1,300	1,300	250

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Analysis Report

Sample Description: MW-17D-67-77-3V Grab Water 26140

LL Sample # WW 7155110
LL Group # 1410213
Account # 12152

Project Name: Fairfax 26140

Collected: 08/06/2013 16:33 by PW

Kleinfelder
1 Speen Street
Framingham MA 01701

Submitted: 08/08/2013 16:40
Reported: 08/14/2013 13:20

26412

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 1,300	1,300	250
10335	Vinyl Chloride	75-01-4	< 1,300	1,300	250
10335	Xylene (Total)	1330-20-7	< 1,300	1,300	250

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	L132241AA	08/12/2013 19:34	Angela D Sneeringer	1000
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	L132251AA	08/13/2013 16:50	Angela D Sneeringer	250
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L132241AA	08/12/2013 19:34	Angela D Sneeringer	1000
01163	GC/MS VOA Water Prep	SW-846 5030B	2	L132251AA	08/13/2013 16:50	Angela D Sneeringer	250

Sample Description: MW-17D-67-77-2V Grab Water
26140

LL Sample # WW 7155111
LL Group # 1410213
Account # 12152

Project Name: Fairfax 26140

Collected: 08/06/2013 16:13 by PW

Kleinfelder
1 Speen Street
Framingham MA 01701

Submitted: 08/08/2013 16:40
Reported: 08/14/2013 13:20

26413

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 5,000	5,000	250
10335	Acrolein	107-02-8	< 25,000	25,000	250
10335	Acrylonitrile	107-13-1	< 5,000	5,000	250
10335	**t-Amyl methyl ether**	994-05-8	**1,900**	1,300	250
10335	Benzene	71-43-2	< 1,300	1,300	250
10335	Bromodichloromethane	75-27-4	< 1,300	1,300	250
10335	Bromoform	75-25-2	< 1,300	1,300	250
10335	Bromomethane	74-83-9	< 1,300	1,300	250
10335	2-Butanone	78-93-3	< 2,500	2,500	250
10335	**t-Butyl alcohol**	75-65-0	**35,000**	20,000	250
10335	n-Butylbenzene	104-51-8	< 1,300	1,300	250
10335	sec-Butylbenzene	135-98-8	< 1,300	1,300	250
10335	Carbon Tetrachloride	56-23-5	< 1,300	1,300	250
10335	Chlorobenzene	108-90-7	< 1,300	1,300	250
10335	Chloroethane	75-00-3	< 1,300	1,300	250
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 2,500	2,500	250
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 1,300	1,300	250
10335	Chloromethane	74-87-3	< 1,300	1,300	250
10335	Dibromochloromethane	124-48-1	< 1,300	1,300	250
10335	1,2-Dichlorobenzene	95-50-1	< 1,300	1,300	250
10335	1,3-Dichlorobenzene	541-73-1	< 1,300	1,300	250
10335	1,4-Dichlorobenzene	106-46-7	< 1,300	1,300	250
10335	1,1-Dichloroethane	75-34-3	< 1,300	1,300	250
10335	1,2-Dichloroethane	107-06-2	< 1,300	1,300	250
10335	1,1-Dichloroethene	75-35-4	< 1,300	1,300	250
10335	cis-1,2-Dichloroethene	156-59-2	< 1,300	1,300	250
10335	trans-1,2-Dichloroethene	156-60-5	< 1,300	1,300	250
10335	1,2-Dichloropropane	78-87-5	< 1,300	1,300	250
10335	cis-1,3-Dichloropropene	10061-01-5	< 1,300	1,300	250
10335	trans-1,3-Dichloropropene	10061-02-6	< 1,300	1,300	250
10335	Ethyl t-butyl ether	637-92-3	< 1,300	1,300	250
10335	Ethylbenzene	100-41-4	< 1,300	1,300	250
10335	**di-Isopropyl ether**	108-20-3	**2,900**	1,300	250
10335	Isopropylbenzene	98-82-8	< 1,300	1,300	250
10335	p-Isopropyltoluene	99-87-6	< 1,300	1,300	250
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**130,000**	5,000	1000
10335	Methylene Chloride	75-09-2	< 1,300	1,300	250
10335	Naphthalene	91-20-3	< 1,300	1,300	250
10335	n-Propylbenzene	103-65-1	< 1,300	1,300	250
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 1,300	1,300	250
10335	Tetrachloroethene	127-18-4	< 1,300	1,300	250
10335	Toluene	108-88-3	< 1,300	1,300	250
10335	1,1,1-Trichloroethane	71-55-6	< 1,300	1,300	250
10335	1,1,2-Trichloroethane	79-00-5	< 1,300	1,300	250
10335	Trichloroethene	79-01-6	< 1,300	1,300	250
10335	Trichlorofluoromethane	75-69-4	< 1,300	1,300	250
10335	1,2,4-Trimethylbenzene	95-63-6	< 1,300	1,300	250

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Analysis Report

Sample Description: MW-17D-67-77-2V Grab Water 26140

LL Sample # WW 7155111
LL Group # 1410213
Account # 12152

Project Name: Fairfax 26140

Collected: 08/06/2013 16:13 by PW

Submitted: 08/08/2013 16:40
Reported: 08/14/2013 13:20

Kleinfelder
1 Speen Street
Framingham MA 01701

26413

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 1,300	1,300	250
10335	Vinyl Chloride	75-01-4	< 1,300	1,300	250
10335	Xylene (Total)	1330-20-7	< 1,300	1,300	250

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	L132241AA	08/12/2013 19:56	Angela D Sneeringer	1000
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	L132251AA	08/13/2013 17:12	Angela D Sneeringer	250
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L132241AA	08/12/2013 19:56	Angela D Sneeringer	1000
01163	GC/MS VOA Water Prep	SW-846 5030B	2	L132251AA	08/13/2013 17:12	Angela D Sneeringer	250

Sample Description: MW-17D-67-77-1V Grab Water
26140

LL Sample # WW 7155112
LL Group # 1410213
Account # 12152

Project Name: Fairfax 26140

Collected: 08/06/2013 16:02 by PW

Kleinfelder
1 Speen Street
Framingham MA 01701

Submitted: 08/08/2013 16:40
Reported: 08/14/2013 13:20

26414

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 5,000	5,000	250
10335	Acrolein	107-02-8	< 25,000	25,000	250
10335	Acrylonitrile	107-13-1	< 5,000	5,000	250
10335	**t-Amyl methyl ether**	994-05-8	**1,900**	1,300	250
10335	Benzene	71-43-2	< 1,300	1,300	250
10335	Bromodichloromethane	75-27-4	< 1,300	1,300	250
10335	Bromoform	75-25-2	< 1,300	1,300	250
10335	Bromomethane	74-83-9	< 1,300	1,300	250
10335	2-Butanone	78-93-3	< 2,500	2,500	250
10335	**t-Butyl alcohol**	75-65-0	**35,000**	20,000	250
10335	n-Butylbenzene	104-51-8	< 1,300	1,300	250
10335	sec-Butylbenzene	135-98-8	< 1,300	1,300	250
10335	Carbon Tetrachloride	56-23-5	< 1,300	1,300	250
10335	Chlorobenzene	108-90-7	< 1,300	1,300	250
10335	Chloroethane	75-00-3	< 1,300	1,300	250
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 2,500	2,500	250
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 1,300	1,300	250
10335	Chloromethane	74-87-3	< 1,300	1,300	250
10335	Dibromochloromethane	124-48-1	< 1,300	1,300	250
10335	1,2-Dichlorobenzene	95-50-1	< 1,300	1,300	250
10335	1,3-Dichlorobenzene	541-73-1	< 1,300	1,300	250
10335	1,4-Dichlorobenzene	106-46-7	< 1,300	1,300	250
10335	1,1-Dichloroethane	75-34-3	< 1,300	1,300	250
10335	1,2-Dichloroethane	107-06-2	< 1,300	1,300	250
10335	1,1-Dichloroethene	75-35-4	< 1,300	1,300	250
10335	cis-1,2-Dichloroethene	156-59-2	< 1,300	1,300	250
10335	trans-1,2-Dichloroethene	156-60-5	< 1,300	1,300	250
10335	1,2-Dichloropropane	78-87-5	< 1,300	1,300	250
10335	cis-1,3-Dichloropropene	10061-01-5	< 1,300	1,300	250
10335	trans-1,3-Dichloropropene	10061-02-6	< 1,300	1,300	250
10335	Ethyl t-butyl ether	637-92-3	< 1,300	1,300	250
10335	Ethylbenzene	100-41-4	< 1,300	1,300	250
10335	**di-Isopropyl ether**	108-20-3	**2,900**	1,300	250
10335	Isopropylbenzene	98-82-8	< 1,300	1,300	250
10335	p-Isopropyltoluene	99-87-6	< 1,300	1,300	250
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**130,000**	5,000	1000
10335	Methylene Chloride	75-09-2	< 1,300	1,300	250
10335	Naphthalene	91-20-3	< 1,300	1,300	250
10335	n-Propylbenzene	103-65-1	< 1,300	1,300	250
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 1,300	1,300	250
10335	Tetrachloroethene	127-18-4	< 1,300	1,300	250
10335	Toluene	108-88-3	< 1,300	1,300	250
10335	1,1,1-Trichloroethane	71-55-6	< 1,300	1,300	250
10335	1,1,2-Trichloroethane	79-00-5	< 1,300	1,300	250
10335	Trichloroethene	79-01-6	< 1,300	1,300	250
10335	Trichlorofluoromethane	75-69-4	< 1,300	1,300	250
10335	1,2,4-Trimethylbenzene	95-63-6	< 1,300	1,300	250

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Analysis Report

Sample Description: MW-17D-67-77-1V Grab Water 26140

LL Sample # WW 7155112
LL Group # 1410213
Account # 12152

Project Name: Fairfax 26140

Collected: 08/06/2013 16:02 by PW

Submitted: 08/08/2013 16:40
Reported: 08/14/2013 13:20

Kleinfelder
1 Speen Street
Framingham MA 01701

26414

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 1,300	1,300	250
10335	Vinyl Chloride	75-01-4	< 1,300	1,300	250
10335	Xylene (Total)	1330-20-7	< 1,300	1,300	250

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	L132241AA	08/12/2013 20:18	Angela D Sneeringer	1000
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	L132251AA	08/13/2013 17:34	Angela D Sneeringer	250
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L132241AA	08/12/2013 20:18	Angela D Sneeringer	1000
01163	GC/MS VOA Water Prep	SW-846 5030B	2	L132251AA	08/13/2013 17:34	Angela D Sneeringer	250

Sample Description: MW-17D-79-89-3V Grab Water 26140

LL Sample # WW 7155113
LL Group # 1410213
Account # 12152

Project Name: Fairfax 26140

Collected: 08/07/2013 11:15 by PW

Submitted: 08/08/2013 16:40
Reported: 08/14/2013 13:20

Kleinfelder
1 Speen Street
Framingham MA 01701

26415

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 400	400	20
10335	Acrolein	107-02-8	< 2,000	2,000	20
10335	Acrylonitrile	107-13-1	< 400	400	20
10335	**t-Amyl methyl ether**	994-05-8	**360**	100	20
10335	Benzene	71-43-2	< 100	100	20
10335	Bromodichloromethane	75-27-4	< 100	100	20
10335	Bromoform	75-25-2	< 100	100	20
10335	Bromomethane	74-83-9	< 100	100	20
10335	2-Butanone	78-93-3	< 200	200	20
10335	**t-Butyl alcohol**	75-65-0	**5,900**	1,600	20
10335	n-Butylbenzene	104-51-8	< 100	100	20
10335	sec-Butylbenzene	135-98-8	< 100	100	20
10335	Carbon Tetrachloride	56-23-5	< 100	100	20
10335	Chlorobenzene	108-90-7	< 100	100	20
10335	Chloroethane	75-00-3	< 100	100	20
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 200	200	20
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 100	100	20
10335	Chloromethane	74-87-3	< 100	100	20
10335	Dibromochloromethane	124-48-1	< 100	100	20
10335	1,2-Dichlorobenzene	95-50-1	< 100	100	20
10335	1,3-Dichlorobenzene	541-73-1	< 100	100	20
10335	1,4-Dichlorobenzene	106-46-7	< 100	100	20
10335	1,1-Dichloroethane	75-34-3	< 100	100	20
10335	1,2-Dichloroethane	107-06-2	< 100	100	20
10335	1,1-Dichloroethene	75-35-4	< 100	100	20
10335	**cis-1,2-Dichloroethene**	156-59-2	**240**	100	20
10335	trans-1,2-Dichloroethene	156-60-5	< 100	100	20
10335	1,2-Dichloropropane	78-87-5	< 100	100	20
10335	cis-1,3-Dichloropropene	10061-01-5	< 100	100	20
10335	trans-1,3-Dichloropropene	10061-02-6	< 100	100	20
10335	Ethyl t-butyl ether	637-92-3	< 100	100	20
10335	Ethylbenzene	100-41-4	< 100	100	20
10335	**di-Isopropyl ether**	108-20-3	**520**	100	20
10335	Isopropylbenzene	98-82-8	< 100	100	20
10335	p-Isopropyltoluene	99-87-6	< 100	100	20
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**24,000**	1,000	200
10335	Methylene Chloride	75-09-2	< 100	100	20
10335	Naphthalene	91-20-3	< 100	100	20
10335	n-Propylbenzene	103-65-1	< 100	100	20
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 100	100	20
10335	Tetrachloroethene	127-18-4	< 100	100	20
10335	Toluene	108-88-3	< 100	100	20
10335	1,1,1-Trichloroethane	71-55-6	< 100	100	20
10335	1,1,2-Trichloroethane	79-00-5	< 100	100	20
10335	Trichloroethene	79-01-6	< 100	100	20
10335	Trichlorofluoromethane	75-69-4	< 100	100	20
10335	1,2,4-Trimethylbenzene	95-63-6	< 100	100	20

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Analysis Report

Sample Description: MW-17D-79-89-3V Grab Water 26140

LL Sample # WW 7155113
LL Group # 1410213
Account # 12152

Project Name: Fairfax 26140

Collected: 08/07/2013 11:15 by PW

Kleinfelder
1 Speen Street
Framingham MA 01701

Submitted: 08/08/2013 16:40
Reported: 08/14/2013 13:20

26415

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 100	100	20
10335	Vinyl Chloride	75-01-4	< 100	100	20
10335	Xylene (Total)	1330-20-7	< 100	100	20

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	L132241AA	08/12/2013 17:23	Angela D Sneeringer	20
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	L132241AA	08/12/2013 17:45	Angela D Sneeringer	200
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L132241AA	08/12/2013 17:23	Angela D Sneeringer	20
01163	GC/MS VOA Water Prep	SW-846 5030B	2	L132241AA	08/12/2013 17:45	Angela D Sneeringer	200

Sample Description: MW-17D-79-89-2V Grab Water 26140

LL Sample # WW 7155114
LL Group # 1410213
Account # 12152

Project Name: Fairfax 26140

Collected: 08/07/2013 10:52 by PW

Kleinfelder
1 Speen Street
Framingham MA 01701

Submitted: 08/08/2013 16:40
Reported: 08/14/2013 13:20

26416

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 400	400	20
10335	Acrolein	107-02-8	< 2,000	2,000	20
10335	Acrylonitrile	107-13-1	< 400	400	20
10335	**t-Amyl methyl ether**	994-05-8	**360**	100	20
10335	Benzene	71-43-2	< 100	100	20
10335	Bromodichloromethane	75-27-4	< 100	100	20
10335	Bromoform	75-25-2	< 100	100	20
10335	Bromomethane	74-83-9	< 100	100	20
10335	2-Butanone	78-93-3	< 200	200	20
10335	**t-Butyl alcohol**	75-65-0	**5,800**	1,600	20
10335	n-Butylbenzene	104-51-8	< 100	100	20
10335	sec-Butylbenzene	135-98-8	< 100	100	20
10335	Carbon Tetrachloride	56-23-5	< 100	100	20
10335	Chlorobenzene	108-90-7	< 100	100	20
10335	Chloroethane	75-00-3	< 100	100	20
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 200	200	20
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 100	100	20
10335	Chloromethane	74-87-3	< 100	100	20
10335	Dibromochloromethane	124-48-1	< 100	100	20
10335	1,2-Dichlorobenzene	95-50-1	< 100	100	20
10335	1,3-Dichlorobenzene	541-73-1	< 100	100	20
10335	1,4-Dichlorobenzene	106-46-7	< 100	100	20
10335	1,1-Dichloroethane	75-34-3	< 100	100	20
10335	1,2-Dichloroethane	107-06-2	< 100	100	20
10335	1,1-Dichloroethene	75-35-4	< 100	100	20
10335	**cis-1,2-Dichloroethene**	156-59-2	**230**	100	20
10335	trans-1,2-Dichloroethene	156-60-5	< 100	100	20
10335	1,2-Dichloropropane	78-87-5	< 100	100	20
10335	cis-1,3-Dichloropropene	10061-01-5	< 100	100	20
10335	trans-1,3-Dichloropropene	10061-02-6	< 100	100	20
10335	Ethyl t-butyl ether	637-92-3	< 100	100	20
10335	Ethylbenzene	100-41-4	< 100	100	20
10335	**di-Isopropyl ether**	108-20-3	**520**	100	20
10335	Isopropylbenzene	98-82-8	< 100	100	20
10335	p-Isopropyltoluene	99-87-6	< 100	100	20
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**24,000**	1,000	200
10335	Methylene Chloride	75-09-2	< 100	100	20
10335	Naphthalene	91-20-3	< 100	100	20
10335	n-Propylbenzene	103-65-1	< 100	100	20
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 100	100	20
10335	Tetrachloroethene	127-18-4	< 100	100	20
10335	Toluene	108-88-3	< 100	100	20
10335	1,1,1-Trichloroethane	71-55-6	< 100	100	20
10335	1,1,2-Trichloroethane	79-00-5	< 100	100	20
10335	Trichloroethene	79-01-6	< 100	100	20
10335	Trichlorofluoromethane	75-69-4	< 100	100	20
10335	1,2,4-Trimethylbenzene	95-63-6	< 100	100	20

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Analysis Report

Sample Description: MW-17D-79-89-2V Grab Water 26140

LL Sample # WW 7155114
LL Group # 1410213
Account # 12152

Project Name: Fairfax 26140

Collected: 08/07/2013 10:52 by PW

Kleinfelder
1 Speen Street
Framingham MA 01701

Submitted: 08/08/2013 16:40
Reported: 08/14/2013 13:20

26416

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 100	100	20
10335	Vinyl Chloride	75-01-4	< 100	100	20
10335	Xylene (Total)	1330-20-7	< 100	100	20

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	L132241AA	08/12/2013 18:06	Angela D Sneeringer	20
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	L132241AA	08/12/2013 18:28	Angela D Sneeringer	200
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L132241AA	08/12/2013 18:06	Angela D Sneeringer	20
01163	GC/MS VOA Water Prep	SW-846 5030B	2	L132241AA	08/12/2013 18:28	Angela D Sneeringer	200

Sample Description: MW-17D-79-89-1V Grab Water
26140

LL Sample # WW 7155115
LL Group # 1410213
Account # 12152

Project Name: Fairfax 26140

Collected: 08/07/2013 10:29 by PW

Submitted: 08/08/2013 16:40
Reported: 08/14/2013 13:20

Kleinfelder
1 Speen Street
Framingham MA 01701

26417

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 400	400	20
10335	Acrolein	107-02-8	< 2,000	2,000	20
10335	Acrylonitrile	107-13-1	< 400	400	20
10335	**t-Amyl methyl ether**	994-05-8	**270**	100	20
10335	Benzene	71-43-2	< 100	100	20
10335	Bromodichloromethane	75-27-4	< 100	100	20
10335	Bromoform	75-25-2	< 100	100	20
10335	Bromomethane	74-83-9	< 100	100	20
10335	2-Butanone	78-93-3	< 200	200	20
10335	**t-Butyl alcohol**	75-65-0	**4,400**	1,600	20
10335	n-Butylbenzene	104-51-8	< 100	100	20
10335	sec-Butylbenzene	135-98-8	< 100	100	20
10335	Carbon Tetrachloride	56-23-5	< 100	100	20
10335	Chlorobenzene	108-90-7	< 100	100	20
10335	Chloroethane	75-00-3	< 100	100	20
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 200	200	20
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 100	100	20
10335	Chloromethane	74-87-3	< 100	100	20
10335	Dibromochloromethane	124-48-1	< 100	100	20
10335	1,2-Dichlorobenzene	95-50-1	< 100	100	20
10335	1,3-Dichlorobenzene	541-73-1	< 100	100	20
10335	1,4-Dichlorobenzene	106-46-7	< 100	100	20
10335	1,1-Dichloroethane	75-34-3	< 100	100	20
10335	1,2-Dichloroethane	107-06-2	< 100	100	20
10335	1,1-Dichloroethene	75-35-4	< 100	100	20
10335	**cis-1,2-Dichloroethene**	156-59-2	**220**	100	20
10335	trans-1,2-Dichloroethene	156-60-5	< 100	100	20
10335	1,2-Dichloropropane	78-87-5	< 100	100	20
10335	cis-1,3-Dichloropropene	10061-01-5	< 100	100	20
10335	trans-1,3-Dichloropropene	10061-02-6	< 100	100	20
10335	Ethyl t-butyl ether	637-92-3	< 100	100	20
10335	Ethylbenzene	100-41-4	< 100	100	20
10335	**di-Isopropyl ether**	108-20-3	**400**	100	20
10335	Isopropylbenzene	98-82-8	< 100	100	20
10335	p-Isopropyltoluene	99-87-6	< 100	100	20
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**19,000**	1,000	200
10335	Methylene Chloride	75-09-2	< 100	100	20
10335	Naphthalene	91-20-3	< 100	100	20
10335	n-Propylbenzene	103-65-1	< 100	100	20
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 100	100	20
10335	Tetrachloroethene	127-18-4	< 100	100	20
10335	Toluene	108-88-3	< 100	100	20
10335	1,1,1-Trichloroethane	71-55-6	< 100	100	20
10335	1,1,2-Trichloroethane	79-00-5	< 100	100	20
10335	Trichloroethene	79-01-6	< 100	100	20
10335	Trichlorofluoromethane	75-69-4	< 100	100	20
10335	1,2,4-Trimethylbenzene	95-63-6	< 100	100	20

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Analysis Report

Sample Description: MW-17D-79-89-1V Grab Water 26140

LL Sample # WW 7155115
LL Group # 1410213
Account # 12152

Project Name: Fairfax 26140

Collected: 08/07/2013 10:29 by PW

Kleinfelder
1 Speen Street
Framingham MA 01701

Submitted: 08/08/2013 16:40
Reported: 08/14/2013 13:20

26417

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	1,3,5-Trimethylbenzene	108-67-8	< 100	100	20
10335	Vinyl Chloride	75-01-4	< 100	100	20
10335	Xylene (Total)	1330-20-7	< 100	100	20

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	L132241AA	08/12/2013 18:50	Angela D Sneeringer	20
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	L132241AA	08/12/2013 19:12	Angela D Sneeringer	200
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L132241AA	08/12/2013 18:50	Angela D Sneeringer	20
01163	GC/MS VOA Water Prep	SW-846 5030B	2	L132241AA	08/12/2013 19:12	Angela D Sneeringer	200

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Analysis Report

Sample Description: Trip Blank Water
26140

LL Sample # WW 7155116
LL Group # 1410213
Account # 12152

Project Name: Fairfax 26140

Collected: 08/06/2013

Kleinfelder
1 Speen Street
Framingham MA 01701

Submitted: 08/08/2013 16:40
Reported: 08/14/2013 13:20

26418

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Acetone	67-64-1	< 20	20	1
10335	Acrolein	107-02-8	< 100	100	1
10335	Acrylonitrile	107-13-1	< 20	20	1
10335	t-Amyl methyl ether	994-05-8	< 5	5	1
10335	Benzene	71-43-2	< 5	5	1
10335	Bromodichloromethane	75-27-4	< 5	5	1
10335	Bromoform	75-25-2	< 5	5	1
10335	Bromomethane	74-83-9	< 5	5	1
10335	2-Butanone	78-93-3	< 10	10	1
10335	t-Butyl alcohol	75-65-0	< 80	80	1
10335	n-Butylbenzene	104-51-8	< 5	5	1
10335	sec-Butylbenzene	135-98-8	< 5	5	1
10335	Carbon Tetrachloride	56-23-5	< 5	5	1
10335	Chlorobenzene	108-90-7	< 5	5	1
10335	Chloroethane	75-00-3	< 5	5	1
10335	2-Chloroethyl Vinyl Ether	110-75-8	< 10	10	1
	2-Chloroethyl vinyl ether may not be recovered if acid was used to preserve this sample.				
10335	Chloroform	67-66-3	< 5	5	1
10335	Chloromethane	74-87-3	< 5	5	1
10335	Dibromochloromethane	124-48-1	< 5	5	1
10335	1,2-Dichlorobenzene	95-50-1	< 5	5	1
10335	1,3-Dichlorobenzene	541-73-1	< 5	5	1
10335	1,4-Dichlorobenzene	106-46-7	< 5	5	1
10335	1,1-Dichloroethane	75-34-3	< 5	5	1
10335	1,2-Dichloroethane	107-06-2	< 5	5	1
10335	1,1-Dichloroethene	75-35-4	< 5	5	1
10335	cis-1,2-Dichloroethene	156-59-2	< 5	5	1
10335	trans-1,2-Dichloroethene	156-60-5	< 5	5	1
10335	1,2-Dichloropropane	78-87-5	< 5	5	1
10335	cis-1,3-Dichloropropene	10061-01-5	< 5	5	1
10335	trans-1,3-Dichloropropene	10061-02-6	< 5	5	1
10335	Ethyl t-butyl ether	637-92-3	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	di-Isopropyl ether	108-20-3	< 5	5	1
10335	Isopropylbenzene	98-82-8	< 5	5	1
10335	p-Isopropyltoluene	99-87-6	< 5	5	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	< 5	5	1
10335	Methylene Chloride	75-09-2	< 5	5	1
10335	Naphthalene	91-20-3	< 5	5	1
10335	n-Propylbenzene	103-65-1	< 5	5	1
10335	1,1,2,2-Tetrachloroethane	79-34-5	< 5	5	1
10335	Tetrachloroethene	127-18-4	< 5	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	1,1,1-Trichloroethane	71-55-6	< 5	5	1
10335	1,1,2-Trichloroethane	79-00-5	< 5	5	1
10335	Trichloroethene	79-01-6	< 5	5	1
10335	Trichlorofluoromethane	75-69-4	< 5	5	1
10335	1,2,4-Trimethylbenzene	95-63-6	< 5	5	1
10335	1,3,5-Trimethylbenzene	108-67-8	< 5	5	1
10335	Vinyl Chloride	75-01-4	< 5	5	1

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Analysis Report

Sample Description: Trip Blank Water
26140

LL Sample # WW 7155116
LL Group # 1410213
Account # 12152

Project Name: Fairfax 26140

Collected: 08/06/2013

Kleinfelder
1 Speen Street
Framingham MA 01701

Submitted: 08/08/2013 16:40
Reported: 08/14/2013 13:20

26418

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10335	Xylene (Total)	1330-20-7	< 5	5	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 Kleinfelder Full	SW-846 8260B	1	L132241AA	08/12/2013 16:17	Angela D Sneeringer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L132241AA	08/12/2013 16:17	Angela D Sneeringer	1

Quality Control Summary

Client Name: Kleinfelder Group Number: 1410213
Reported: 08/14/13 at 01:20 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: L132241AA	Sample number(s): 7155109-7155116							
Acetone	< 20	20.	ug/l	84		35-181		
Acrolein	< 100	100.	ug/l	81		46-146		
Acrylonitrile	< 20	20.	ug/l	88		61-130		
t-Amyl methyl ether	< 5	5.	ug/l	92		66-120		
Benzene	< 5	5.	ug/l	95		77-121		
Bromodichloromethane	< 5	5.	ug/l	95		73-120		
Bromoform	< 5	5.	ug/l	89		61-120		
Bromomethane	< 5	5.	ug/l	88		51-120		
2-Butanone	< 10	10.	ug/l	89		57-141		
t-Butyl alcohol	< 80	80.	ug/l	105		75-120		
n-Butylbenzene	< 5	5.	ug/l	86		73-130		
sec-Butylbenzene	< 5	5.	ug/l	88		74-124		
Carbon Tetrachloride	< 5	5.	ug/l	106		65-137		
Chlorobenzene	< 5	5.	ug/l	92		80-120		
Chloroethane	< 5	5.	ug/l	83		60-120		
2-Chloroethyl Vinyl Ether	< 10	10.	ug/l	82		52-127		
Chloroform	< 5	5.	ug/l	99		77-122		
Chloromethane	< 5	5.	ug/l	84		54-123		
Dibromochloromethane	< 5	5.	ug/l	93		72-120		
1,2-Dichlorobenzene	< 5	5.	ug/l	90		80-120		
1,3-Dichlorobenzene	< 5	5.	ug/l	89		80-120		
1,4-Dichlorobenzene	< 5	5.	ug/l	90		80-120		
1,1-Dichloroethane	< 5	5.	ug/l	96		79-120		
1,2-Dichloroethane	< 5	5.	ug/l	104		64-130		
1,1-Dichloroethene	< 5	5.	ug/l	99		76-124		
cis-1,2-Dichloroethene	< 5	5.	ug/l	92		80-120		
trans-1,2-Dichloroethene	< 5	5.	ug/l	97		80-120		
1,2-Dichloropropane	< 5	5.	ug/l	98		80-120		
cis-1,3-Dichloropropene	< 5	5.	ug/l	95		78-120		
trans-1,3-Dichloropropene	< 5	5.	ug/l	94		66-124		
Ethyl t-butyl ether	< 5	5.	ug/l	96		66-120		
Ethylbenzene	< 5	5.	ug/l	92		79-120		
di-Isopropyl ether	< 5	5.	ug/l	104		65-120		
Isopropylbenzene	< 5	5.	ug/l	90		77-120		
p-Isopropyltoluene	< 5	5.	ug/l	86		77-121		
Methyl Tertiary Butyl Ether	< 5	5.	ug/l	96		68-121		
Methylene Chloride	< 5	5.	ug/l	95		84-118		
Naphthalene	< 5	5.	ug/l	83		47-126		
n-Propylbenzene	< 5	5.	ug/l	90		77-130		
1,1,2,2-Tetrachloroethane	< 5	5.	ug/l	88		70-129		
Tetrachloroethene	< 5	5.	ug/l	96		79-120		
Toluene	< 5	5.	ug/l	93		79-120		
1,1,1-Trichloroethane	< 5	5.	ug/l	92		66-126		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1410213
Reported: 08/14/13 at 01:20 PM

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,1,2-Trichloroethane	< 5	5.	ug/l	93		80-120		
Trichloroethene	< 5	5.	ug/l	95		80-120		
Trichlorofluoromethane	< 5	5.	ug/l	109		65-130		
1,2,4-Trimethylbenzene	< 5	5.	ug/l	89		69-122		
1,3,5-Trimethylbenzene	< 5	5.	ug/l	89		68-124		
Vinyl Chloride	< 5	5.	ug/l	89		63-120		
Xylene (Total)	< 5	5.	ug/l	90		77-120		
Batch number: L132251AA	Sample number(s): 7155110-7155112							
Acetone	< 20	20.	ug/l	85		35-181		
Acrolein	< 100	100.	ug/l	99		46-146		
Acrylonitrile	< 20	20.	ug/l	89		61-130		
t-Amyl methyl ether	< 5	5.	ug/l	91		66-120		
Benzene	< 5	5.	ug/l	95		77-121		
Bromodichloromethane	< 5	5.	ug/l	98		73-120		
Bromoform	< 5	5.	ug/l	92		61-120		
Bromomethane	< 5	5.	ug/l	90		51-120		
2-Butanone	< 10	10.	ug/l	90		57-141		
t-Butyl alcohol	< 80	80.	ug/l	103		75-120		
n-Butylbenzene	< 5	5.	ug/l	86		73-130		
sec-Butylbenzene	< 5	5.	ug/l	87		74-124		
Carbon Tetrachloride	< 5	5.	ug/l	110		65-137		
Chlorobenzene	< 5	5.	ug/l	94		80-120		
Chloroethane	< 5	5.	ug/l	85		60-120		
2-Chloroethyl Vinyl Ether	< 10	10.	ug/l	82		52-127		
Chloroform	< 5	5.	ug/l	102		77-122		
Chloromethane	< 5	5.	ug/l	84		54-123		
Dibromochloromethane	< 5	5.	ug/l	96		72-120		
1,2-Dichlorobenzene	< 5	5.	ug/l	91		80-120		
1,3-Dichlorobenzene	< 5	5.	ug/l	91		80-120		
1,4-Dichlorobenzene	< 5	5.	ug/l	91		80-120		
1,1-Dichloroethane	< 5	5.	ug/l	97		79-120		
1,2-Dichloroethane	< 5	5.	ug/l	110		64-130		
1,1-Dichloroethene	< 5	5.	ug/l	95		76-124		
cis-1,2-Dichloroethene	< 5	5.	ug/l	94		80-120		
trans-1,2-Dichloroethene	< 5	5.	ug/l	96		80-120		
1,2-Dichloropropane	< 5	5.	ug/l	99		80-120		
cis-1,3-Dichloropropene	< 5	5.	ug/l	94		78-120		
trans-1,3-Dichloropropene	< 5	5.	ug/l	93		66-124		
Ethyl t-butyl ether	< 5	5.	ug/l	93		66-120		
Ethylbenzene	< 5	5.	ug/l	92		79-120		
di-Isopropyl ether	< 5	5.	ug/l	102		65-120		
Isopropylbenzene	< 5	5.	ug/l	91		77-120		
p-Isopropyltoluene	< 5	5.	ug/l	85		77-121		
Methylene Chloride	< 5	5.	ug/l	95		84-118		
Naphthalene	< 5	5.	ug/l	82		47-126		
n-Propylbenzene	< 5	5.	ug/l	89		77-130		
1,1,2,2-Tetrachloroethane	< 5	5.	ug/l	88		70-129		
Tetrachloroethene	< 5	5.	ug/l	98		79-120		
Toluene	< 5	5.	ug/l	94		79-120		
1,1,1-Trichloroethane	< 5	5.	ug/l	101		66-126		
1,1,2-Trichloroethane	< 5	5.	ug/l	94		80-120		
Trichloroethene	< 5	5.	ug/l	97		80-120		
Trichlorofluoromethane	< 5	5.	ug/l	114		65-130		
1,2,4-Trimethylbenzene	< 5	5.	ug/l	89		69-122		
1,3,5-Trimethylbenzene	< 5	5.	ug/l	88		68-124		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder
Reported: 08/14/13 at 01:20 PM

Group Number: 1410213

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Vinyl Chloride	< 5	5.	ug/l	89		63-120		
Xylene (Total)	< 5	5.	ug/l	91		77-120		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: L132241AA	Sample number(s): 7155109-7155116 UNSPK: P155151								
Acetone	87	88	33-159	1	30				
Acrolein	83	83	33-147	0	30				
Acrylonitrile	93	93	43-146	0	30				
t-Amyl methyl ether	99	100	65-117	1	30				
Benzene	110	109	72-134	1	30				
Bromodichloromethane	107	106	78-125	1	30				
Bromoform	97	96	48-118	2	30				
Bromomethane	98	96	47-129	2	30				
2-Butanone	94	96	57-138	2	30				
t-Butyl alcohol	102	101	67-119	1	30				
n-Butylbenzene	99	97	59-156	2	30				
sec-Butylbenzene	101	100	79-125	1	30				
Carbon Tetrachloride	128	125	72-135	3	30				
Chlorobenzene	105	103	87-124	2	30				
Chloroethane	95	93	51-145	2	30				
2-Chloroethyl Vinyl Ether	0*	0*	10-151	0	30				
Chloroform	114	112	81-134	2	30				
Chloromethane	95	94	46-137	1	30				
Dibromochloromethane	105	102	74-116	3	30				
1,2-Dichlorobenzene	99	99	84-119	1	30				
1,3-Dichlorobenzene	101	99	86-121	1	30				
1,4-Dichlorobenzene	100	100	85-121	0	30				
1,1-Dichloroethane	110	108	84-129	1	30				
1,2-Dichloroethane	117	114	68-131	3	30				
1,1-Dichloroethene	117	116	75-155	1	30				
cis-1,2-Dichloroethene	107	104	80-141	2	30				
trans-1,2-Dichloroethene	114	113	81-142	1	30				
1,2-Dichloropropane	112	109	83-124	2	30				
cis-1,3-Dichloropropene	103	103	70-116	1	30				
trans-1,3-Dichloropropene	102	101	74-119	1	30				
Ethyl t-butyl ether	104	105	74-122	1	30				
Ethylbenzene	105	104	71-134	1	30				
di-Isopropyl ether	115	115	70-129	0	30				
Isopropylbenzene	106	104	75-128	2	30				
p-Isopropyltoluene	98	97	76-123	1	30				
Methyl Tertiary Butyl Ether	103	104	72-126	1	30				
Methylene Chloride	107	106	78-133	0	30				
Naphthalene	90	91	52-125	1	30				
n-Propylbenzene	103	102	74-134	1	30				
1,1,2,2-Tetrachloroethane	94	94	72-128	0	30				
Tetrachloroethene	113	110	80-128	3	30				
Toluene	107	106	80-125	2	30				

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1410213
Reported: 08/14/13 at 01:20 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,1,1-Trichloroethane	110	108	69-140	2	30				
1,1,2-Trichloroethane	101	99	71-141	2	30				
Trichloroethene	117	114	88-133	3	30				
Trichlorofluoromethane	132	129	64-146	2	30				
1,2,4-Trimethylbenzene	100	99	72-130	1	30				
1,3,5-Trimethylbenzene	101	100	65-132	1	30				
Vinyl Chloride	105	105	66-133	1	30				
Xylene (Total)	104	102	79-125	2	30				
Batch number: L132251AA	Sample number(s): 7155110-7155112 UNSPK: P153297								
Acetone	104	110	33-159	5	30				
Acrolein	151*	156*	33-147	3	30				
Acrylonitrile	83	114	43-146	31*	30				
t-Amyl methyl ether	101	107	65-117	5	30				
Benzene	-261 (2)	-419 (2)	72-134	3	30				
Bromodichloromethane	105	111	78-125	5	30				
Bromoform	91	96	48-118	5	30				
Bromomethane	75	87	47-129	14	30				
2-Butanone	95	99	57-138	4	30				
t-Butyl alcohol	110	136*	67-119	14	30				
n-Butylbenzene	93	97	59-156	3	30				
sec-Butylbenzene	97	101	79-125	3	30				
Carbon Tetrachloride	116	120	72-135	3	30				
Chlorobenzene	98	102	87-124	5	30				
Chloroethane	74	85	51-145	13	30				
2-Chloroethyl Vinyl Ether	0*	0*	10-151	0	30				
Chloroform	123	128	81-134	4	30				
Chloromethane	82	94	46-137	14	30				
Dibromochloromethane	100	105	74-116	5	30				
1,2-Dichlorobenzene	93	97	84-119	4	30				
1,3-Dichlorobenzene	95	99	86-121	4	30				
1,4-Dichlorobenzene	99	102	85-121	3	30				
1,1-Dichloroethane	111	114	84-129	3	30				
1,2-Dichloroethane	117	119	68-131	2	30				
1,1-Dichloroethene	105	110	75-155	5	30				
cis-1,2-Dichloroethene	97	102	80-141	5	30				
trans-1,2-Dichloroethene	104	108	81-142	5	30				
1,2-Dichloropropane	109	111	83-124	2	30				
cis-1,3-Dichloropropene	100	104	70-116	4	30				
trans-1,3-Dichloropropene	97	102	74-119	5	30				
Ethyl t-butyl ether	98	103	74-122	5	30				
Ethylbenzene	56 (2)	8 (2)	71-134	3	30				
di-Isopropyl ether	107	112	70-129	5	30				
Isopropylbenzene	102	105	75-128	1	30				
p-Isopropyltoluene	94	98	76-123	4	30				
Methylene Chloride	101	101	78-133	0	30				
Naphthalene	85	90	52-125	2	30				
n-Propylbenzene	103 (2)	111 (2)	74-134	1	30				
1,1,2,2-Tetrachloroethane	90	96	72-128	6	30				
Tetrachloroethene	105	109	80-128	4	30				
Toluene	97 (2)	94 (2)	80-125	0	30				

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder Group Number: 1410213
Reported: 08/14/13 at 01:20 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,1,1-Trichloroethane	104	110	69-140	6	30				
1,1,2-Trichloroethane	121	127	71-141	5	30				
Trichloroethene	112	116	88-133	3	30				
Trichlorofluoromethane	100	112	64-146	12	30				
1,2,4-Trimethylbenzene	-43 (2)	-92 (2)	72-130	2	30				
1,3,5-Trimethylbenzene	97 (2)	102 (2)	65-132	0	30				
Vinyl Chloride	80	89	66-133	12	30				
Xylene (Total)	-41 (2)	-122 (2)	79-125	3	30				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260 VOCs
Batch number: L132241AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7155109	100	102	99	96
7155113	99	101	100	96
7155114	99	101	100	96
7155115	100	102	100	97
7155116	101	103	99	96
Blank	98	102	99	98
LCS	97	101	101	100
MS	99	105	102	100
MSD	100	100	101	100
Limits:	80-116	77-113	80-113	78-113

Analysis Name: 8260 VOCs
Batch number: L132251AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7155110	99	105	100	98
7155111	99	103	99	97
7155112	99	104	100	97
Blank	102	105	99	96
LCS	101	102	101	101
MS	98	105	101	101
MSD	98	103	101	101
Limits:	80-116	77-113	80-113	78-113

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Lancaster Laboratories

Analysis Request/Environmental Services Chain of Custody

For Lancaster Laboratories use only Acct. #: 12152
Group #: 1410213 Sample #: 7155109-16

(1)

Client: Kleinfelder
Acct. #:
Project Name/#: 26140
PWSID #:
Project Manager: Mark Steele
P.O. #: 51141-265652
Sampler: Paxton Wertz
Quote #:
Name of State where samples were collected: ~~Maryland~~ PW Virginia

For Lab Use Only
FSC:
SCR#:

Preservation Codes: H=HCl T=Thiosulfate N=HNO3 B=NaOH S=H2SO4 O=Other

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water (Potable / NPDES)	Other	Total # of Containers	Full List VOC+oxy 8260									Remarks	Temperature of samples upon receipt (if requested)
DUP	8/7/13	—	X			X		3	X										
MW-17D-67-77-3V	8/6/13	1633	X			X		3	X										
MW-17D-67-77-2V	8/6/13	1613	X			X		3	X										
MW-17D-67-77-1V	8/6/13	1602	X			X		3	X										
MW-17D-79-89-3V	8/7/13	1115	X			X		3	X										
MW-17D-79-89-2V	8/7/13	1052	X			X		3	X										
MW-17D-79-89-1V	8/7/13	1029	X			X		3	X										
Trip Blank						X		2	X										

Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: 8/14/13
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

Relinquished by:	Date	Time	Received by:	Date	Time
Bottle Storage	7/29/13	0530	Paxton Wertz	7/29/13	0530
Paxton Wertz	8/7/13	1500	Bottle Storage	8/7/13	1500
[illegible]	8/8/13	14:00	[illegible]	8/8/13	14:00
[illegible]	8/8/13	16:40			
			[illegible]	8/8/13	1640

Data Package Options (please circle if required)
Type I (validation/NJ reg) TX-TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

SDG Complete? Yes No

State-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicated QC sample and submit triplicate volume)
Internal COC required? Yes No

Lancaster Laboratories, Inc. 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 717-656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client

4886.01

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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Analysis Report

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Kleinfelder
1 Speen Street
Framingham MA 01701

September 23, 2013

Project: Fairfax 26140

Submittal Date: 09/20/2013
Group Number: 1420246
PO Number: 51141-258890
State of Sample Origin: VA

Client Sample Description	Lancaster Labs (LL) #
MW-8 Grab Water	7204713

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Kleinfelder	Attn: Mark Steele
ELECTRONIC COPY TO	Kleinfelder	Attn: Angela Vogt
ELECTRONIC COPY TO	Kleinfelder	Attn: Venelda Williams
ELECTRONIC COPY TO	Kleinfelder	Attn: Don Trego

Respectfully Submitted,

Amek Carter
Specialist

(717) 556-7252

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Lancaster Laboratories Environmental
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Analysis Report

Sample Description: MW-8 Grab Water
Fairfax Petroleum 26140

LL Sample # WW 7204713
LL Group # 1420246
Account # 12152

Project Name: Fairfax 26140

Collected: 09/19/2013 13:15 by PW

Submitted: 09/20/2013 09:15
Reported: 09/23/2013 15:11

Kleinfelder
1 Speen Street
Framingham MA 01701

88758

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	
10335	Benzene	71-43-2	< 5	5	1
10335	Ethylbenzene	100-41-4	< 5	5	1
10335	**Methyl Tertiary Butyl Ether**	1634-04-4	**170**	5	1
10335	Toluene	108-88-3	< 5	5	1
10335	Xylene (Total)	1330-20-7	< 5	5	1

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX, MTBE	SW-846 8260B	1	T132632AA	09/20/2013 21:59	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T132632AA	09/20/2013 21:59	Sara E Johnson	1

Quality Control Summary

Client Name: Kleinfelder Group Number: 1420246
Reported: 09/23/13 at 03:11 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: T132632AA	Sample number(s): 7204713							
Benzene	< 5	5.	ug/l	103		78-120		
Ethylbenzene	< 5	5.	ug/l	102		79-120		
Methyl Tertiary Butyl Ether	< 5	5.	ug/l	102		75-120		
Toluene	< 5	5.	ug/l	104		80-120		
Xylene (Total)	< 5	5.	ug/l	97		80-120		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: T132632AA	Sample number(s): 7204713 UNSPK: P193249								
Benzene	106	107	72-134	1	30				
Ethylbenzene	107	108	71-134	1	30				
Methyl Tertiary Butyl Ether	102	104	72-126	2	30				
Toluene	106	108	80-125	2	30				
Xylene (Total)	104	106	79-125	2	30				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260 VOCs
Batch number: T132632AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7204713	97	98	102	101
Blank	99	100	103	97
LCS	98	99	98	100
MS	98	100	102	104
MSD	99	102	101	105
Limits:	80-116	77-113	80-113	78-113

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Kleinfelder
Reported: 09/23/13 at 03:11 PM

Group Number: 1420246

Surrogate Quality Control

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Lancaster Laboratories

Analysis Request/Environmental Services Chain of Custody

For Lancaster Laboratories use only Acct. #: 12152
Group #: _____ Sample #: _____
1420246 / 7204713

③ 9/23/13

Client: Fairfax Petroleum
Acct. #:
Project Name/#: ~~28875~~ AC 26140
PWSID #:
Project Manager: Mark Steele
P.O. #: 51141-258890
Sampler: Paxton Wertz
Quote #:
Name of State where samples were collected: Virginia

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO3 B=NaOH
S=H2SO4 O=Other

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (Potable / NPDES)	Matrix: Other	Total # of Containers	Analyses Requested / Preservation Codes: BTEX MTBE 8260	Remarks	Temperature of samples upon receipt (if requested)
MW-8	9/19/13	1315	X			X		3	X		

Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: ~~9/24/13~~ COB 9/23/13
Rush results requested by (please circle): Phone Fax E-mail
Phone #: _____ Fax #: _____
E-mail address:

Data Package Options (please circle if required)
Type I (validation/NJ reg) TX-TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

SDG Complete? Yes No

State-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicated QC sample and submit triplecate volume)
Internal COC required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
Bottle Storage	9/19/13	1200	Paxton Wertz	9/19/13	1200
Paxton Wertz	9/19/13	1600	Bottle Storage	9/19/13 ~~1600~~	1600

Lancaster Laboratories, Inc. 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 717-656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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Appendix H
Packer Testing Data and Charts

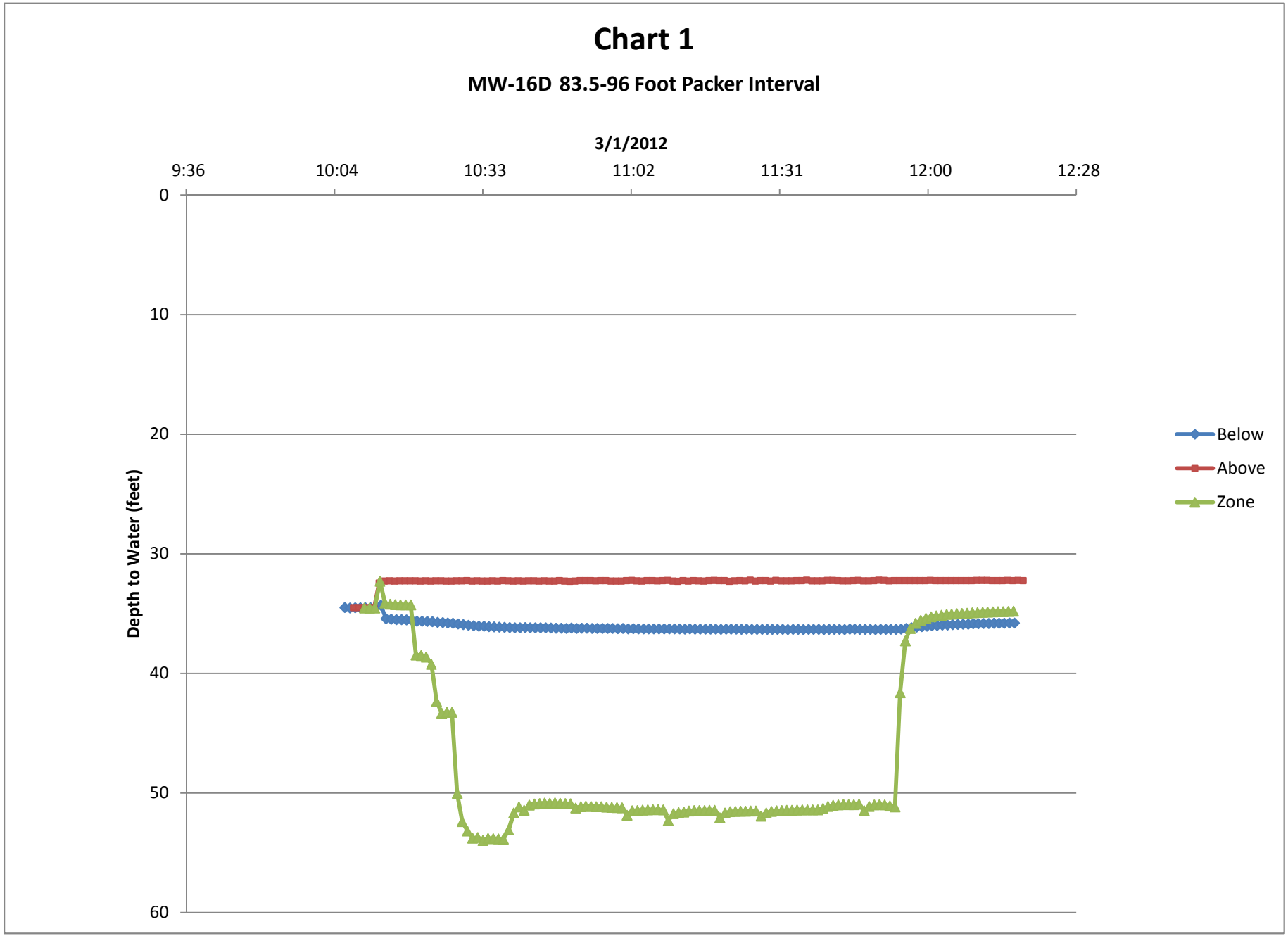


Chart 1
MW-16D 83.5-96 Foot Packer Interval
3/1/2012
9:36
10:04
10:33
11:02
11:31
12:00
12:28
0
10
20
30
40
50
60
Depth to Water (feet)
Below
Above
Zone

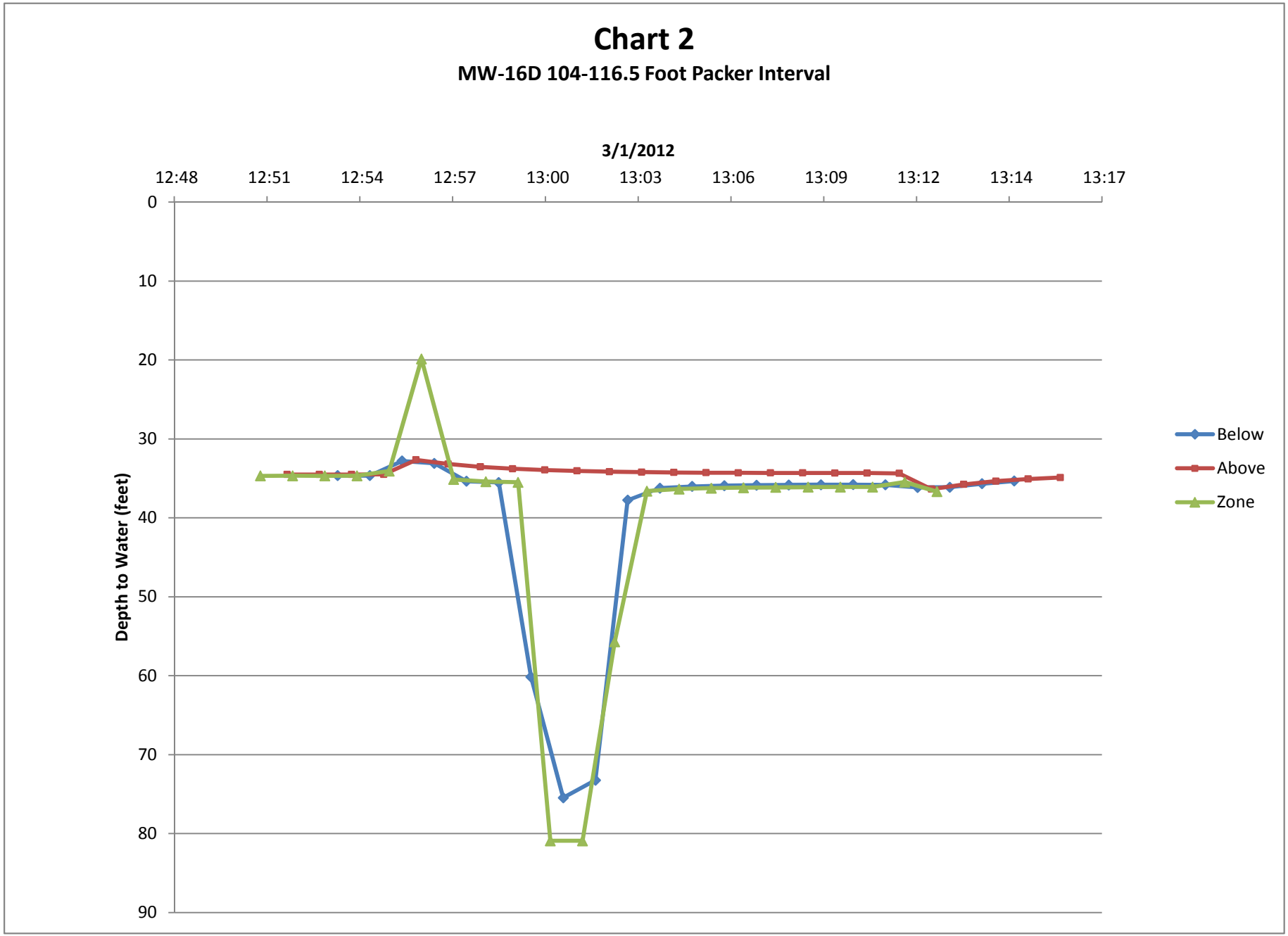


Chart 2
MW-16D 104-116.5 Foot Packer Interval
3/1/2012
12:48
12:51
12:54
12:57
13:00
13:03
13:06
13:09
13:12
13:14
13:17
0
10
20
30
40
50
60
70
80
90
Depth to Water (feet)
Below
Above
Zone

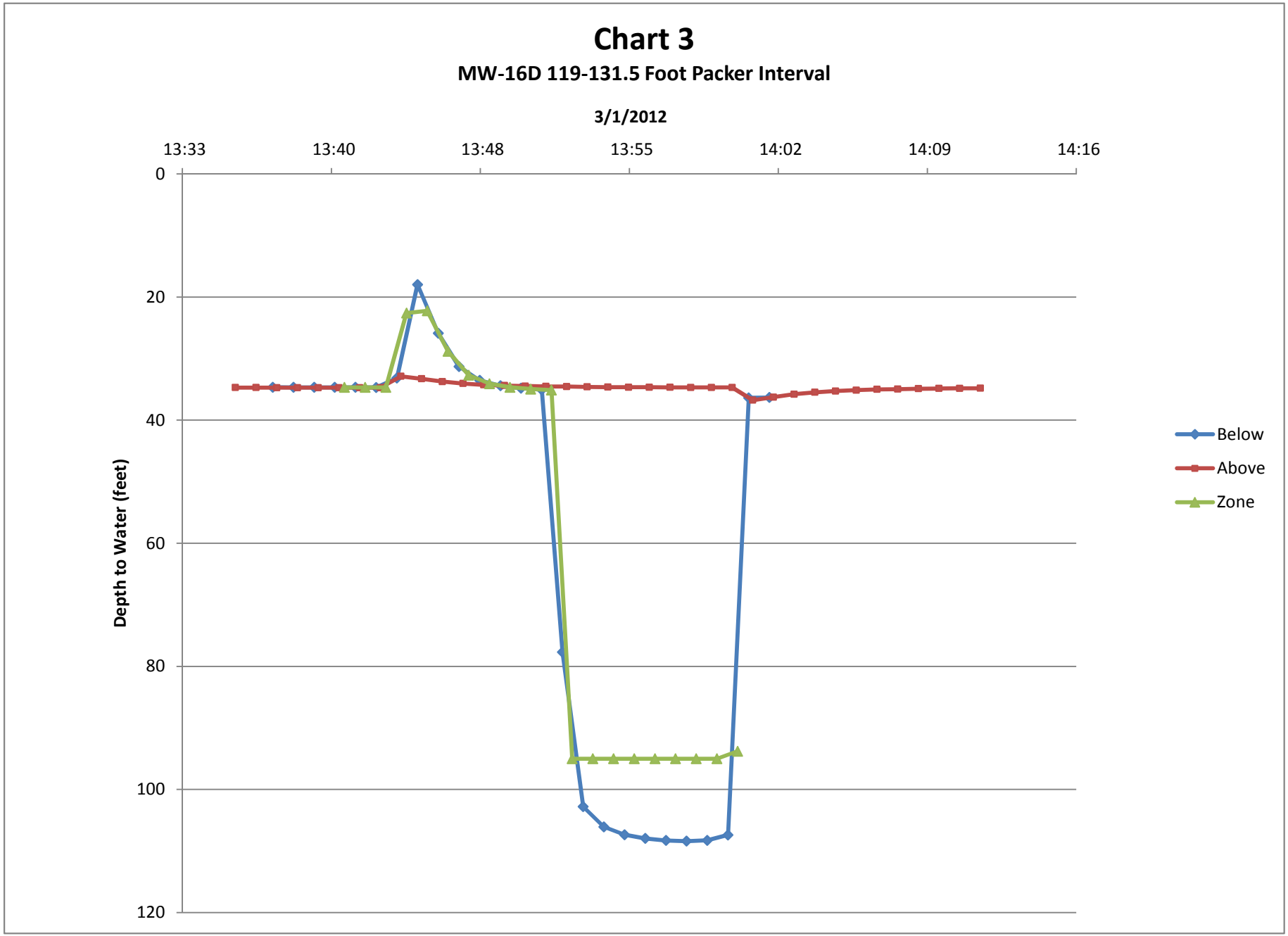


Chart 3
MW-16D 119-131.5 Foot Packer Interval
3/1/2012
13:33
13:40
13:48
13:55
14:02
14:09
14:16
0
20
40
60
80
100
120
Depth to Water (feet)
Below
Above
Zone

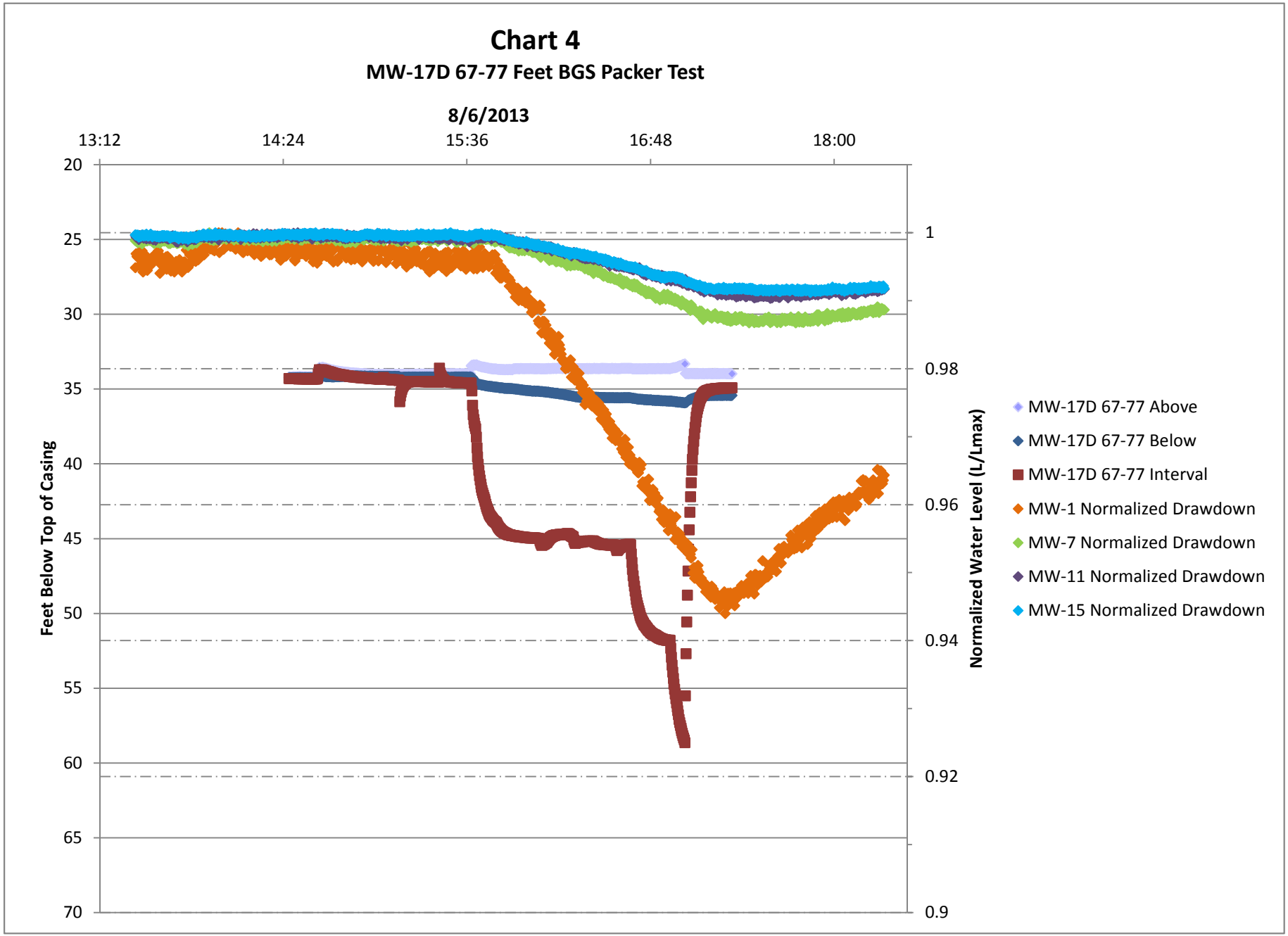


Chart 4
MW-17D 67-77 Feet BGS Packer Test
8/6/2013
13:12
14:24
15:36
16:48
18:00
20
25
30
35
40
45
50
55
60
65
70
Feet Below Top of Casing
1
0.98
0.96
0.94
0.92
0.9
Normalized Water Level (L/Lmax)
MW-17D 67-77 Above
MW-17D 67-77 Below
MW-17D 67-77 Interval
MW-1 Normalized Drawdown
MW-7 Normalized Drawdown
MW-11 Normalized Drawdown
MW-15 Normalized Drawdown

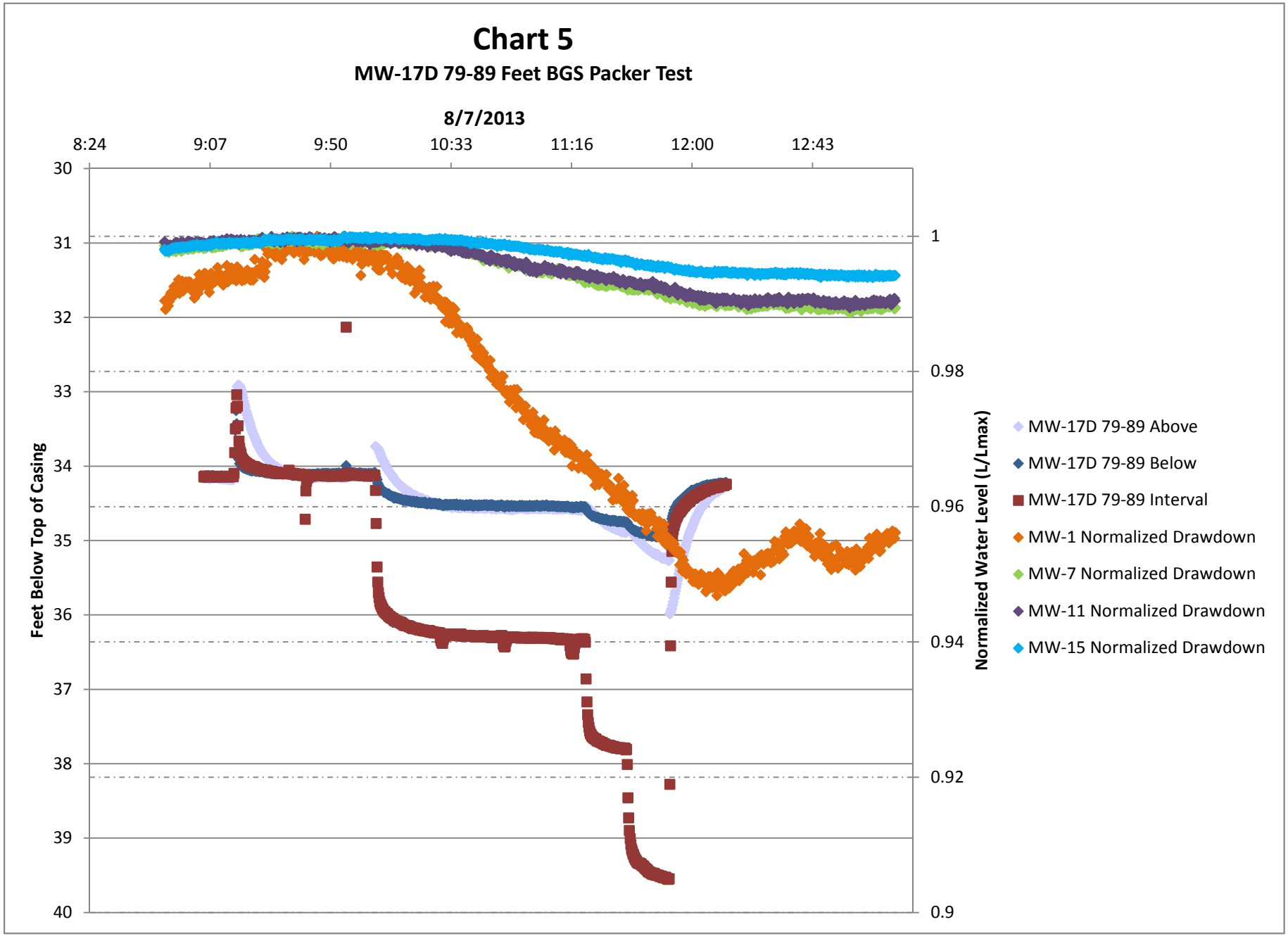


Chart 5
MW-17D 79-89 Feet BGS Packer Test
8/7/2013
8:24
9:07
9:50
10:33
11:16
12:00
12:43
30
31
32
33
34
35
36
37
38
39
40
Feet Below Top of Casing
1
0.98
0.96
0.94
0.92
0.9
Normalized Water Level (L/Lmax)
MW-17D 79-89 Above
MW-17D 79-89 Below
MW-17D 79-89 Interval
MW-1 Normalized Drawdown
MW-7 Normalized Drawdown
MW-11 Normalized Drawdown
MW-15 Normalized Drawdown

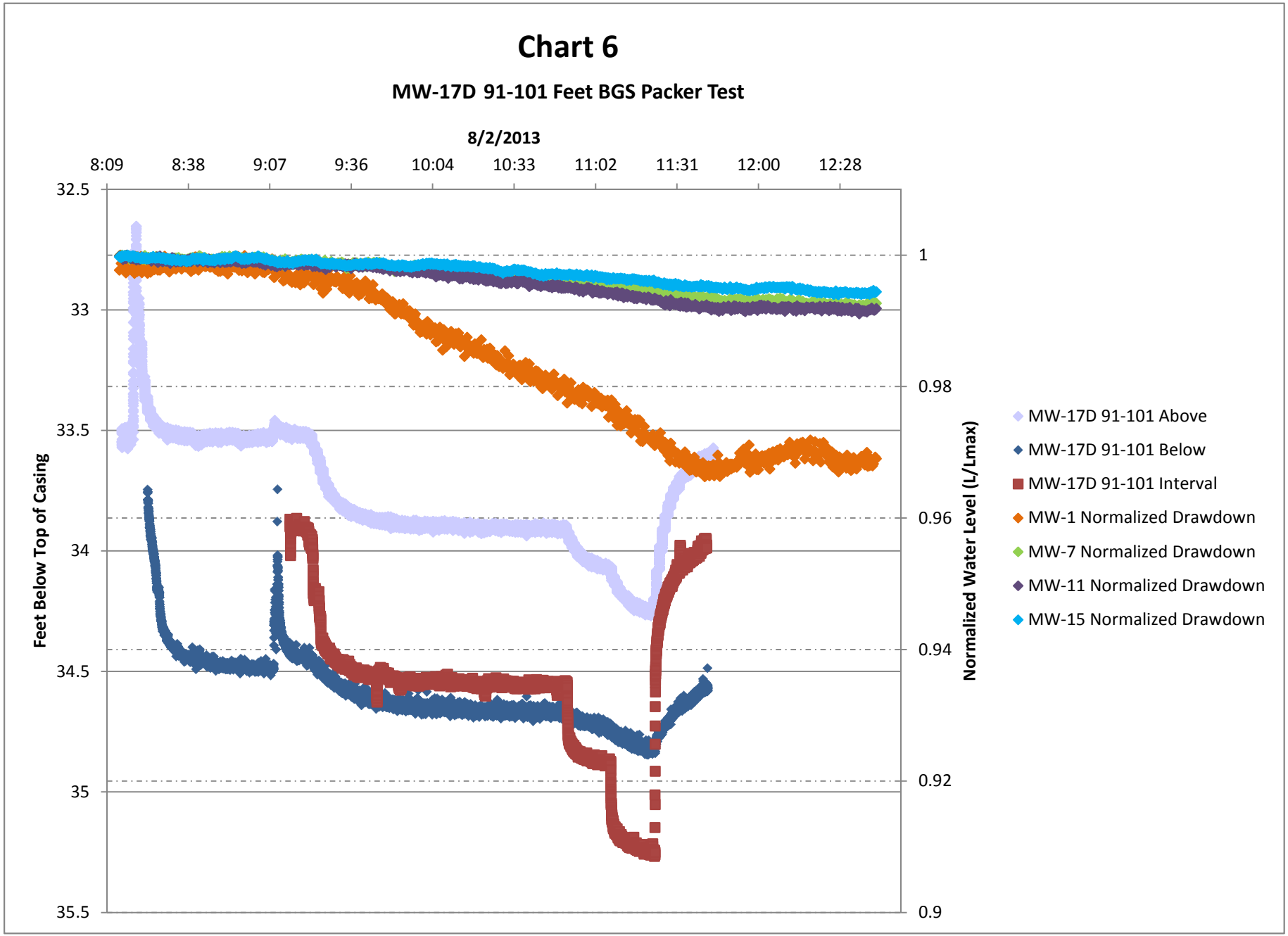


Chart 6
MW-17D 91-101 Feet BGS Packer Test
8/2/2013
8:09
8:38
9:07
9:36
10:04
10:33
11:02
11:31
12:00
12:28
32.5
33
33.5
34
34.5
35
35.5
Feet Below Top of Casing
1
0.98
0.96
0.94
0.92
0.9
Normalized Water Level (L/Lmax)
MW-17D 91-101 Above
MW-17D 91-101 Below
MW-17D 91-101 Interval
MW-1 Normalized Drawdown
MW-7 Normalized Drawdown
MW-11 Normalized Drawdown
MW-15 Normalized Drawdown

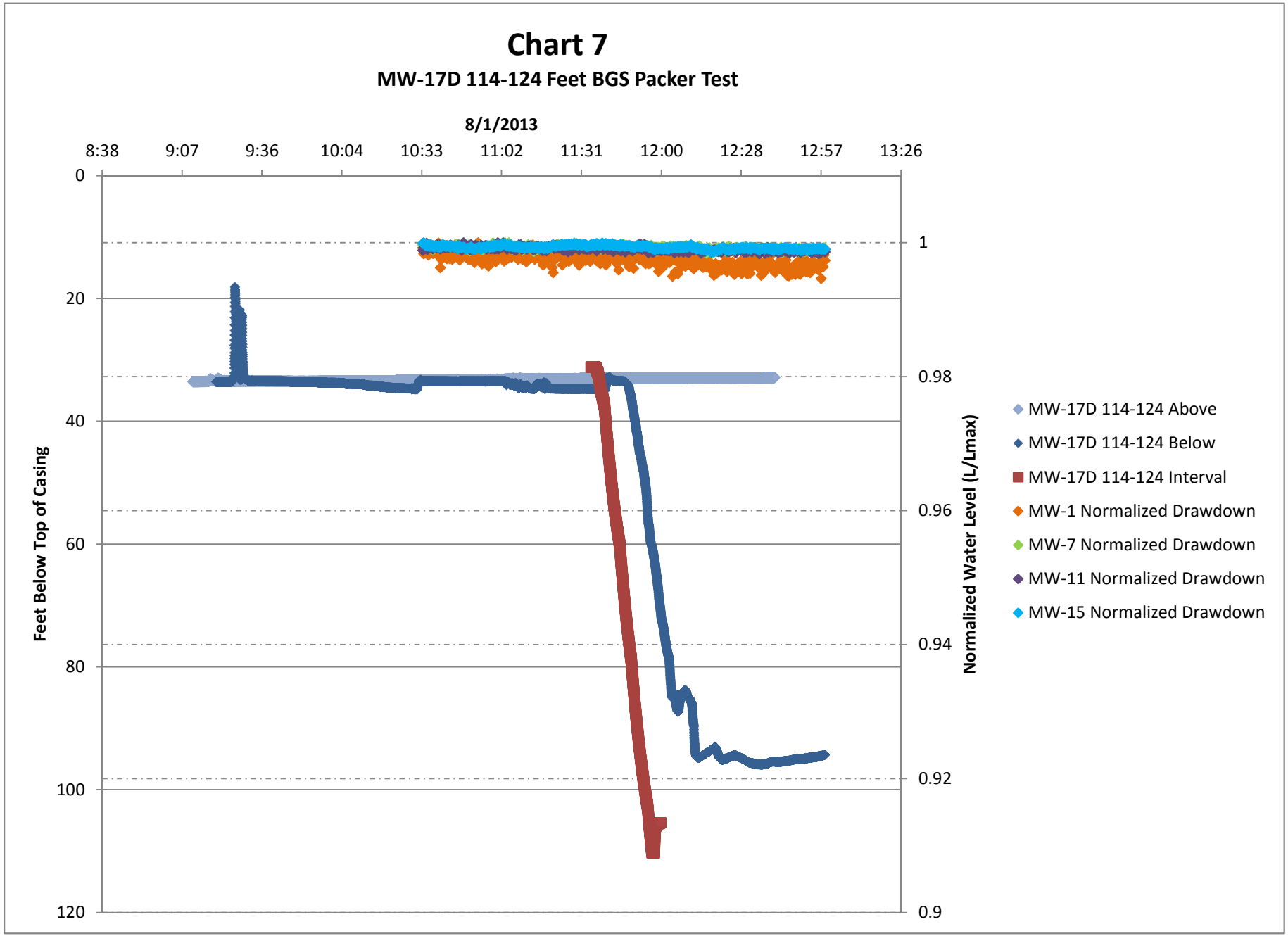


Chart 7
MW-17D 114-124 Feet BGS Packer Test
8/1/2013
8:38
9:07
9:36
10:04
10:33
11:02
11:31
12:00
12:28
12:57
13:26
0
20
40
60
80
100
120
Feet Below Top of Casing
1
0.98
0.96
0.94
0.92
0.9
Normalized Water Level (L/Lmax)
MW-17D 114-124 Above
MW-17D 114-124 Below
MW-17D 114-124 Interval
MW-1 Normalized Drawdown
MW-7 Normalized Drawdown
MW-11 Normalized Drawdown
MW-15 Normalized Drawdown

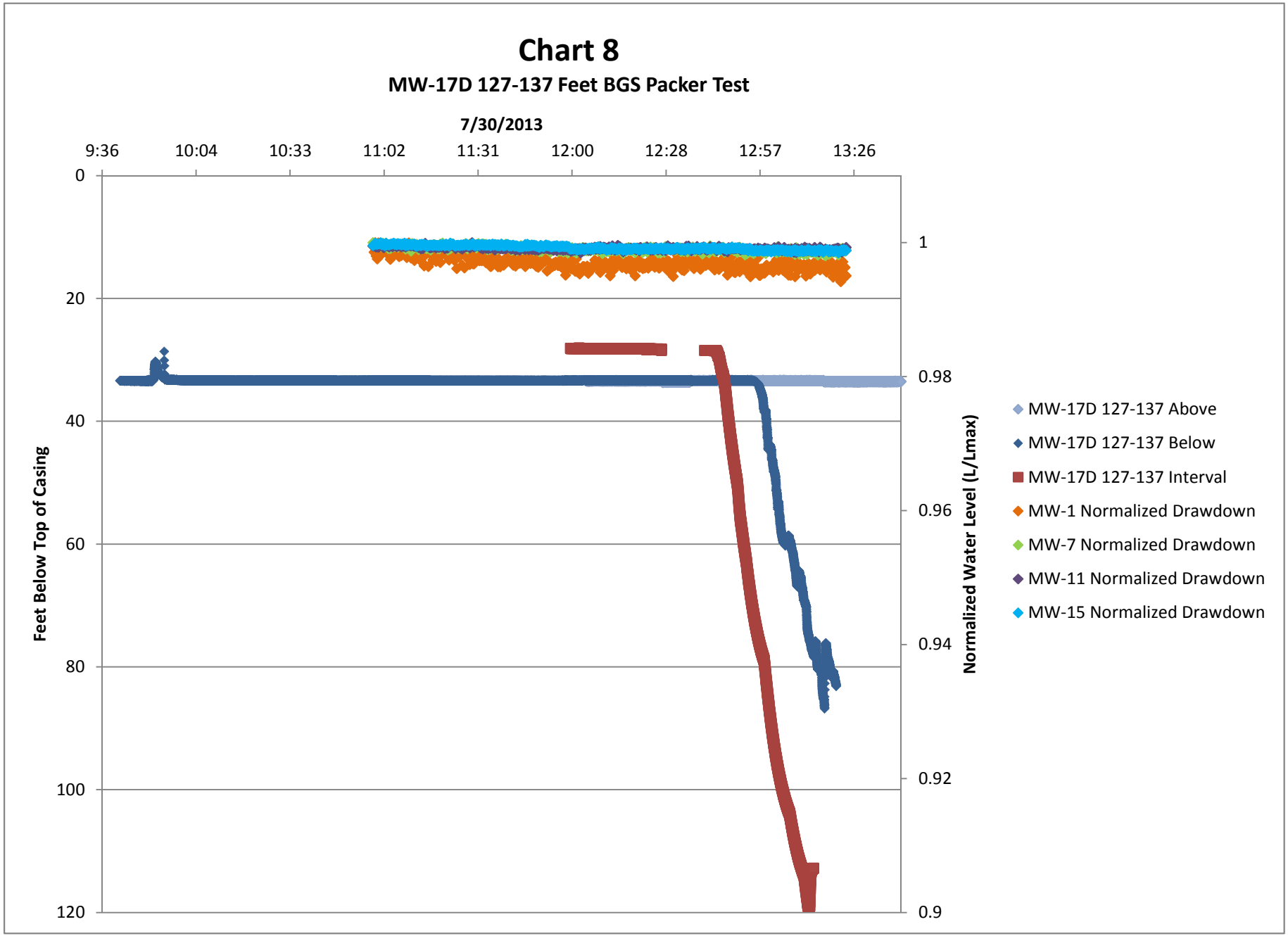


Chart 8
MW-17D 127-137 Feet BGS Packer Test
7/30/2013
9:36
10:04
10:33
11:02
11:31
12:00
12:28
12:57
13:26
0
20
40
60
80
100
120
Feet Below Top of Casing
1
0.98
0.96
0.94
0.92
0.9
Normalized Water Level (L/Lmax)
MW-17D 127-137 Above
MW-17D 127-137 Below
MW-17D 127-137 Interval
MW-1 Normalized Drawdown
MW-7 Normalized Drawdown
MW-11 Normalized Drawdown
MW-15 Normalized Drawdown

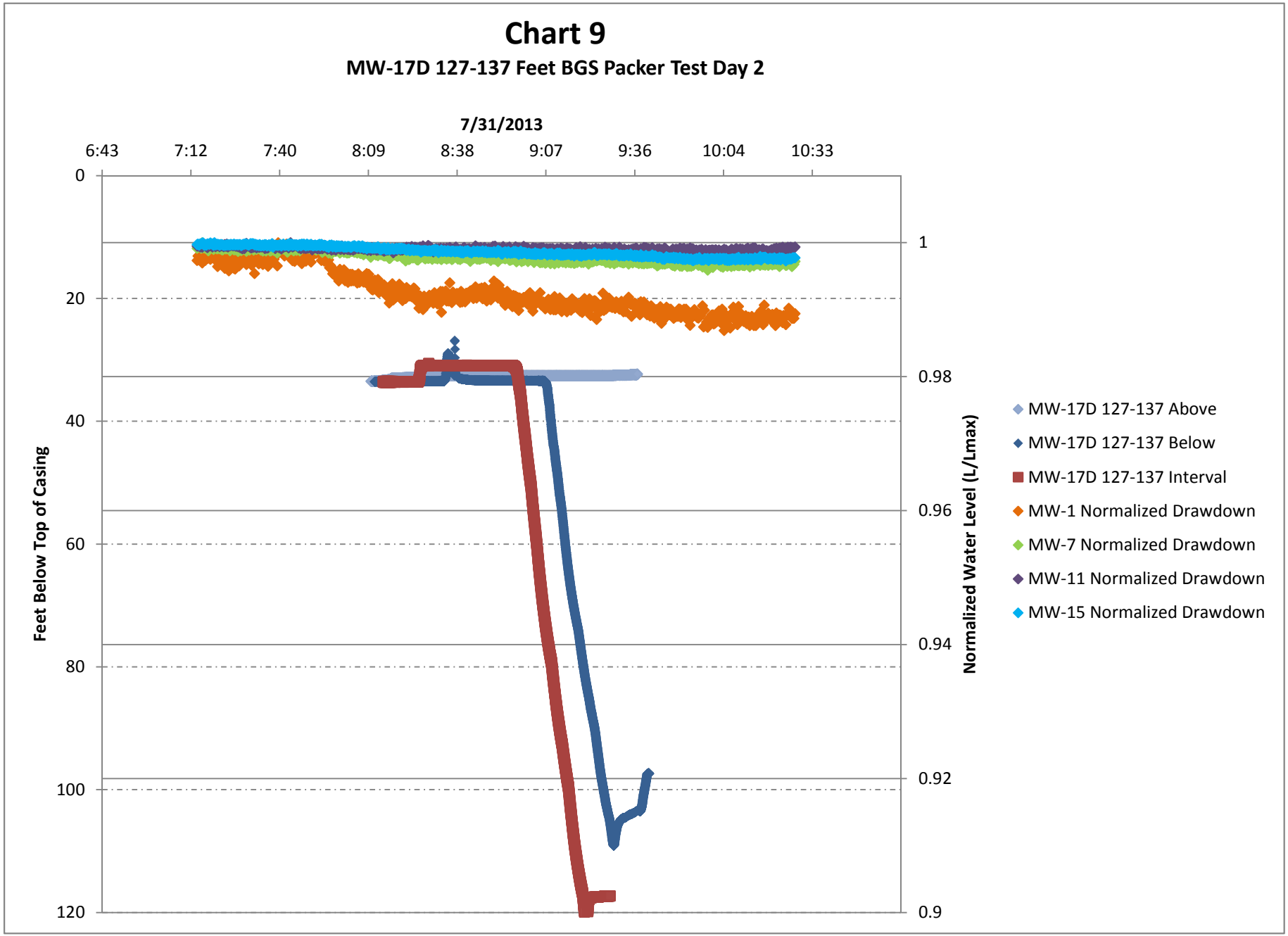


Chart 9
MW-17D 127-137 Feet BGS Packer Test Day 2
7/31/2013
6:43
7:12
7:40
8:09
8:38
9:07
9:36
10:04
10:33
0
20
40
60
80
100
120
Feet Below Top of Casing
1
0.98
0.96
0.94
0.92
0.9
Normalized Water Level (L/Lmax)
MW-17D 127-137 Above
MW-17D 127-137 Below
MW-17D 127-137 Interval
MW-1 Normalized Drawdown
MW-7 Normalized Drawdown
MW-11 Normalized Drawdown
MW-15 Normalized Drawdown

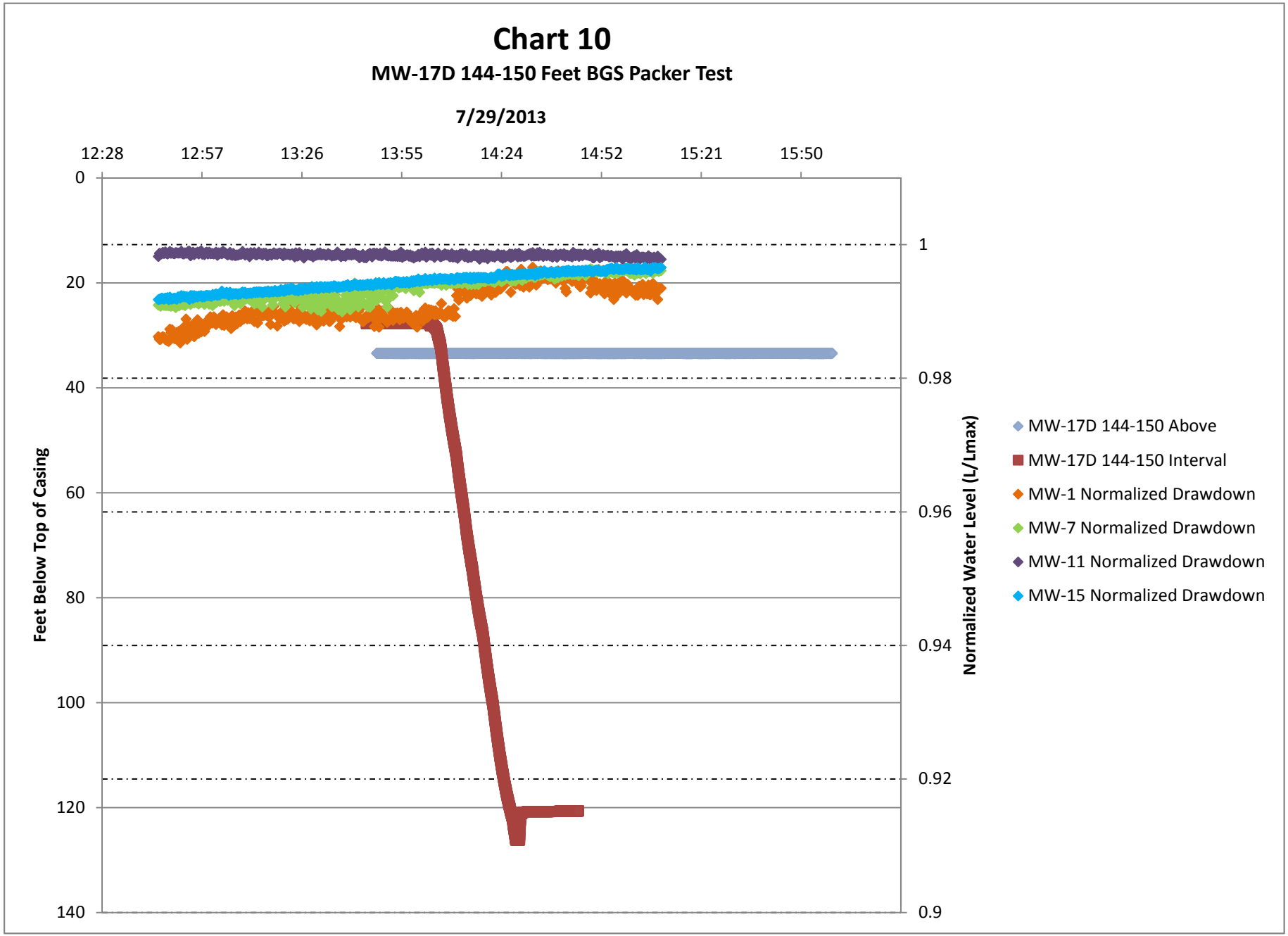


Chart 10
MW-17D 144-150 Feet BGS Packer Test
7/29/2013
12:28
12:57
13:26
13:55
14:24
14:52
15:21
15:50
0
20
40
60
80
100
120
140
Feet Below Top of Casing
1
0.98
0.96
0.94
0.92
0.9
Normalized Water Level (L/Lmax)
MW-17D 144-150 Above
MW-17D 144-150 Interval
MW-1 Normalized Drawdown
MW-7 Normalized Drawdown
MW-11 Normalized Drawdown
MW-15 Normalized Drawdown

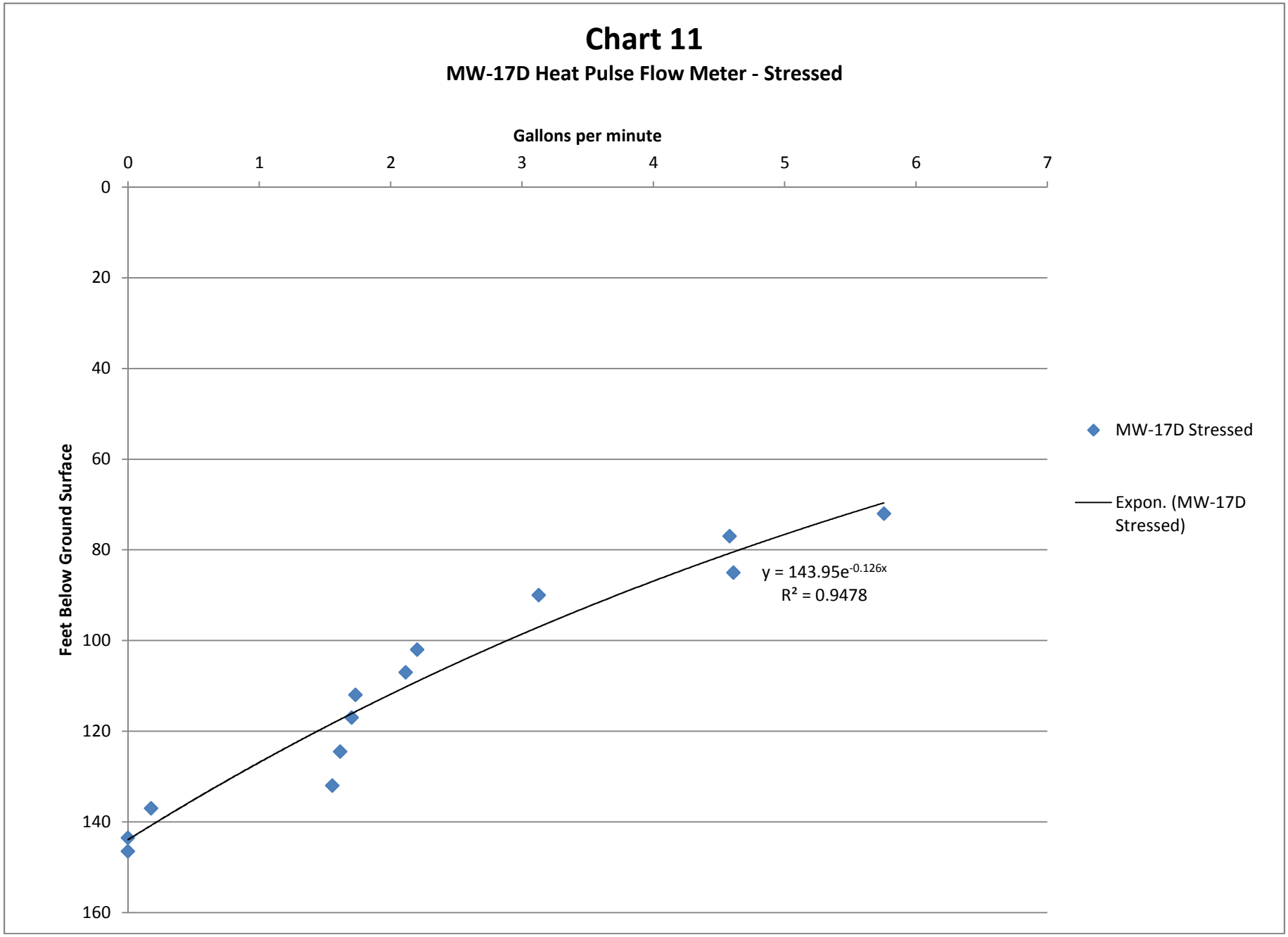
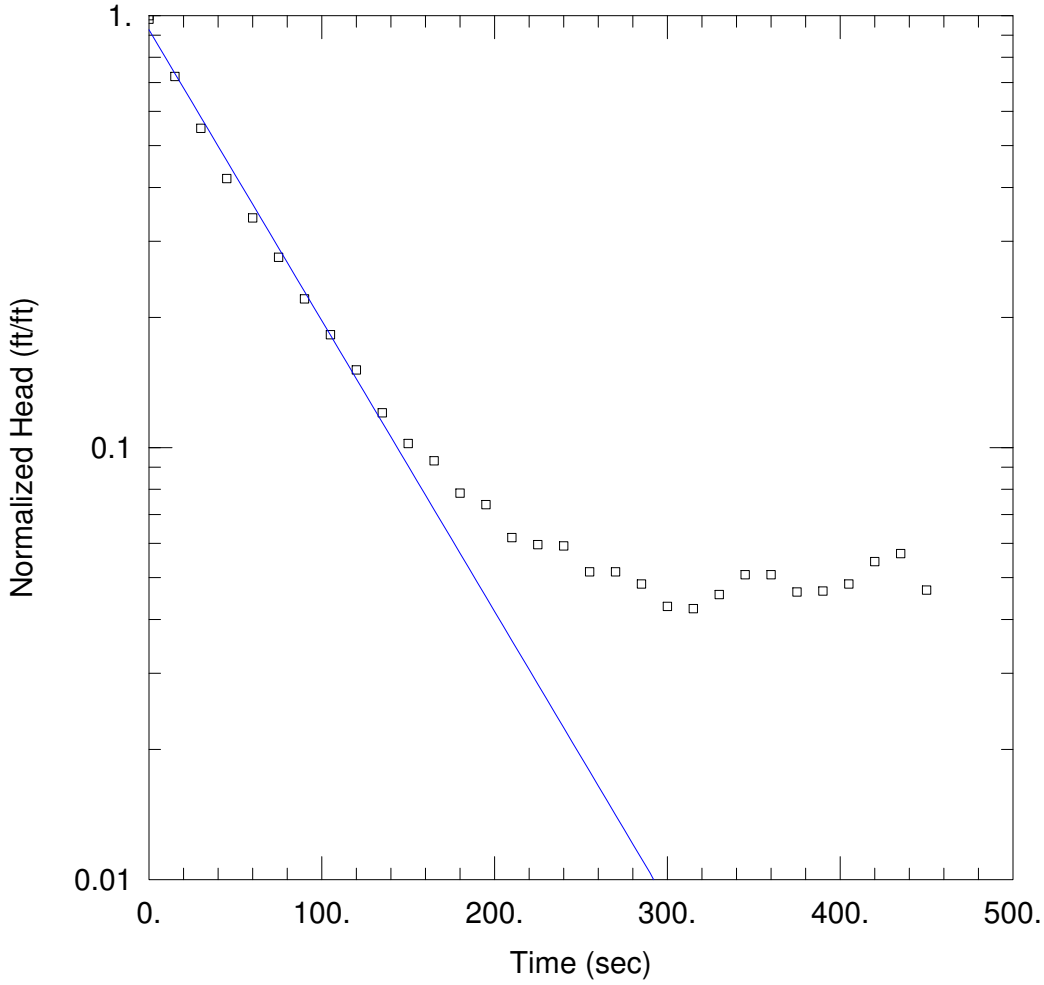


Chart 11
MW-17D Heat Pulse Flow Meter - Stressed
Gallons per minute
0
1
2
3
4
5
6
7
Feet Below Ground Surface
0
20
40
60
80
100
120
140
160
y = 143.95e^-0.126x
R² = 0.9478
MW-17D Stressed
Expon. (MW-17D Stressed)



67-77 INTERVAL

Data Set: U:\...\67-77_EDH.aqt
Date: 09/09/13 Time: 14:56:51

PROJECT INFORMATION

Company: Kleinfelder
Client: Fairfax Petroleum
Location: Great Falls, Virginia
Test Well: MW-17D
Test Date: 8/1/13

AQUIFER DATA

Saturated Thickness: 77. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-17D 67-77)

Initial Displacement: 1.452 ft
Total Well Penetration Depth: 42.66 ft
Casing Radius: 0.083 ft
Static Water Column Height: 34.42 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 1.488 ft/day
y0 = 1.345 ft

Data Set: U:\wpdraft\Captial Petroleum Group\Fairfax Petroleum Realty LLC\26140 Great Falls 2010-3028\Data\201
Title: 67-77 Interval
Date: 09/10/13
Time: 05:19:51

PROJECT INFORMATION

Company: Kleinfelder
Client: Fairfax Petroleum
Location: Great Falls, Virginia
Test Date: 8/1/13
Test Well: MW-17D

AQUIFER DATA

Saturated Thickness: 77. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-17D 67-77

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 1.452 ft
Static Water Column Height: 34.42 ft
Casing Radius: 0.083 ft
Well Radius: 0.25 ft
Well Skin Radius: 0.2501 ft
Screen Length: 10. ft
Total Well Penetration Depth: 42.66 ft
Corrected Casing Radius (Butler Method): 0.08669 ft
Expected Initial Displacement: 1.69 ft

No. of Observations: 31

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	1.425	240.	0.086
15.	1.048	255.	0.0748
30.	0.7959	270.	0.0748
45.	0.6088	285.	0.0701
60.	0.494	300.	0.0623
75.	0.4005	315.	0.0615
90.	0.3206	330.	0.0663
105.	0.2648	345.	0.0737
120.	0.2197	360.	0.0737
135.	0.1747	375.	0.0672
150.	0.1483	390.	0.0676
165.	0.1353	405.	0.0702
180.	0.1139	420.	0.079
195.	0.1071	435.	0.0825
210.	0.0898	450.	0.0679
225.	0.0866		

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 2.957

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate

K	1.488	ft/day
y0	1.345	ft

K = 0.0005249 cm/sec
T = K*b = 114.6 ft²/day (1.232 sq. cm/sec)

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
K	1.488	0.07248	+/- 0.1482	20.53	ft/day
y0	1.345	0.04112	+/- 0.0841	32.71	ft

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

K = 0.0005249 cm/sec
T = K*b = 114.6 ft²/day (1.232 sq. cm/sec)

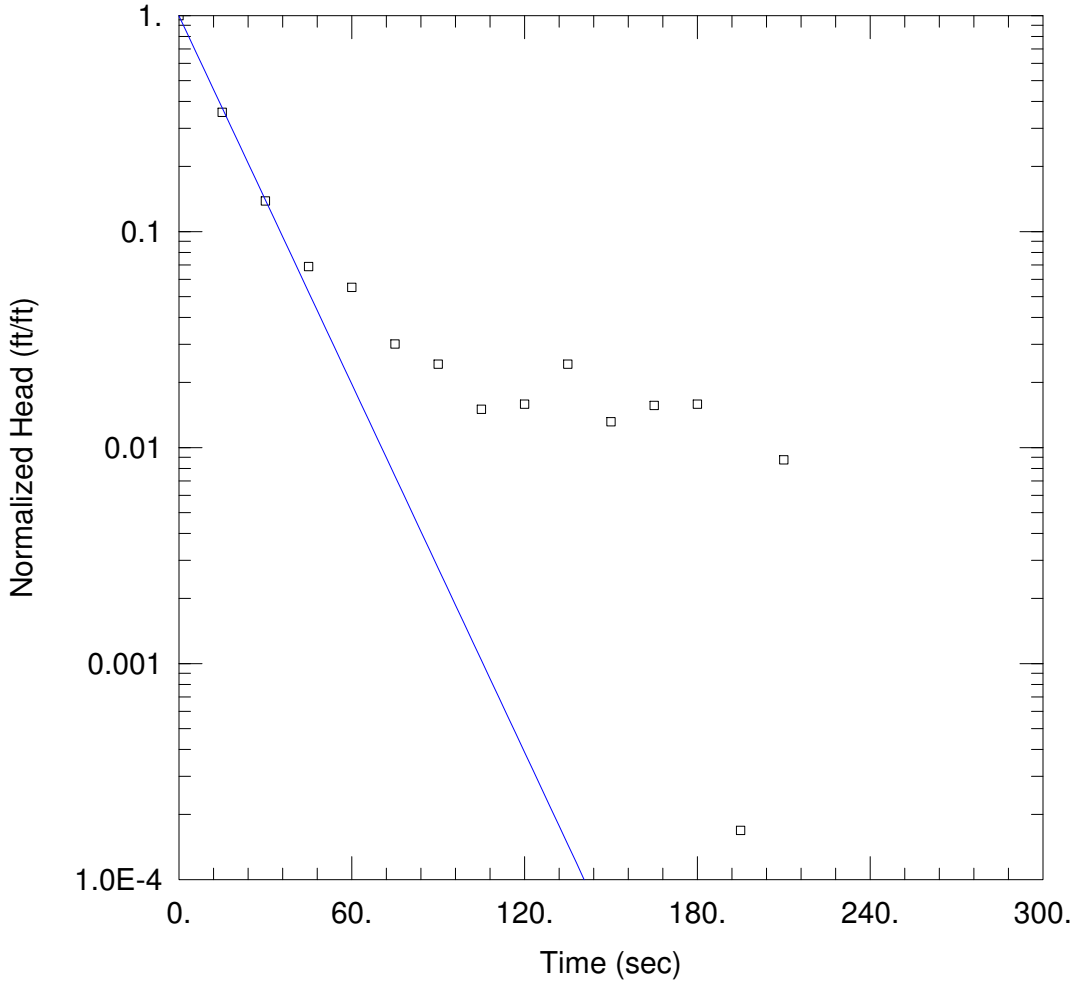
Parameter Correlations

	K	y0
K	1.00	0.62
y0	0.62	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . . 0.08076 ft^2
Variance . . . . . 0.002785 ft^2
Std. Deviation . . . . . 0.05277 ft
Mean . . . . . 0.03324 ft
No. of Residuals 31
No. of Estimates 2



79-89 INTERVAL

Data Set: U:\...\79-89_EDH.aqt
Date: 09/09/13 Time: 14:56:42

PROJECT INFORMATION

Company: Kleinfelder
Client: Fairfax Petroleum
Location: Great Falls, Virginia
Test Well: MW-17D
Test Date: 8/1/13

AQUIFER DATA

Saturated Thickness: 77. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-17D 79-89)

Initial Displacement: 0.593 ft
Total Well Penetration Depth: 54.88 ft
Casing Radius: 0.083 ft
Static Water Column Height: 34.12 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 12.28 ft/day
y0 = 0.5909 ft

Data Set: U:\wpdraft\Captial Petroleum Group\Fairfax Petroleum Realty LLC\26140 Great Falls 2010-3028\Data\201
Title: 79-89 Interval
Date: 09/10/13
Time: 05:18:36

PROJECT INFORMATION

Company: Kleinfelder
Client: Fairfax Petroleum
Location: Great Falls, Virginia
Test Date: 8/1/13
Test Well: MW-17D

AQUIFER DATA

Saturated Thickness: 77. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-17D 79-89

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 0.593 ft
Static Water Column Height: 34.12 ft
Casing Radius: 0.083 ft
Well Radius: 0.25 ft
Well Skin Radius: 0.2501 ft
Screen Length: 10. ft
Total Well Penetration Depth: 54.88 ft
Corrected Casing Radius (Butler Method): 0.1185 ft
Expected Initial Displacement: 1.29 ft

No. of Observations: 15

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	0.5937	120.	0.0094
15.	0.2116	135.	0.0144
30.	0.082	150.	0.0078
45.	0.0408	165.	0.0093
60.	0.0327	180.	0.0094
75.	0.0179	195.	0.0001
90.	0.0144	210.	0.0052
105.	0.0089		

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 3.094

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	12.28	ft/day
y0	0.5909	ft

K = 0.004333 cm/sec
T = K*b = 945.7 ft²/day (10.17 sq. cm/sec)

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
K	12.28	0.5049	+/- 1.091	24.33	ft/day
y0	0.5909	0.01101	+/- 0.02379	53.65	ft

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

K = 0.004333 cm/sec
T = K*b = 945.7 ft²/day (10.17 sq. cm/sec)

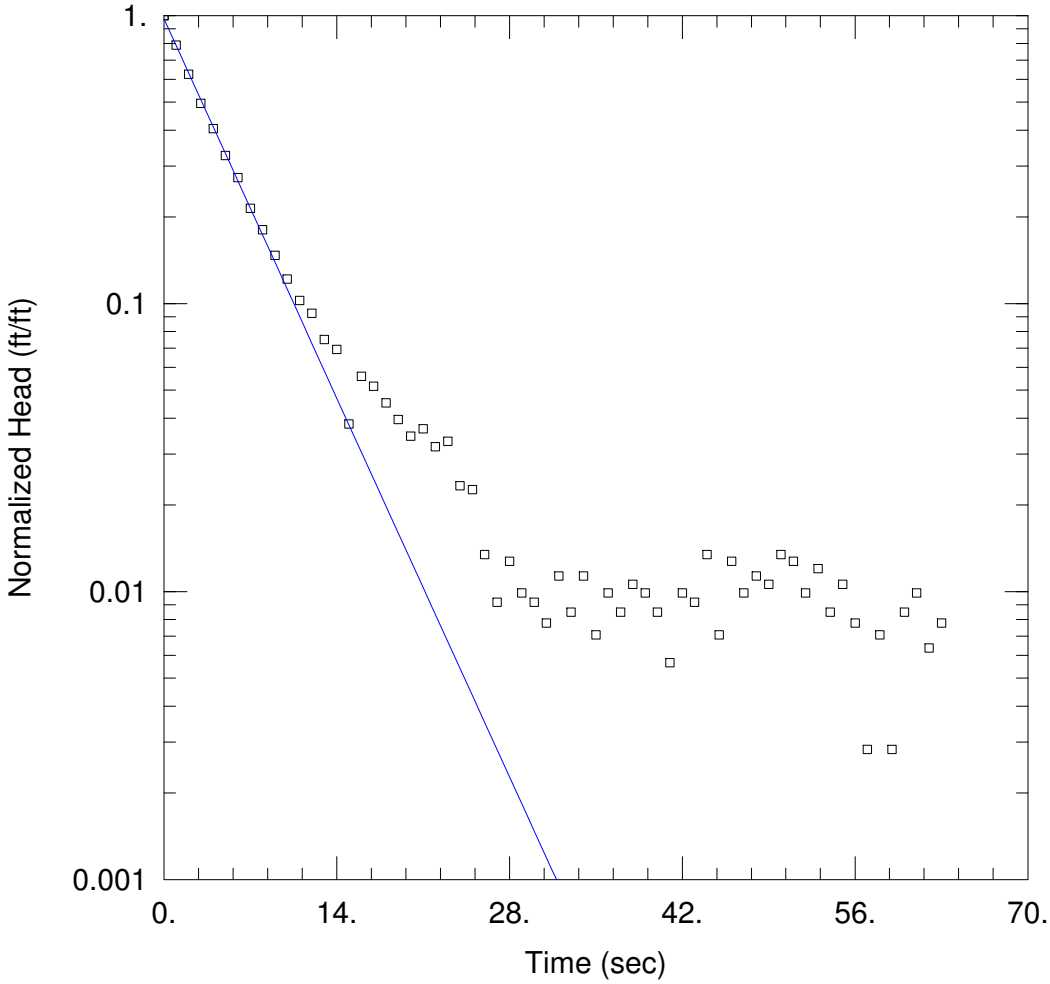
Parameter Correlations

	K	y0
K	1.00	0.35
y0	0.35	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . . 0.001608 ft^2
Variance . . . . . 0.0001237 ft^2
Std. Deviation . . . . . 0.01112 ft
Mean . . . . . 0.007493 ft
No. of Residuals 15
No. of Estimates 2



91-101 INTERVAL

Data Set: U:\...\91-101_EDH.aqt
Date: 09/09/13 Time: 14:56:30

PROJECT INFORMATION

Company: Kleinfelder
Client: Fairfax Petroleum
Location: Great Falls, Virginia
Test Well: MW-17D
Test Date: 8/1/13

AQUIFER DATA

Saturated Thickness: 77. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-17D 91-101)

Initial Displacement: 1.415 ft
Total Well Penetration Depth: 67.11 ft
Casing Radius: 0.083 ft
Static Water Column Height: 31.02 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 21.26 ft/day
y0 = 1.377 ft

Data Set: U:\wpdraft\Captial Petroleum Group\Fairfax Petroleum Realty LLC\26140 Great Falls 2010-3028\Data\201
Title: 91-101 Interval
Date: 09/10/13
Time: 05:22:50

PROJECT INFORMATION

Company: Kleinfelder
Client: Fairfax Petroleum
Location: Great Falls, Virginia
Test Date: 8/1/13
Test Well: MW-17D

AQUIFER DATA

Saturated Thickness: 77. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-17D 91-101

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 1.415 ft
Static Water Column Height: 31.02 ft
Casing Radius: 0.083 ft
Well Radius: 0.25 ft
Well Skin Radius: 0.2501 ft
Screen Length: 10. ft
Total Well Penetration Depth: 67.11 ft
Corrected Casing Radius (Butler Method): 0.08355 ft
Expected Initial Displacement: 1.53 ft

No. of Observations: 64

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	1.415	32.	0.016
1.	1.116	33.	0.012
2.	0.884	34.	0.016
3.	0.701	35.	0.01
4.	0.573	36.	0.014
5.	0.462	37.	0.012
6.	0.387	38.	0.015
7.	0.303	39.	0.014
8.	0.255	40.	0.012
9.	0.208	41.	0.008
10.	0.172	42.	0.014
11.	0.145	43.	0.013
12.	0.131	44.	0.019
13.	0.106	45.	0.01
14.	0.098	46.	0.018
15.	0.054	47.	0.014
16.	0.079	48.	0.016
17.	0.073	49.	0.015
18.	0.064	50.	0.019
19.	0.056	51.	0.018
20.	0.049	52.	0.014
21.	0.052	53.	0.017
22.	0.045	54.	0.012
23.	0.047	55.	0.015
24.	0.033	56.	0.011
25.	0.032	57.	0.004
26.	0.019	58.	0.01
27.	0.013	59.	0.004
28.	0.018	60.	0.012

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
29.	0.014	61.	0.014
30.	0.013	62.	0.009
31.	0.011	63.	0.011

SOLUTION

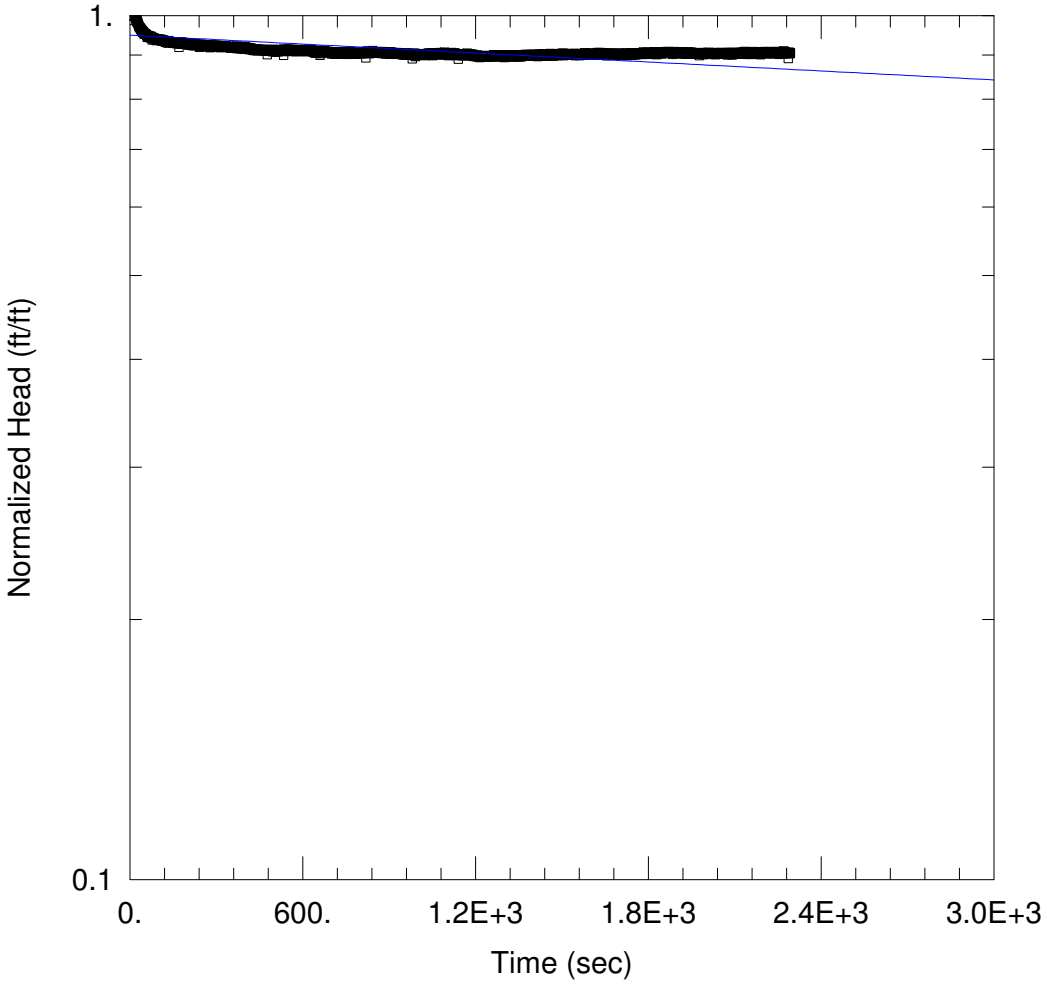
Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 3.259

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	21.26	ft/day
y0	1.377	ft

K = 0.007499 cm/sec
T = K*b = 1636.8 ft²/day (17.6 sq. cm/sec)



114-124 INTERVAL

Data Set: U:\...\114-124_EDH.aqt
Date: 09/09/13 Time: 14:56:06

PROJECT INFORMATION

Company: Kleinfelder
Client: Fairfax Petroleum
Location: Great Falls, Virginia
Test Well: MW-17D
Test Date: 8/1/13

AQUIFER DATA

Saturated Thickness: 77. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-17D 114-124)

Initial Displacement: 1.72 ft
Total Well Penetration Depth: 91.01 ft
Casing Radius: 0.083 ft
Static Water Column Height: 32.99 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.00432 ft/day
y0 = 1.632 ft

Data Set: U:\wpdraft\Captial Petroleum Group\Fairfax Petroleum Realty LLC\26140 Great Falls 2010-3028\Data\201
Title: 114-124 Interval
Date: 09/10/13
Time: 05:21:20

PROJECT INFORMATION

Company: Kleinfelder
Client: Fairfax Petroleum
Location: Great Falls, Virginia
Test Date: 8/1/13
Test Well: MW-17D

AQUIFER DATA

Saturated Thickness: 77. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-17D 114-124

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 1.72 ft
Static Water Column Height: 32.99 ft
Casing Radius: 0.083 ft
Well Radius: 0.25 ft
Well Skin Radius: 0.2501 ft
Screen Length: 10. ft
Total Well Penetration Depth: 91.01 ft
Corrected Casing Radius (Butler Method): 0.07828 ft
Expected Initial Displacement: 1.55 ft

No. of Observations: 2295

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	1.72	1148.	1.549
1.	1.727	1149.	1.551
2.	1.737	1150.	1.548
3.	1.718	1151.	1.554
4.	1.724	1152.	1.546
5.	1.719	1153.	1.551
6.	1.725	1154.	1.547
7.	1.723	1155.	1.549
8.	1.724	1156.	1.548
9.	1.727	1157.	1.549
10.	1.698	1158.	1.546
11.	1.718	1159.	1.552
12.	1.717	1160.	1.551
13.	1.718	1161.	1.549
14.	1.716	1162.	1.545
15.	1.722	1163.	1.553
16.	1.719	1164.	1.549
17.	1.725	1165.	1.552
18.	1.729	1166.	1.551
19.	1.718	1167.	1.554
20.	1.714	1168.	1.554
21.	1.705	1169.	1.549
22.	1.702	1170.	1.548
23.	1.706	1171.	1.551
24.	1.691	1172.	1.556
25.	1.699	1173.	1.552
26.	1.69	1174.	1.553
27.	1.691	1175.	1.547
28.	1.683	1176.	1.545

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
29.	1.68	1177.	1.55
30.	1.674	1178.	1.553
31.	1.677	1179.	1.548
32.	1.67	1180.	1.548
33.	1.668	1181.	1.554
34.	1.664	1182.	1.549
35.	1.666	1183.	1.552
36.	1.665	1184.	1.548
37.	1.659	1185.	1.547
38.	1.661	1186.	1.549
39.	1.657	1187.	1.545
40.	1.652	1188.	1.549
41.	1.652	1189.	1.546
42.	1.651	1190.	1.552
43.	1.654	1191.	1.543
44.	1.644	1192.	1.548
45.	1.644	1193.	1.548
46.	1.649	1194.	1.546
47.	1.647	1195.	1.546
48.	1.641	1196.	1.545
49.	1.638	1197.	1.547
50.	1.638	1198.	1.542
51.	1.642	1199.	1.546
52.	1.637	1200.	1.544
53.	1.638	1201.	1.543
54.	1.639	1202.	1.547
55.	1.636	1203.	1.544
56.	1.637	1204.	1.545
57.	1.634	1205.	1.548
58.	1.631	1206.	1.542
59.	1.63	1207.	1.54
60.	1.632	1208.	1.545
61.	1.623	1209.	1.547
62.	1.63	1210.	1.541
63.	1.628	1211.	1.543
64.	1.627	1212.	1.544
65.	1.626	1213.	1.543
66.	1.631	1214.	1.543
67.	1.628	1215.	1.542
68.	1.627	1216.	1.538
69.	1.621	1217.	1.542
70.	1.628	1218.	1.542
71.	1.626	1219.	1.542
72.	1.623	1220.	1.54
73.	1.623	1221.	1.543
74.	1.622	1222.	1.543
75.	1.621	1223.	1.542
76.	1.626	1224.	1.544
77.	1.612	1225.	1.539
78.	1.621	1226.	1.54
79.	1.617	1227.	1.539
80.	1.617	1228.	1.543
81.	1.618	1229.	1.544
82.	1.619	1230.	1.541
83.	1.616	1231.	1.547
84.	1.62	1232.	1.544
85.	1.62	1233.	1.541
86.	1.617	1234.	1.543
87.	1.617	1235.	1.541
88.	1.616	1236.	1.541
89.	1.613	1237.	1.541
90.	1.613	1238.	1.539
91.	1.611	1239.	1.541
92.	1.609	1240.	1.546
93.	1.613	1241.	1.539
94.	1.614	1242.	1.539
95.	1.612	1243.	1.543

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
96.	1.61	1244.	1.539
97.	1.615	1245.	1.545
98.	1.616	1246.	1.544
99.	1.611	1247.	1.541
100.	1.612	1248.	1.54
101.	1.61	1249.	1.544
102.	1.611	1250.	1.544
103.	1.611	1251.	1.543
104.	1.61	1252.	1.544
105.	1.614	1253.	1.544
106.	1.61	1254.	1.544
107.	1.615	1255.	1.541
108.	1.607	1256.	1.544
109.	1.61	1257.	1.541
110.	1.608	1258.	1.545
111.	1.61	1259.	1.544
112.	1.609	1260.	1.543
113.	1.607	1261.	1.542
114.	1.606	1262.	1.541
115.	1.611	1263.	1.549
116.	1.611	1264.	1.544
117.	1.606	1265.	1.546
118.	1.609	1266.	1.546
119.	1.61	1267.	1.543
120.	1.604	1268.	1.548
121.	1.608	1269.	1.546
122.	1.607	1270.	1.544
123.	1.604	1271.	1.545
124.	1.602	1272.	1.549
125.	1.604	1273.	1.544
126.	1.601	1274.	1.54
127.	1.606	1275.	1.543
128.	1.604	1276.	1.549
129.	1.602	1277.	1.544
130.	1.609	1278.	1.543
131.	1.606	1279.	1.545
132.	1.599	1280.	1.544
133.	1.599	1281.	1.547
134.	1.605	1282.	1.543
135.	1.602	1283.	1.549
136.	1.609	1284.	1.543
137.	1.601	1285.	1.542
138.	1.603	1286.	1.542
139.	1.604	1287.	1.543
140.	1.603	1288.	1.545
141.	1.6	1289.	1.544
142.	1.603	1290.	1.546
143.	1.603	1291.	1.545
144.	1.605	1292.	1.546
145.	1.602	1293.	1.547
146.	1.602	1294.	1.541
147.	1.603	1295.	1.542
148.	1.6	1296.	1.542
149.	1.599	1297.	1.543
150.	1.602	1298.	1.54
151.	1.603	1299.	1.544
152.	1.6	1300.	1.542
153.	1.602	1301.	1.538
154.	1.601	1302.	1.539
155.	1.603	1303.	1.545
156.	1.599	1304.	1.543
157.	1.599	1305.	1.549
158.	1.603	1306.	1.542
159.	1.601	1307.	1.541
160.	1.597	1308.	1.541
161.	1.597	1309.	1.541
162.	1.599	1310.	1.544

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
163.	1.599	1311.	1.544
164.	1.597	1312.	1.542
165.	1.6	1313.	1.549
166.	1.598	1314.	1.546
167.	1.6	1315.	1.549
168.	1.599	1316.	1.544
169.	1.596	1317.	1.544
170.	1.599	1318.	1.549
171.	1.58	1319.	1.549
172.	1.595	1320.	1.547
173.	1.596	1321.	1.546
174.	1.597	1322.	1.547
175.	1.598	1323.	1.545
176.	1.602	1324.	1.548
177.	1.598	1325.	1.548
178.	1.596	1326.	1.544
179.	1.594	1327.	1.54
180.	1.595	1328.	1.55
181.	1.603	1329.	1.545
182.	1.594	1330.	1.548
183.	1.596	1331.	1.544
184.	1.593	1332.	1.542
185.	1.598	1333.	1.545
186.	1.599	1334.	1.544
187.	1.594	1335.	1.548
188.	1.596	1336.	1.547
189.	1.597	1337.	1.547
190.	1.592	1338.	1.54
191.	1.594	1339.	1.547
192.	1.597	1340.	1.545
193.	1.596	1341.	1.549
194.	1.596	1342.	1.544
195.	1.594	1343.	1.547
196.	1.596	1344.	1.546
197.	1.594	1345.	1.543
198.	1.594	1346.	1.541
199.	1.599	1347.	1.547
200.	1.599	1348.	1.547
201.	1.597	1349.	1.547
202.	1.596	1350.	1.543
203.	1.591	1351.	1.542
204.	1.593	1352.	1.543
205.	1.59	1353.	1.541
206.	1.594	1354.	1.546
207.	1.592	1355.	1.546
208.	1.595	1356.	1.543
209.	1.593	1357.	1.544
210.	1.592	1358.	1.54
211.	1.593	1359.	1.543
212.	1.594	1360.	1.545
213.	1.592	1361.	1.543
214.	1.591	1362.	1.547
215.	1.592	1363.	1.547
216.	1.596	1364.	1.55
217.	1.591	1365.	1.545
218.	1.587	1366.	1.543
219.	1.592	1367.	1.544
220.	1.594	1368.	1.547
221.	1.594	1369.	1.55
222.	1.593	1370.	1.547
223.	1.589	1371.	1.546
224.	1.594	1372.	1.547
225.	1.589	1373.	1.551
226.	1.587	1374.	1.547
227.	1.591	1375.	1.545
228.	1.593	1376.	1.548
229.	1.591	1377.	1.549

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
230.	1.593	1378.	1.547
231.	1.592	1379.	1.549
232.	1.589	1380.	1.548
233.	1.59	1381.	1.544
234.	1.588	1382.	1.551
235.	1.59	1383.	1.546
236.	1.59	1384.	1.548
237.	1.589	1385.	1.547
238.	1.59	1386.	1.547
239.	1.59	1387.	1.545
240.	1.593	1388.	1.546
241.	1.591	1389.	1.55
242.	1.58	1390.	1.549
243.	1.585	1391.	1.547
244.	1.588	1392.	1.55
245.	1.586	1393.	1.547
246.	1.586	1394.	1.549
247.	1.589	1395.	1.551
248.	1.589	1396.	1.549
249.	1.593	1397.	1.549
250.	1.589	1398.	1.545
251.	1.588	1399.	1.549
252.	1.59	1400.	1.546
253.	1.587	1401.	1.55
254.	1.588	1402.	1.551
255.	1.589	1403.	1.549
256.	1.588	1404.	1.551
257.	1.588	1405.	1.548
258.	1.588	1406.	1.547
259.	1.585	1407.	1.544
260.	1.584	1408.	1.545
261.	1.584	1409.	1.55
262.	1.585	1410.	1.546
263.	1.588	1411.	1.549
264.	1.587	1412.	1.548
265.	1.591	1413.	1.551
266.	1.585	1414.	1.547
267.	1.585	1415.	1.549
268.	1.59	1416.	1.541
269.	1.587	1417.	1.546
270.	1.584	1418.	1.548
271.	1.583	1419.	1.547
272.	1.585	1420.	1.545
273.	1.588	1421.	1.545
274.	1.583	1422.	1.548
275.	1.586	1423.	1.552
276.	1.582	1424.	1.544
277.	1.589	1425.	1.549
278.	1.579	1426.	1.549
279.	1.585	1427.	1.546
280.	1.583	1428.	1.547
281.	1.587	1429.	1.549
282.	1.583	1430.	1.55
283.	1.585	1431.	1.55
284.	1.584	1432.	1.552
285.	1.581	1433.	1.552
286.	1.588	1434.	1.546
287.	1.58	1435.	1.547
288.	1.59	1436.	1.545
289.	1.582	1437.	1.546
290.	1.583	1438.	1.544
291.	1.582	1439.	1.544
292.	1.583	1440.	1.55
293.	1.584	1441.	1.551
294.	1.59	1442.	1.552
295.	1.581	1443.	1.55
296.	1.587	1444.	1.548

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
297.	1.585	1445.	1.546
298.	1.581	1446.	1.546
299.	1.582	1447.	1.546
300.	1.589	1448.	1.55
301.	1.584	1449.	1.547
302.	1.584	1450.	1.546
303.	1.586	1451.	1.553
304.	1.581	1452.	1.544
305.	1.583	1453.	1.549
306.	1.586	1454.	1.551
307.	1.582	1455.	1.553
308.	1.586	1456.	1.546
309.	1.581	1457.	1.548
310.	1.585	1458.	1.544
311.	1.585	1459.	1.553
312.	1.587	1460.	1.555
313.	1.584	1461.	1.546
314.	1.579	1462.	1.549
315.	1.58	1463.	1.548
316.	1.581	1464.	1.55
317.	1.582	1465.	1.55
318.	1.582	1466.	1.55
319.	1.58	1467.	1.548
320.	1.584	1468.	1.546
321.	1.588	1469.	1.55
322.	1.583	1470.	1.547
323.	1.584	1471.	1.546
324.	1.584	1472.	1.544
325.	1.584	1473.	1.552
326.	1.582	1474.	1.548
327.	1.582	1475.	1.549
328.	1.583	1476.	1.546
329.	1.58	1477.	1.548
330.	1.587	1478.	1.547
331.	1.583	1479.	1.552
332.	1.581	1480.	1.551
333.	1.582	1481.	1.548
334.	1.587	1482.	1.55
335.	1.58	1483.	1.552
336.	1.586	1484.	1.549
337.	1.58	1485.	1.547
338.	1.58	1486.	1.551
339.	1.583	1487.	1.552
340.	1.584	1488.	1.546
341.	1.583	1489.	1.549
342.	1.58	1490.	1.549
343.	1.581	1491.	1.551
344.	1.579	1492.	1.553
345.	1.582	1493.	1.551
346.	1.581	1494.	1.548
347.	1.58	1495.	1.551
348.	1.58	1496.	1.555
349.	1.581	1497.	1.548
350.	1.576	1498.	1.553
351.	1.582	1499.	1.552
352.	1.583	1500.	1.551
353.	1.581	1501.	1.551
354.	1.583	1502.	1.553
355.	1.582	1503.	1.551
356.	1.583	1504.	1.556
357.	1.579	1505.	1.551
358.	1.581	1506.	1.551
359.	1.584	1507.	1.546
360.	1.579	1508.	1.555
361.	1.579	1509.	1.553
362.	1.58	1510.	1.551
363.	1.577	1511.	1.551

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
364.	1.58	1512.	1.55
365.	1.583	1513.	1.55
366.	1.58	1514.	1.553
367.	1.58	1515.	1.552
368.	1.581	1516.	1.552
369.	1.58	1517.	1.55
370.	1.575	1518.	1.551
371.	1.585	1519.	1.553
372.	1.579	1520.	1.553
373.	1.577	1521.	1.553
374.	1.58	1522.	1.553
375.	1.581	1523.	1.554
376.	1.578	1524.	1.553
377.	1.584	1525.	1.551
378.	1.58	1526.	1.549
379.	1.575	1527.	1.553
380.	1.581	1528.	1.555
381.	1.581	1529.	1.554
382.	1.579	1530.	1.548
383.	1.577	1531.	1.55
384.	1.577	1532.	1.549
385.	1.576	1533.	1.552
386.	1.574	1534.	1.554
387.	1.579	1535.	1.549
388.	1.58	1536.	1.552
389.	1.58	1537.	1.549
390.	1.581	1538.	1.548
391.	1.576	1539.	1.551
392.	1.578	1540.	1.55
393.	1.576	1541.	1.549
394.	1.575	1542.	1.547
395.	1.579	1543.	1.551
396.	1.573	1544.	1.552
397.	1.575	1545.	1.555
398.	1.584	1546.	1.545
399.	1.572	1547.	1.552
400.	1.576	1548.	1.552
401.	1.573	1549.	1.551
402.	1.574	1550.	1.549
403.	1.581	1551.	1.549
404.	1.576	1552.	1.552
405.	1.572	1553.	1.552
406.	1.577	1554.	1.552
407.	1.578	1555.	1.551
408.	1.575	1556.	1.554
409.	1.572	1557.	1.548
410.	1.58	1558.	1.55
411.	1.574	1559.	1.549
412.	1.57	1560.	1.549
413.	1.575	1561.	1.555
414.	1.575	1562.	1.548
415.	1.577	1563.	1.545
416.	1.575	1564.	1.548
417.	1.572	1565.	1.549
418.	1.573	1566.	1.552
419.	1.572	1567.	1.549
420.	1.57	1568.	1.552
421.	1.577	1569.	1.552
422.	1.57	1570.	1.552
423.	1.576	1571.	1.55
424.	1.57	1572.	1.551
425.	1.572	1573.	1.551
426.	1.569	1574.	1.553
427.	1.57	1575.	1.551
428.	1.571	1576.	1.551
429.	1.572	1577.	1.552
430.	1.57	1578.	1.548

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
431.	1.567	1579.	1.548
432.	1.569	1580.	1.556
433.	1.569	1581.	1.557
434.	1.57	1582.	1.551
435.	1.573	1583.	1.553
436.	1.572	1584.	1.55
437.	1.569	1585.	1.555
438.	1.566	1586.	1.549
439.	1.569	1587.	1.551
440.	1.568	1588.	1.552
441.	1.57	1589.	1.553
442.	1.565	1590.	1.553
443.	1.568	1591.	1.553
444.	1.573	1592.	1.55
445.	1.568	1593.	1.552
446.	1.569	1594.	1.554
447.	1.57	1595.	1.551
448.	1.57	1596.	1.552
449.	1.57	1597.	1.553
450.	1.57	1598.	1.551
451.	1.57	1599.	1.553
452.	1.571	1600.	1.557
453.	1.571	1601.	1.549
454.	1.569	1602.	1.554
455.	1.57	1603.	1.553
456.	1.567	1604.	1.551
457.	1.568	1605.	1.554
458.	1.57	1606.	1.554
459.	1.566	1607.	1.554
460.	1.566	1608.	1.551
461.	1.57	1609.	1.55
462.	1.568	1610.	1.553
463.	1.571	1611.	1.551
464.	1.567	1612.	1.551
465.	1.566	1613.	1.552
466.	1.57	1614.	1.554
467.	1.572	1615.	1.551
468.	1.566	1616.	1.55
469.	1.567	1617.	1.548
470.	1.568	1618.	1.55
471.	1.566	1619.	1.552
472.	1.565	1620.	1.548
473.	1.568	1621.	1.553
474.	1.564	1622.	1.553
475.	1.569	1623.	1.55
476.	1.568	1624.	1.559
477.	1.549	1625.	1.556
478.	1.564	1626.	1.55
479.	1.565	1627.	1.552
480.	1.566	1628.	1.553
481.	1.57	1629.	1.557
482.	1.566	1630.	1.554
483.	1.565	1631.	1.551
484.	1.567	1632.	1.554
485.	1.568	1633.	1.553
486.	1.569	1634.	1.558
487.	1.567	1635.	1.553
488.	1.565	1636.	1.55
489.	1.568	1637.	1.552
490.	1.565	1638.	1.552
491.	1.571	1639.	1.552
492.	1.568	1640.	1.553
493.	1.564	1641.	1.552
494.	1.566	1642.	1.556
495.	1.561	1643.	1.553
496.	1.569	1644.	1.552
497.	1.566	1645.	1.554

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
498.	1.567	1646.	1.552
499.	1.572	1647.	1.554
500.	1.569	1648.	1.55
501.	1.566	1649.	1.553
502.	1.567	1650.	1.552
503.	1.564	1651.	1.55
504.	1.563	1652.	1.555
505.	1.56	1653.	1.555
506.	1.564	1654.	1.546
507.	1.567	1655.	1.553
508.	1.564	1656.	1.551
509.	1.568	1657.	1.548
510.	1.565	1658.	1.554
511.	1.566	1659.	1.553
512.	1.561	1660.	1.552
513.	1.565	1661.	1.555
514.	1.566	1662.	1.552
515.	1.562	1663.	1.554
516.	1.563	1664.	1.551
517.	1.57	1665.	1.557
518.	1.567	1666.	1.554
519.	1.563	1667.	1.552
520.	1.564	1668.	1.551
521.	1.567	1669.	1.555
522.	1.565	1670.	1.548
523.	1.565	1671.	1.551
524.	1.566	1672.	1.548
525.	1.565	1673.	1.552
526.	1.565	1674.	1.549
527.	1.565	1675.	1.554
528.	1.568	1676.	1.548
529.	1.567	1677.	1.553
530.	1.565	1678.	1.552
531.	1.569	1679.	1.552
532.	1.567	1680.	1.547
533.	1.566	1681.	1.552
534.	1.547	1682.	1.549
535.	1.573	1683.	1.551
536.	1.568	1684.	1.552
537.	1.566	1685.	1.552
538.	1.565	1686.	1.551
539.	1.568	1687.	1.552
540.	1.563	1688.	1.553
541.	1.566	1689.	1.551
542.	1.568	1690.	1.551
543.	1.567	1691.	1.554
544.	1.57	1692.	1.551
545.	1.565	1693.	1.554
546.	1.564	1694.	1.552
547.	1.566	1695.	1.551
548.	1.569	1696.	1.549
549.	1.573	1697.	1.556
550.	1.565	1698.	1.554
551.	1.562	1699.	1.555
552.	1.567	1700.	1.556
553.	1.568	1701.	1.551
554.	1.567	1702.	1.553
555.	1.571	1703.	1.553
556.	1.564	1704.	1.554
557.	1.564	1705.	1.552
558.	1.569	1706.	1.554
559.	1.565	1707.	1.547
560.	1.568	1708.	1.553
561.	1.568	1709.	1.552
562.	1.568	1710.	1.551
563.	1.566	1711.	1.552
564.	1.571	1712.	1.549

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
565.	1.572	1713.	1.552
566.	1.57	1714.	1.551
567.	1.568	1715.	1.552
568.	1.571	1716.	1.549
569.	1.568	1717.	1.552
570.	1.564	1718.	1.55
571.	1.567	1719.	1.551
572.	1.568	1720.	1.554
573.	1.564	1721.	1.549
574.	1.571	1722.	1.554
575.	1.564	1723.	1.55
576.	1.565	1724.	1.552
577.	1.561	1725.	1.552
578.	1.564	1726.	1.55
579.	1.567	1727.	1.545
580.	1.564	1728.	1.557
581.	1.567	1729.	1.552
582.	1.568	1730.	1.553
583.	1.567	1731.	1.55
584.	1.568	1732.	1.55
585.	1.569	1733.	1.55
586.	1.57	1734.	1.551
587.	1.567	1735.	1.552
588.	1.566	1736.	1.549
589.	1.568	1737.	1.549
590.	1.569	1738.	1.557
591.	1.568	1739.	1.549
592.	1.567	1740.	1.549
593.	1.57	1741.	1.553
594.	1.568	1742.	1.55
595.	1.565	1743.	1.556
596.	1.568	1744.	1.55
597.	1.568	1745.	1.553
598.	1.568	1746.	1.554
599.	1.567	1747.	1.554
600.	1.565	1748.	1.551
601.	1.57	1749.	1.553
602.	1.57	1750.	1.553
603.	1.568	1751.	1.553
604.	1.568	1752.	1.551
605.	1.565	1753.	1.55
606.	1.566	1754.	1.552
607.	1.568	1755.	1.552
608.	1.561	1756.	1.55
609.	1.565	1757.	1.555
610.	1.567	1758.	1.557
611.	1.564	1759.	1.551
612.	1.569	1760.	1.553
613.	1.568	1761.	1.55
614.	1.565	1762.	1.554
615.	1.568	1763.	1.554
616.	1.567	1764.	1.555
617.	1.57	1765.	1.554
618.	1.567	1766.	1.555
619.	1.572	1767.	1.553
620.	1.568	1768.	1.553
621.	1.57	1769.	1.553
622.	1.568	1770.	1.552
623.	1.567	1771.	1.554
624.	1.566	1772.	1.552
625.	1.57	1773.	1.555
626.	1.567	1774.	1.556
627.	1.565	1775.	1.556
628.	1.567	1776.	1.554
629.	1.567	1777.	1.551
630.	1.569	1778.	1.554
631.	1.569	1779.	1.553

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
632.	1.571	1780.	1.555
633.	1.565	1781.	1.552
634.	1.563	1782.	1.558
635.	1.562	1783.	1.56
636.	1.562	1784.	1.558
637.	1.56	1785.	1.557
638.	1.565	1786.	1.551
639.	1.562	1787.	1.558
640.	1.561	1788.	1.555
641.	1.561	1789.	1.554
642.	1.556	1790.	1.552
643.	1.563	1791.	1.557
644.	1.564	1792.	1.551
645.	1.562	1793.	1.557
646.	1.564	1794.	1.555
647.	1.556	1795.	1.556
648.	1.562	1796.	1.56
649.	1.563	1797.	1.557
650.	1.558	1798.	1.556
651.	1.56	1799.	1.553
652.	1.563	1800.	1.557
653.	1.56	1801.	1.557
654.	1.56	1802.	1.556
655.	1.568	1803.	1.555
656.	1.559	1804.	1.555
657.	1.56	1805.	1.556
658.	1.563	1806.	1.552
659.	1.561	1807.	1.553
660.	1.554	1808.	1.555
661.	1.547	1809.	1.558
662.	1.565	1810.	1.559
663.	1.56	1811.	1.556
664.	1.566	1812.	1.554
665.	1.561	1813.	1.555
666.	1.557	1814.	1.555
667.	1.561	1815.	1.558
668.	1.56	1816.	1.553
669.	1.564	1817.	1.556
670.	1.567	1818.	1.561
671.	1.56	1819.	1.555
672.	1.562	1820.	1.556
673.	1.564	1821.	1.559
674.	1.562	1822.	1.559
675.	1.565	1823.	1.561
676.	1.565	1824.	1.557
677.	1.559	1825.	1.558
678.	1.562	1826.	1.555
679.	1.562	1827.	1.558
680.	1.559	1828.	1.55
681.	1.563	1829.	1.559
682.	1.563	1830.	1.56
683.	1.561	1831.	1.558
684.	1.558	1832.	1.554
685.	1.56	1833.	1.561
686.	1.561	1834.	1.553
687.	1.559	1835.	1.558
688.	1.563	1836.	1.555
689.	1.56	1837.	1.557
690.	1.562	1838.	1.559
691.	1.557	1839.	1.557
692.	1.562	1840.	1.556
693.	1.558	1841.	1.559
694.	1.561	1842.	1.557
695.	1.557	1843.	1.559
696.	1.561	1844.	1.555
697.	1.558	1845.	1.558
698.	1.558	1846.	1.553

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
699.	1.554	1847.	1.558
700.	1.554	1848.	1.559
701.	1.558	1849.	1.553
702.	1.556	1850.	1.555
703.	1.557	1851.	1.556
704.	1.558	1852.	1.559
705.	1.559	1853.	1.559
706.	1.555	1854.	1.556
707.	1.556	1855.	1.556
708.	1.556	1856.	1.557
709.	1.555	1857.	1.558
710.	1.553	1858.	1.557
711.	1.554	1859.	1.558
712.	1.554	1860.	1.556
713.	1.556	1861.	1.557
714.	1.555	1862.	1.562
715.	1.556	1863.	1.56
716.	1.559	1864.	1.559
717.	1.557	1865.	1.556
718.	1.56	1866.	1.56
719.	1.554	1867.	1.557
720.	1.559	1868.	1.555
721.	1.558	1869.	1.558
722.	1.56	1870.	1.557
723.	1.558	1871.	1.562
724.	1.555	1872.	1.56
725.	1.556	1873.	1.556
726.	1.558	1874.	1.557
727.	1.558	1875.	1.56
728.	1.561	1876.	1.557
729.	1.559	1877.	1.559
730.	1.554	1878.	1.56
731.	1.552	1879.	1.558
732.	1.557	1880.	1.556
733.	1.554	1881.	1.561
734.	1.56	1882.	1.558
735.	1.559	1883.	1.561
736.	1.56	1884.	1.551
737.	1.557	1885.	1.556
738.	1.555	1886.	1.559
739.	1.557	1887.	1.556
740.	1.555	1888.	1.561
741.	1.56	1889.	1.561
742.	1.559	1890.	1.562
743.	1.56	1891.	1.556
744.	1.556	1892.	1.557
745.	1.554	1893.	1.56
746.	1.56	1894.	1.556
747.	1.554	1895.	1.557
748.	1.554	1896.	1.557
749.	1.558	1897.	1.554
750.	1.554	1898.	1.559
751.	1.553	1899.	1.556
752.	1.551	1900.	1.561
753.	1.558	1901.	1.555
754.	1.56	1902.	1.557
755.	1.553	1903.	1.561
756.	1.554	1904.	1.555
757.	1.557	1905.	1.556
758.	1.557	1906.	1.557
759.	1.554	1907.	1.558
760.	1.557	1908.	1.556
761.	1.558	1909.	1.556
762.	1.555	1910.	1.555
763.	1.556	1911.	1.555
764.	1.559	1912.	1.555
765.	1.562	1913.	1.56

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
766.	1.556	1914.	1.555
767.	1.552	1915.	1.557
768.	1.557	1916.	1.555
769.	1.558	1917.	1.561
770.	1.559	1918.	1.56
771.	1.557	1919.	1.559
772.	1.556	1920.	1.557
773.	1.555	1921.	1.557
774.	1.559	1922.	1.558
775.	1.555	1923.	1.553
776.	1.553	1924.	1.558
777.	1.557	1925.	1.556
778.	1.558	1926.	1.554
779.	1.556	1927.	1.556
780.	1.56	1928.	1.557
781.	1.557	1929.	1.557
782.	1.554	1930.	1.558
783.	1.552	1931.	1.552
784.	1.557	1932.	1.553
785.	1.552	1933.	1.557
786.	1.552	1934.	1.555
787.	1.556	1935.	1.555
788.	1.555	1936.	1.558
789.	1.554	1937.	1.554
790.	1.553	1938.	1.557
791.	1.553	1939.	1.555
792.	1.555	1940.	1.56
793.	1.555	1941.	1.558
794.	1.557	1942.	1.559
795.	1.554	1943.	1.554
796.	1.555	1944.	1.559
797.	1.559	1945.	1.556
798.	1.555	1946.	1.558
799.	1.557	1947.	1.554
800.	1.555	1948.	1.557
801.	1.553	1949.	1.56
802.	1.559	1950.	1.552
803.	1.558	1951.	1.555
804.	1.557	1952.	1.554
805.	1.554	1953.	1.557
806.	1.556	1954.	1.559
807.	1.557	1955.	1.555
808.	1.56	1956.	1.558
809.	1.555	1957.	1.554
810.	1.557	1958.	1.557
811.	1.557	1959.	1.556
812.	1.557	1960.	1.556
813.	1.558	1961.	1.555
814.	1.56	1962.	1.555
815.	1.561	1963.	1.555
816.	1.56	1964.	1.554
817.	1.559	1965.	1.553
818.	1.557	1966.	1.556
819.	1.536	1967.	1.552
820.	1.556	1968.	1.554
821.	1.564	1969.	1.557
822.	1.557	1970.	1.554
823.	1.557	1971.	1.554
824.	1.555	1972.	1.556
825.	1.556	1973.	1.556
826.	1.557	1974.	1.554
827.	1.558	1975.	1.555
828.	1.564	1976.	1.557
829.	1.564	1977.	1.545
830.	1.558	1978.	1.557
831.	1.558	1979.	1.553
832.	1.554	1980.	1.557

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
833.	1.559	1981.	1.552
834.	1.56	1982.	1.555
835.	1.559	1983.	1.556
836.	1.555	1984.	1.556
837.	1.561	1985.	1.553
838.	1.563	1986.	1.551
839.	1.558	1987.	1.556
840.	1.559	1988.	1.558
841.	1.558	1989.	1.555
842.	1.56	1990.	1.557
843.	1.559	1991.	1.556
844.	1.567	1992.	1.55
845.	1.559	1993.	1.555
846.	1.557	1994.	1.552
847.	1.559	1995.	1.554
848.	1.561	1996.	1.553
849.	1.559	1997.	1.554
850.	1.559	1998.	1.556
851.	1.559	1999.	1.556
852.	1.557	2000.	1.552
853.	1.56	2001.	1.555
854.	1.559	2002.	1.557
855.	1.558	2003.	1.555
856.	1.561	2004.	1.559
857.	1.561	2005.	1.557
858.	1.559	2006.	1.554
859.	1.557	2007.	1.554
860.	1.557	2008.	1.556
861.	1.56	2009.	1.558
862.	1.563	2010.	1.553
863.	1.56	2011.	1.554
864.	1.56	2012.	1.557
865.	1.559	2013.	1.558
866.	1.557	2014.	1.551
867.	1.56	2015.	1.553
868.	1.556	2016.	1.553
869.	1.555	2017.	1.554
870.	1.557	2018.	1.556
871.	1.558	2019.	1.556
872.	1.559	2020.	1.552
873.	1.56	2021.	1.554
874.	1.557	2022.	1.557
875.	1.555	2023.	1.556
876.	1.555	2024.	1.553
877.	1.562	2025.	1.556
878.	1.557	2026.	1.553
879.	1.557	2027.	1.551
880.	1.557	2028.	1.557
881.	1.561	2029.	1.555
882.	1.56	2030.	1.554
883.	1.56	2031.	1.552
884.	1.561	2032.	1.552
885.	1.557	2033.	1.557
886.	1.556	2034.	1.55
887.	1.552	2035.	1.556
888.	1.558	2036.	1.556
889.	1.561	2037.	1.558
890.	1.557	2038.	1.556
891.	1.557	2039.	1.553
892.	1.557	2040.	1.555
893.	1.559	2041.	1.556
894.	1.558	2042.	1.554
895.	1.557	2043.	1.555
896.	1.558	2044.	1.556
897.	1.558	2045.	1.557
898.	1.555	2046.	1.556
899.	1.555	2047.	1.555

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
900.	1.557	2048.	1.555
901.	1.554	2049.	1.557
902.	1.561	2050.	1.554
903.	1.556	2051.	1.556
904.	1.552	2052.	1.552
905.	1.554	2053.	1.558
906.	1.561	2054.	1.553
907.	1.557	2055.	1.553
908.	1.552	2056.	1.552
909.	1.556	2057.	1.554
910.	1.553	2058.	1.554
911.	1.556	2059.	1.554
912.	1.558	2060.	1.557
913.	1.555	2061.	1.555
914.	1.556	2062.	1.555
915.	1.558	2063.	1.555
916.	1.552	2064.	1.557
917.	1.554	2065.	1.555
918.	1.552	2066.	1.554
919.	1.554	2067.	1.557
920.	1.552	2068.	1.557
921.	1.551	2069.	1.554
922.	1.555	2070.	1.552
923.	1.554	2071.	1.558
924.	1.553	2072.	1.556
925.	1.554	2073.	1.556
926.	1.559	2074.	1.55
927.	1.555	2075.	1.55
928.	1.554	2076.	1.552
929.	1.556	2077.	1.556
930.	1.555	2078.	1.554
931.	1.556	2079.	1.551
932.	1.553	2080.	1.558
933.	1.555	2081.	1.553
934.	1.553	2082.	1.556
935.	1.553	2083.	1.554
936.	1.554	2084.	1.559
937.	1.554	2085.	1.557
938.	1.556	2086.	1.555
939.	1.556	2087.	1.551
940.	1.551	2088.	1.557
941.	1.552	2089.	1.555
942.	1.553	2090.	1.555
943.	1.555	2091.	1.554
944.	1.552	2092.	1.548
945.	1.553	2093.	1.555
946.	1.55	2094.	1.554
947.	1.551	2095.	1.553
948.	1.55	2096.	1.558
949.	1.553	2097.	1.554
950.	1.55	2098.	1.552
951.	1.551	2099.	1.554
952.	1.551	2100.	1.551
953.	1.552	2101.	1.553
954.	1.551	2102.	1.553
955.	1.551	2103.	1.552
956.	1.548	2104.	1.553
957.	1.552	2105.	1.555
958.	1.552	2106.	1.559
959.	1.557	2107.	1.556
960.	1.55	2108.	1.555
961.	1.551	2109.	1.556
962.	1.555	2110.	1.555
963.	1.551	2111.	1.554
964.	1.549	2112.	1.553
965.	1.553	2113.	1.559
966.	1.555	2114.	1.555

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
967.	1.551	2115.	1.557
968.	1.547	2116.	1.558
969.	1.55	2117.	1.556
970.	1.549	2118.	1.554
971.	1.549	2119.	1.556
972.	1.547	2120.	1.559
973.	1.554	2121.	1.552
974.	1.551	2122.	1.554
975.	1.549	2123.	1.557
976.	1.552	2124.	1.557
977.	1.551	2125.	1.557
978.	1.551	2126.	1.553
979.	1.548	2127.	1.556
980.	1.532	2128.	1.56
981.	1.555	2129.	1.553
982.	1.549	2130.	1.554
983.	1.55	2131.	1.556
984.	1.548	2132.	1.558
985.	1.555	2133.	1.559
986.	1.551	2134.	1.557
987.	1.546	2135.	1.562
988.	1.55	2136.	1.558
989.	1.546	2137.	1.563
990.	1.556	2138.	1.56
991.	1.548	2139.	1.559
992.	1.542	2140.	1.557
993.	1.549	2141.	1.554
994.	1.548	2142.	1.556
995.	1.549	2143.	1.552
996.	1.549	2144.	1.557
997.	1.546	2145.	1.552
998.	1.55	2146.	1.553
999.	1.549	2147.	1.558
1000.	1.548	2148.	1.551
1001.	1.551	2149.	1.555
1002.	1.55	2150.	1.559
1003.	1.549	2151.	1.557
1004.	1.549	2152.	1.551
1005.	1.549	2153.	1.555
1006.	1.551	2154.	1.551
1007.	1.549	2155.	1.555
1008.	1.551	2156.	1.557
1009.	1.551	2157.	1.557
1010.	1.552	2158.	1.558
1011.	1.551	2159.	1.559
1012.	1.552	2160.	1.556
1013.	1.552	2161.	1.553
1014.	1.552	2162.	1.554
1015.	1.549	2163.	1.557
1016.	1.551	2164.	1.555
1017.	1.552	2165.	1.557
1018.	1.553	2166.	1.555
1019.	1.551	2167.	1.562
1020.	1.55	2168.	1.556
1021.	1.549	2169.	1.557
1022.	1.55	2170.	1.557
1023.	1.55	2171.	1.553
1024.	1.55	2172.	1.56
1025.	1.554	2173.	1.557
1026.	1.545	2174.	1.558
1027.	1.551	2175.	1.554
1028.	1.552	2176.	1.556
1029.	1.552	2177.	1.556
1030.	1.551	2178.	1.555
1031.	1.555	2179.	1.555
1032.	1.55	2180.	1.551
1033.	1.551	2181.	1.557

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
1034.	1.554	2182.	1.555
1035.	1.549	2183.	1.561
1036.	1.548	2184.	1.56
1037.	1.549	2185.	1.552
1038.	1.556	2186.	1.558
1039.	1.551	2187.	1.558
1040.	1.553	2188.	1.552
1041.	1.55	2189.	1.559
1042.	1.549	2190.	1.55
1043.	1.556	2191.	1.556
1044.	1.553	2192.	1.555
1045.	1.55	2193.	1.559
1046.	1.553	2194.	1.555
1047.	1.548	2195.	1.558
1048.	1.548	2196.	1.556
1049.	1.554	2197.	1.559
1050.	1.557	2198.	1.56
1051.	1.555	2199.	1.558
1052.	1.545	2200.	1.557
1053.	1.551	2201.	1.556
1054.	1.551	2202.	1.555
1055.	1.557	2203.	1.562
1056.	1.556	2204.	1.559
1057.	1.554	2205.	1.559
1058.	1.551	2206.	1.559
1059.	1.554	2207.	1.557
1060.	1.552	2208.	1.558
1061.	1.554	2209.	1.56
1062.	1.55	2210.	1.558
1063.	1.553	2211.	1.557
1064.	1.555	2212.	1.553
1065.	1.555	2213.	1.561
1066.	1.552	2214.	1.558
1067.	1.551	2215.	1.561
1068.	1.554	2216.	1.56
1069.	1.553	2217.	1.562
1070.	1.553	2218.	1.56
1071.	1.552	2219.	1.559
1072.	1.549	2220.	1.561
1073.	1.556	2221.	1.556
1074.	1.551	2222.	1.555
1075.	1.552	2223.	1.558
1076.	1.551	2224.	1.553
1077.	1.552	2225.	1.559
1078.	1.555	2226.	1.557
1079.	1.558	2227.	1.556
1080.	1.55	2228.	1.559
1081.	1.555	2229.	1.555
1082.	1.552	2230.	1.56
1083.	1.551	2231.	1.56
1084.	1.554	2232.	1.558
1085.	1.553	2233.	1.561
1086.	1.554	2234.	1.553
1087.	1.553	2235.	1.56
1088.	1.549	2236.	1.559
1089.	1.553	2237.	1.556
1090.	1.553	2238.	1.561
1091.	1.554	2239.	1.556
1092.	1.552	2240.	1.558
1093.	1.56	2241.	1.562
1094.	1.55	2242.	1.56
1095.	1.557	2243.	1.56
1096.	1.55	2244.	1.557
1097.	1.551	2245.	1.56
1098.	1.552	2246.	1.558
1099.	1.552	2247.	1.559
1100.	1.551	2248.	1.554

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
1101.	1.552	2249.	1.563
1102.	1.552	2250.	1.559
1103.	1.554	2251.	1.558
1104.	1.552	2252.	1.555
1105.	1.55	2253.	1.557
1106.	1.55	2254.	1.555
1107.	1.546	2255.	1.558
1108.	1.552	2256.	1.551
1109.	1.551	2257.	1.555
1110.	1.55	2258.	1.561
1111.	1.556	2259.	1.557
1112.	1.55	2260.	1.559
1113.	1.55	2261.	1.56
1114.	1.553	2262.	1.56
1115.	1.55	2263.	1.56
1116.	1.549	2264.	1.555
1117.	1.55	2265.	1.557
1118.	1.558	2266.	1.558
1119.	1.551	2267.	1.554
1120.	1.55	2268.	1.554
1121.	1.55	2269.	1.558
1122.	1.551	2270.	1.56
1123.	1.552	2271.	1.559
1124.	1.551	2272.	1.565
1125.	1.55	2273.	1.558
1126.	1.55	2274.	1.559
1127.	1.553	2275.	1.557
1128.	1.557	2276.	1.561
1129.	1.554	2277.	1.558
1130.	1.551	2278.	1.554
1131.	1.551	2279.	1.557
1132.	1.545	2280.	1.557
1133.	1.554	2281.	1.559
1134.	1.555	2282.	1.556
1135.	1.553	2283.	1.556
1136.	1.549	2284.	1.555
1137.	1.553	2285.	1.557
1138.	1.551	2286.	1.534
1139.	1.552	2287.	1.557
1140.	1.551	2288.	1.555
1141.	1.531	2289.	1.56
1142.	1.55	2290.	1.558
1143.	1.552	2291.	1.557
1144.	1.55	2292.	1.555
1145.	1.551	2293.	1.553
1146.	1.553	2294.	1.557
1147.	1.552		

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 4.099

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.00432	ft/day
y0	1.633	ft

K = 1.524E-6 cm/sec
T = K*b = 0.3326 ft²/day (0.003577 sq. cm/sec)

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
K	0.00432	6.862E-5	+/- 0.0001346	62.96	ft/day
y0	1.633	0.001398	+/- 0.002742	1168.1	ft

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

K = 1.524E-6 cm/sec
T = K*b = 0.3326 ft²/day (0.003577 sq. cm/sec)

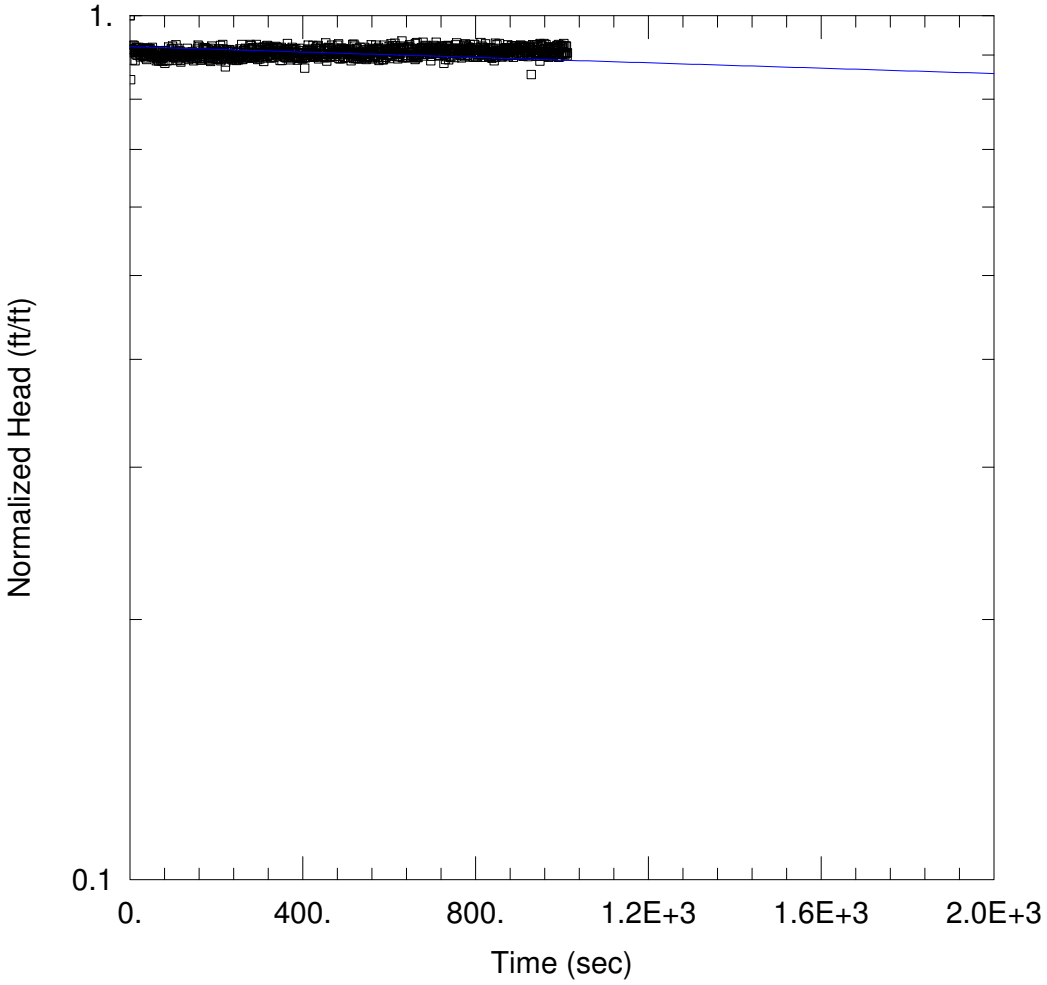
Parameter Correlations

	K	y0
K	1.00	0.84
y0	0.84	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . . 2.46 ft^2
Variance . . . . . 0.001073 ft^2
Std. Deviation . . . . . 0.03275 ft
Mean . . . . . 0.002997 ft
No. of Residuals 2295
No. of Estimates 2



127-137 INTERVAL

Data Set: U:\...\127-137_EDH.aqt
Date: 09/09/13 Time: 14:55:32

PROJECT INFORMATION

Company: Kleinfelder
Client: Fairfax Petroleum
Location: Great Falls, Virginia
Test Well: MW-17D
Test Date: 8/1/13

AQUIFER DATA

Saturated Thickness: 77. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-17D 127-137)

Initial Displacement: 1.197 ft
Total Well Penetration Depth: 103.4 ft
Casing Radius: 0.083 ft
Static Water Column Height: 30.59 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.00432 ft/day
y0 = 1.102 ft

Data Set: U:\wpdraft\Captial Petroleum Group\Fairfax Petroleum Realty LLC\26140 Great Falls 2010-3028\Data\201
Title: 127-137 Interval
Date: 09/10/13
Time: 05:21:55

PROJECT INFORMATION

Company: Kleinfelder
Client: Fairfax Petroleum
Location: Great Falls, Virginia
Test Date: 8/1/13
Test Well: MW-17D

AQUIFER DATA

Saturated Thickness: 77. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-17D 127-137

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 1.197 ft
Static Water Column Height: 30.59 ft
Casing Radius: 0.083 ft
Well Radius: 0.25 ft
Well Skin Radius: 0.2501 ft
Screen Length: 10. ft
Total Well Penetration Depth: 103.4 ft
Corrected Casing Radius (Butler Method): 0.08178 ft
Expected Initial Displacement: 1.24 ft

No. of Observations: 1013

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
1.	1.197	508.	1.094
2.	1.009	509.	1.079
3.	1.101	510.	1.085
4.	1.096	511.	1.094
5.	1.084	512.	1.061
6.	1.063	513.	1.082
7.	1.106	514.	1.078
8.	1.094	515.	1.075
9.	1.093	516.	1.108
10.	1.105	517.	1.088
11.	1.089	518.	1.067
12.	1.061	519.	1.109
13.	1.089	520.	1.084
14.	1.08	521.	1.103
15.	1.1	522.	1.067
16.	1.099	523.	1.08
17.	1.076	524.	1.068
18.	1.086	525.	1.097
19.	1.088	526.	1.069
20.	1.091	527.	1.095
21.	1.1	528.	1.066
22.	1.084	529.	1.085
23.	1.087	530.	1.073
24.	1.072	531.	1.079
25.	1.079	532.	1.082
26.	1.087	533.	1.1
27.	1.09	534.	1.074
28.	1.084	535.	1.078
29.	1.085	536.	1.073

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
30.	1.096	537.	1.066
31.	1.074	538.	1.075
32.	1.098	539.	1.086
33.	1.084	540.	1.087
34.	1.076	541.	1.091
35.	1.087	542.	1.082
36.	1.093	543.	1.1
37.	1.069	544.	1.085
38.	1.077	545.	1.069
39.	1.065	546.	1.092
40.	1.086	547.	1.065
41.	1.093	548.	1.082
42.	1.098	549.	1.071
43.	1.096	550.	1.069
44.	1.081	551.	1.079
45.	1.093	552.	1.074
46.	1.074	553.	1.073
47.	1.096	554.	1.079
48.	1.074	555.	1.095
49.	1.072	556.	1.088
50.	1.08	557.	1.087
51.	1.086	558.	1.082
52.	1.1	559.	1.107
53.	1.079	560.	1.093
54.	1.082	561.	1.066
55.	1.078	562.	1.097
56.	1.09	563.	1.075
57.	1.09	564.	1.077
58.	1.073	565.	1.091
59.	1.075	566.	1.075
60.	1.089	567.	1.092
61.	1.061	568.	1.07
62.	1.067	569.	1.106
63.	1.07	570.	1.075
64.	1.076	571.	1.094
65.	1.064	572.	1.092
66.	1.086	573.	1.071
67.	1.06	574.	1.096
68.	1.073	575.	1.066
69.	1.086	576.	1.1
70.	1.073	577.	1.062
71.	1.066	578.	1.087
72.	1.062	579.	1.085
73.	1.075	580.	1.086
74.	1.072	581.	1.082
75.	1.069	582.	1.084
76.	1.069	583.	1.094
77.	1.059	584.	1.083
78.	1.071	585.	1.079
79.	1.089	586.	1.064
80.	1.08	587.	1.065
81.	1.054	588.	1.071
82.	1.09	589.	1.106
83.	1.089	590.	1.09
84.	1.079	591.	1.094
85.	1.073	592.	1.093
86.	1.061	593.	1.071
87.	1.076	594.	1.091
88.	1.083	595.	1.094
89.	1.074	596.	1.076
90.	1.101	597.	1.088
91.	1.062	598.	1.079
92.	1.079	599.	1.091
93.	1.084	600.	1.102
94.	1.076	601.	1.067
95.	1.085	602.	1.088
96.	1.095	603.	1.075

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
97.	1.084	604.	1.097
98.	1.079	605.	1.11
99.	1.103	606.	1.098
100.	1.073	607.	1.075
101.	1.071	608.	1.104
102.	1.095	609.	1.086
103.	1.085	610.	1.086
104.	1.077	611.	1.096
105.	1.069	612.	1.093
106.	1.088	613.	1.098
107.	1.107	614.	1.112
108.	1.074	615.	1.104
109.	1.062	616.	1.084
110.	1.074	617.	1.098
111.	1.097	618.	1.073
112.	1.088	619.	1.085
113.	1.078	620.	1.066
114.	1.066	621.	1.098
115.	1.082	622.	1.098
116.	1.089	623.	1.073
117.	1.062	624.	1.079
118.	1.057	625.	1.082
119.	1.08	626.	1.086
120.	1.08	627.	1.095
121.	1.072	628.	1.1
122.	1.074	629.	1.09
123.	1.082	630.	1.119
124.	1.075	631.	1.07
125.	1.072	632.	1.07
126.	1.079	633.	1.1
127.	1.085	634.	1.103
128.	1.07	635.	1.098
129.	1.074	636.	1.084
130.	1.069	637.	1.093
131.	1.083	638.	1.07
132.	1.074	639.	1.072
133.	1.097	640.	1.071
134.	1.077	641.	1.07
135.	1.086	642.	1.097
136.	1.065	643.	1.076
137.	1.083	644.	1.07
138.	1.073	645.	1.101
139.	1.084	646.	1.102
140.	1.073	647.	1.094
141.	1.079	648.	1.107
142.	1.078	649.	1.085
143.	1.069	650.	1.077
144.	1.079	651.	1.098
145.	1.087	652.	1.095
146.	1.067	653.	1.076
147.	1.082	654.	1.086
148.	1.061	655.	1.085
149.	1.082	656.	1.073
150.	1.078	657.	1.074
151.	1.085	658.	1.071
152.	1.091	659.	1.093
153.	1.07	660.	1.065
154.	1.079	661.	1.111
155.	1.082	662.	1.069
156.	1.067	663.	1.071
157.	1.097	664.	1.076
158.	1.106	665.	1.114
159.	1.078	666.	1.071
160.	1.102	667.	1.07
161.	1.08	668.	1.086
162.	1.069	669.	1.079
163.	1.063	670.	1.081

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
164.	1.078	671.	1.096
165.	1.085	672.	1.096
166.	1.064	673.	1.087
167.	1.069	674.	1.097
168.	1.075	675.	1.079
169.	1.098	676.	1.099
170.	1.074	677.	1.087
171.	1.092	678.	1.095
172.	1.067	679.	1.115
173.	1.08	680.	1.075
174.	1.099	681.	1.095
175.	1.097	682.	1.085
176.	1.081	683.	1.103
177.	1.093	684.	1.08
178.	1.096	685.	1.105
179.	1.085	686.	1.09
180.	1.078	687.	1.089
181.	1.094	688.	1.101
182.	1.084	689.	1.08
183.	1.066	690.	1.099
184.	1.085	691.	1.094
185.	1.063	692.	1.094
186.	1.097	693.	1.088
187.	1.059	694.	1.079
188.	1.071	695.	1.083
189.	1.08	696.	1.098
190.	1.103	697.	1.061
191.	1.091	698.	1.074
192.	1.067	699.	1.09
193.	1.087	700.	1.082
194.	1.069	701.	1.098
195.	1.082	702.	1.093
196.	1.072	703.	1.092
197.	1.075	704.	1.105
198.	1.066	705.	1.1
199.	1.077	706.	1.092
200.	1.09	707.	1.095
201.	1.066	708.	1.102
202.	1.087	709.	1.115
203.	1.067	710.	1.083
204.	1.074	711.	1.099
205.	1.065	712.	1.093
206.	1.074	713.	1.085
207.	1.095	714.	1.084
208.	1.094	715.	1.075
209.	1.079	716.	1.088
210.	1.105	717.	1.097
211.	1.061	718.	1.076
212.	1.065	719.	1.093
213.	1.074	720.	1.089
214.	1.087	721.	1.102
215.	1.108	722.	1.081
216.	1.095	723.	1.103
217.	1.088	724.	1.088
218.	1.071	725.	1.098
219.	1.078	726.	1.096
220.	1.074	727.	1.054
221.	1.044	728.	1.079
222.	1.057	729.	1.08
223.	1.093	730.	1.097
224.	1.073	731.	1.065
225.	1.092	732.	1.104
226.	1.073	733.	1.073
227.	1.066	734.	1.084
228.	1.078	735.	1.102
229.	1.08	736.	1.104
230.	1.093	737.	1.105

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
231.	1.068	738.	1.064
232.	1.088	739.	1.097
233.	1.074	740.	1.075
234.	1.075	741.	1.071
235.	1.07	742.	1.085
236.	1.066	743.	1.072
237.	1.064	744.	1.089
238.	1.091	745.	1.094
239.	1.087	746.	1.094
240.	1.074	747.	1.096
241.	1.073	748.	1.096
242.	1.064	749.	1.082
243.	1.075	750.	1.082
244.	1.069	751.	1.087
245.	1.071	752.	1.07
246.	1.084	753.	1.098
247.	1.062	754.	1.092
248.	1.074	755.	1.107
249.	1.069	756.	1.082
250.	1.086	757.	1.113
251.	1.067	758.	1.096
252.	1.064	759.	1.082
253.	1.075	760.	1.084
254.	1.077	761.	1.082
255.	1.095	762.	1.093
256.	1.072	763.	1.091
257.	1.088	764.	1.077
258.	1.073	765.	1.078
259.	1.108	766.	1.076
260.	1.078	767.	1.094
261.	1.065	768.	1.069
262.	1.066	769.	1.085
263.	1.089	770.	1.091
264.	1.077	771.	1.076
265.	1.086	772.	1.087
266.	1.094	773.	1.105
267.	1.09	774.	1.106
268.	1.097	775.	1.073
269.	1.08	776.	1.084
270.	1.069	777.	1.11
271.	1.083	778.	1.095
272.	1.071	779.	1.101
273.	1.077	780.	1.085
274.	1.075	781.	1.096
275.	1.096	782.	1.076
276.	1.096	783.	1.101
277.	1.085	784.	1.089
278.	1.068	785.	1.092
279.	1.108	786.	1.072
280.	1.071	787.	1.097
281.	1.104	788.	1.108
282.	1.094	789.	1.099
283.	1.073	790.	1.085
284.	1.086	791.	1.092
285.	1.099	792.	1.098
286.	1.069	793.	1.09
287.	1.083	794.	1.093
288.	1.073	795.	1.084
289.	1.077	796.	1.071
290.	1.095	797.	1.091
291.	1.07	798.	1.108
292.	1.077	799.	1.075
293.	1.108	800.	1.071
294.	1.085	801.	1.085
295.	1.078	802.	1.086
296.	1.065	803.	1.08
297.	1.1	804.	1.082

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
298.	1.072	805.	1.072
299.	1.077	806.	1.09
300.	1.072	807.	1.08
301.	1.066	808.	1.077
302.	1.089	809.	1.091
303.	1.094	810.	1.08
304.	1.084	811.	1.093
305.	1.073	812.	1.1
306.	1.078	813.	1.114
307.	1.099	814.	1.094
308.	1.069	815.	1.103
309.	1.081	816.	1.087
310.	1.059	817.	1.091
311.	1.101	818.	1.1
312.	1.091	819.	1.093
313.	1.093	820.	1.097
314.	1.087	821.	1.071
315.	1.087	822.	1.094
316.	1.1	823.	1.11
317.	1.103	824.	1.087
318.	1.074	825.	1.078
319.	1.105	826.	1.078
320.	1.08	827.	1.078
321.	1.084	828.	1.094
322.	1.095	829.	1.082
323.	1.095	830.	1.082
324.	1.076	831.	1.073
325.	1.069	832.	1.071
326.	1.101	833.	1.085
327.	1.087	834.	1.084
328.	1.069	835.	1.099
329.	1.088	836.	1.073
330.	1.1	837.	1.074
331.	1.072	838.	1.068
332.	1.099	839.	1.087
333.	1.095	840.	1.095
334.	1.071	841.	1.083
335.	1.086	842.	1.088
336.	1.095	843.	1.061
337.	1.083	844.	1.081
338.	1.102	845.	1.076
339.	1.079	846.	1.112
340.	1.095	847.	1.071
341.	1.1	848.	1.097
342.	1.083	849.	1.089
343.	1.098	850.	1.107
344.	1.079	851.	1.091
345.	1.09	852.	1.088
346.	1.086	853.	1.085
347.	1.078	854.	1.083
348.	1.062	855.	1.111
349.	1.077	856.	1.077
350.	1.079	857.	1.084
351.	1.1	858.	1.082
352.	1.062	859.	1.077
353.	1.082	860.	1.094
354.	1.086	861.	1.072
355.	1.073	862.	1.073
356.	1.089	863.	1.084
357.	1.086	864.	1.091
358.	1.072	865.	1.076
359.	1.086	866.	1.097
360.	1.071	867.	1.076
361.	1.095	868.	1.094
362.	1.069	869.	1.096
363.	1.094	870.	1.088
364.	1.082	871.	1.099

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
365.	1.111	872.	1.097
366.	1.095	873.	1.08
367.	1.07	874.	1.088
368.	1.092	875.	1.107
369.	1.078	876.	1.073
370.	1.076	877.	1.093
371.	1.079	878.	1.095
372.	1.064	879.	1.085
373.	1.093	880.	1.086
374.	1.083	881.	1.094
375.	1.082	882.	1.089
376.	1.1	883.	1.104
377.	1.091	884.	1.079
378.	1.094	885.	1.076
379.	1.085	886.	1.1
380.	1.094	887.	1.08
381.	1.087	888.	1.071
382.	1.069	889.	1.089
383.	1.073	890.	1.1
384.	1.096	891.	1.104
385.	1.07	892.	1.093
386.	1.073	893.	1.103
387.	1.085	894.	1.096
388.	1.063	895.	1.081
389.	1.075	896.	1.097
390.	1.074	897.	1.095
391.	1.068	898.	1.084
392.	1.071	899.	1.091
393.	1.097	900.	1.076
394.	1.082	901.	1.1
395.	1.073	902.	1.093
396.	1.068	903.	1.102
397.	1.085	904.	1.087
398.	1.067	905.	1.106
399.	1.066	906.	1.105
400.	1.067	907.	1.099
401.	1.09	908.	1.078
402.	1.082	909.	1.08
403.	1.082	910.	1.074
404.	1.071	911.	1.103
405.	1.04	912.	1.101
406.	1.069	913.	1.076
407.	1.071	914.	1.097
408.	1.077	915.	1.085
409.	1.085	916.	1.099
410.	1.09	917.	1.09
411.	1.076	918.	1.086
412.	1.094	919.	1.076
413.	1.106	920.	1.077
414.	1.084	921.	1.1
415.	1.086	922.	1.073
416.	1.094	923.	1.077
417.	1.091	924.	1.103
418.	1.082	925.	1.077
419.	1.086	926.	1.101
420.	1.077	927.	1.087
421.	1.09	928.	1.097
422.	1.086	929.	1.023
423.	1.08	930.	1.078
424.	1.105	931.	1.089
425.	1.079	932.	1.093
426.	1.071	933.	1.107
427.	1.074	934.	1.09
428.	1.073	935.	1.08
429.	1.073	936.	1.1
430.	1.094	937.	1.106
431.	1.097	938.	1.084

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
432.	1.082	939.	1.082
433.	1.084	940.	1.074
434.	1.076	941.	1.085
435.	1.102	942.	1.107
436.	1.105	943.	1.085
437.	1.066	944.	1.081
438.	1.08	945.	1.102
439.	1.096	946.	1.078
440.	1.073	947.	1.078
441.	1.098	948.	1.079
442.	1.088	949.	1.06
443.	1.09	950.	1.111
444.	1.081	951.	1.106
445.	1.074	952.	1.105
446.	1.073	953.	1.079
447.	1.08	954.	1.107
448.	1.073	955.	1.081
449.	1.081	956.	1.084
450.	1.07	957.	1.101
451.	1.094	958.	1.092
452.	1.09	959.	1.111
453.	1.07	960.	1.074
454.	1.113	961.	1.096
455.	1.07	962.	1.086
456.	1.06	963.	1.108
457.	1.096	964.	1.081
458.	1.089	965.	1.087
459.	1.081	966.	1.076
460.	1.1	967.	1.093
461.	1.094	968.	1.097
462.	1.099	969.	1.071
463.	1.071	970.	1.08
464.	1.075	971.	1.101
465.	1.08	972.	1.101
466.	1.09	973.	1.083
467.	1.081	974.	1.092
468.	1.106	975.	1.078
469.	1.084	976.	1.082
470.	1.081	977.	1.075
471.	1.082	978.	1.084
472.	1.097	979.	1.077
473.	1.085	980.	1.075
474.	1.08	981.	1.099
475.	1.088	982.	1.1
476.	1.074	983.	1.1
477.	1.084	984.	1.09
478.	1.079	985.	1.079
479.	1.085	986.	1.084
480.	1.086	987.	1.097
481.	1.106	988.	1.102
482.	1.092	989.	1.105
483.	1.11	990.	1.073
484.	1.067	991.	1.096
485.	1.074	992.	1.071
486.	1.092	993.	1.108
487.	1.066	994.	1.095
488.	1.085	995.	1.072
489.	1.084	996.	1.096
490.	1.096	997.	1.102
491.	1.098	998.	1.105
492.	1.067	999.	1.08
493.	1.068	1000.	1.105
494.	1.093	1001.	1.1
495.	1.096	1002.	1.079
496.	1.093	1003.	1.08
497.	1.07	1004.	1.104
498.	1.09	1005.	1.111

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
499.	1.07	1006.	1.085
500.	1.078	1007.	1.077
501.	1.089	1008.	1.082
502.	1.09	1009.	1.103
503.	1.087	1010.	1.082
504.	1.082	1011.	1.103
505.	1.071	1012.	1.075
506.	1.091	1013.	1.084
507.	1.081		

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 4.167

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.00432	ft/day
y0	1.103	ft

K = 1.524E-6 cm/sec
T = K*b = 0.3326 ft²/day (0.003577 sq. cm/sec)

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
K	0.00432	0.0002335	+/- 0.000458	18.5	ft/day
y0	1.103	0.00124	+/- 0.002433	889.3	ft

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

K = 1.524E-6 cm/sec
T = K*b = 0.3326 ft²/day (0.003577 sq. cm/sec)

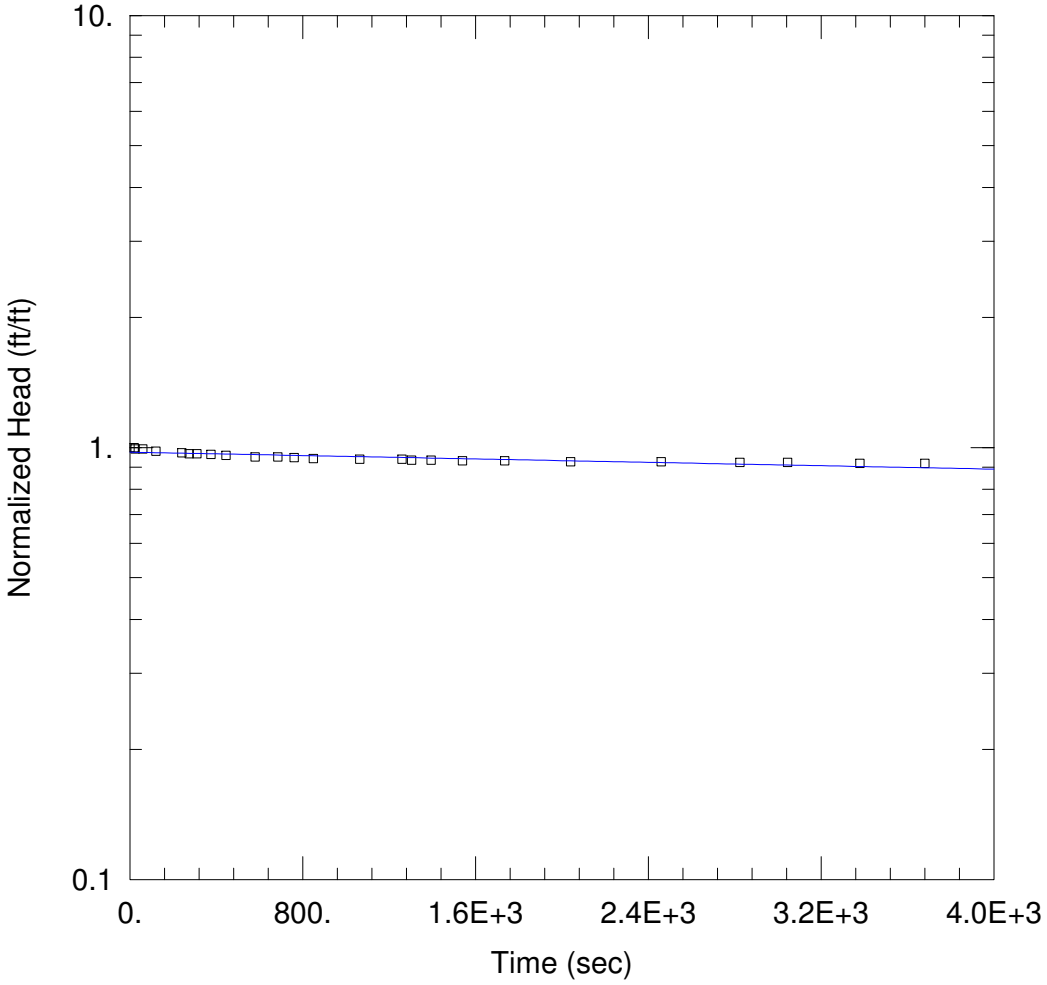
Parameter Correlations

	K	y0
K	1.00	0.86
y0	0.86	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . . 0.3859 ft^2
Variance . . . . . 0.0003817 ft^2
Std. Deviation . . . . . 0.01954 ft
Mean . . . . . 0.001732 ft
No. of Residuals 1013
No. of Estimates 2



144-150 INTERVAL

Data Set: U:\...\144-150_EDH.aqt
Date: 09/09/13 Time: 14:55:58

PROJECT INFORMATION

Company: Kleinfelder
Client: Fairfax Petroleum
Location: Great Falls, Virginia
Test Well: MW-17D
Test Date: 8/1/13

AQUIFER DATA

Saturated Thickness: 77. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-17D 144-150)

Initial Displacement: 2.48 ft
Total Well Penetration Depth: 116.7 ft
Casing Radius: 0.083 ft
Static Water Column Height: 30.59 ft
Screen Length: 6. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.00432 ft/day
y0 = 2.419 ft

Data Set: U:\wpdraft\Captial Petroleum Group\Fairfax Petroleum Realty LLC\26140 Great Falls 2010-3028\Data\201
Title: 144-150 Interval
Date: 09/10/13
Time: 05:20:44

PROJECT INFORMATION

Company: Kleinfelder
Client: Fairfax Petroleum
Location: Great Falls, Virginia
Test Date: 8/1/13
Test Well: MW-17D

AQUIFER DATA

Saturated Thickness: 77. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-17D 144-150

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 2.48 ft
Static Water Column Height: 30.59 ft
Casing Radius: 0.083 ft
Well Radius: 0.25 ft
Well Skin Radius: 0.2501 ft
Screen Length: 6. ft
Total Well Penetration Depth: 116.7 ft
Corrected Casing Radius (Butler Method): 0.08196 ft
Expected Initial Displacement: 2.58 ft

No. of Observations: 25

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
20.	2.48	1065.	2.33
25.	2.46	1260.	2.33
60.	2.46	1305.	2.32
120.	2.43	1395.	2.32
240.	2.41	1540.	2.31
275.	2.4	1735.	2.31
310.	2.4	2040.	2.3
375.	2.39	2460.	2.3
445.	2.38	2825.	2.29
580.	2.36	3045.	2.29
685.	2.36	3380.	2.28
760.	2.35	3680.	2.28
850.	2.34		

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 3.948

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.00432	ft/day
y0	2.42	ft

K = 1.524E-6 cm/sec
T = K*b = 0.3326 ft²/day (0.003577 sq. cm/sec)

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
K	0.00432	0.0004617	+/- 0.0009552	9.357	ft/day
y0	2.42	0.009247	+/- 0.01913	261.7	ft

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

K = 1.524E-6 cm/sec
T = K*b = 0.3326 ft²/day (0.003577 sq. cm/sec)

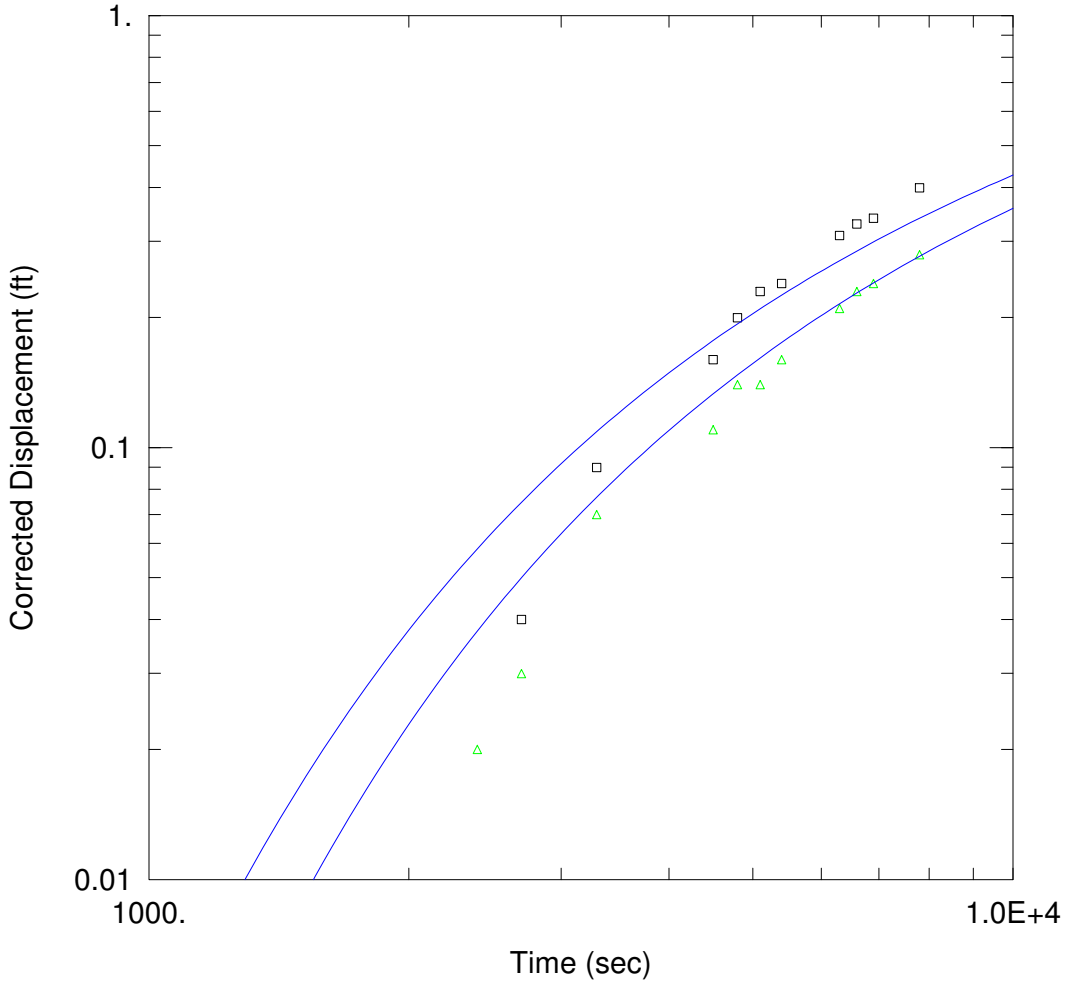
Parameter Correlations

	K	y0
K	1.00	0.74
y0	0.74	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . . 0.02123 ft^2
Variance . . . . . 0.000923 ft^2
Std. Deviation . . . . . 0.03038 ft
Mean . . . . . 0.0007126 ft
No. of Residuals 25
No. of Estimates 2



WELL TEST ANALYSIS

Data Set: U:\...\MW-16D_MW-2_OBS_EDH.aqt
Date: 09/09/13 Time: 15:02:39

PROJECT INFORMATION

Company: Kleinfelder
Client: Fairfax Petroleum
Location: Great Falls, Virginia
Test Well: MW-16D
Test Date: 3/1/12

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW-16 83.5-96	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ MW-9	-15	34
△ MW-2	6	-15

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 190.6 ft^2/day
S = 0.005704
Kz/Kr = 0.4293
b = 77. ft

Data Set: U:\wpdraft\Captial Petroleum Group\Fairfax Petroleum Realty LLC\26140 Great Falls 2010-3028\Data\201
Date: 09/10/13
Time: 05:12:10

PROJECT INFORMATION

Company: Kleinfelder
Client: Fairfax Petroleum
Location: Great Falls, Virginia
Test Date: 3/1/12
Test Well: MW-16D

AQUIFER DATA

Saturated Thickness: 77. ft
Anisotropy Ratio (Kz/Kr): 0.4293

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: MW-16 83.5-96

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.083 ft
Well Radius: 0.25 ft

Partially Penetrating Well
Depth to Top of Screen: 48.93 ft
Depth to Bottom of Screen: 61.43 ft

No. of pumping periods: 1

Pumping Period Data

Time (sec)	Rate (gal/min)
0.	5.

OBSERVATION WELL DATA

No. of observation wells: 2

Observation Well No. 1: MW-9

X Location: -15. ft
Y Location: 34. ft

Radial distance from MW-16 83.5-96: 37.16180835 ft

Partially Penetrating Well
Depth to Top of Screen: 0. ft
Depth to Bottom of Screen: 6.6 ft

No. of Observations: 12

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
2100.	0.	5100.	0.23
2400.	0.01	5400.	0.24
2700.	0.04	6300.	0.31
3300.	0.09	6600.	0.33
4500.	0.16	6900.	0.34
4800.	0.2	7800.	0.4

Observation Well No. 2: MW-2

X Location: 6. ft

Y Location: -15. ft

Radial distance from MW-16 83.5-96: 16.15549442 ft

Partially Penetrating Well
Depth to Top of Screen: 0. ft
Depth to Bottom of Screen: 6.6 ft

No. of Observations: 12

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
2100.	0.01	5100.	0.14
2400.	0.02	5400.	0.16
2700.	0.03	6300.	0.21
3300.	0.07	6600.	0.23
4500.	0.11	6900.	0.24
4800.	0.14	7800.	0.28

SOLUTION

Pumping Test
Aquifer Model: Unconfined
Solution Method: Theis

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	190.6	ft^2/day
S	0.005704	
Kz/Kr	0.4293	
b	77.	ft

K = T/b = 2.475 ft/day (0.0008732 cm/sec)
Ss = S/b = 7.407E-5 1/ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
T	190.6	74.83	+/- 155.2	2.547	ft^2/day
S	0.005704	0.000564	+/- 0.00117	10.11	
Kz/Kr	0.4293	not estimated			
b	77.	not estimated			ft

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
No estimation window

K = T/b = 2.475 ft/day (0.0008732 cm/sec)
Ss = S/b = 7.407E-5 1/ft

Parameter Correlations

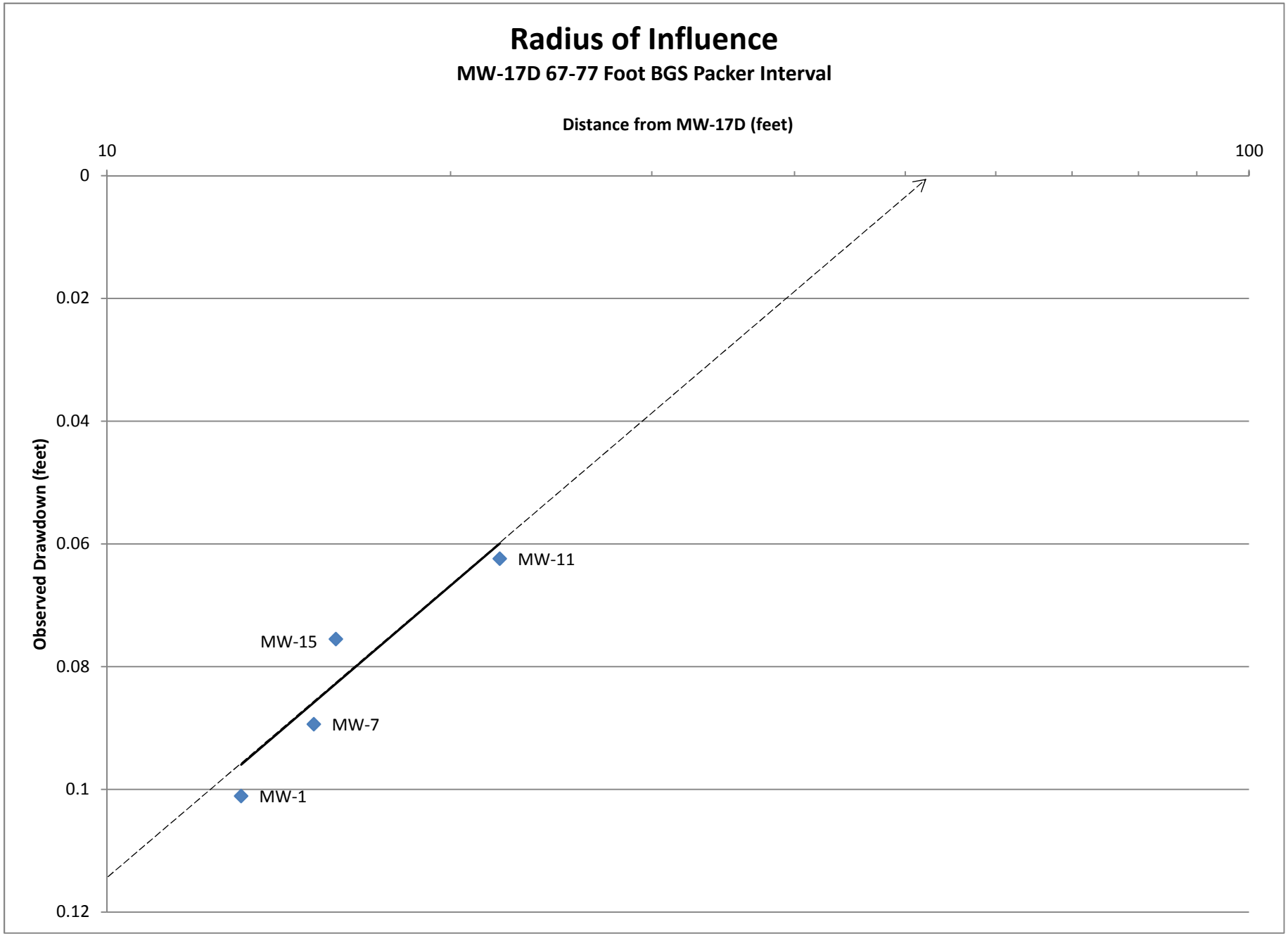
	T	S
T	1.00	0.82
S	0.82	1.00

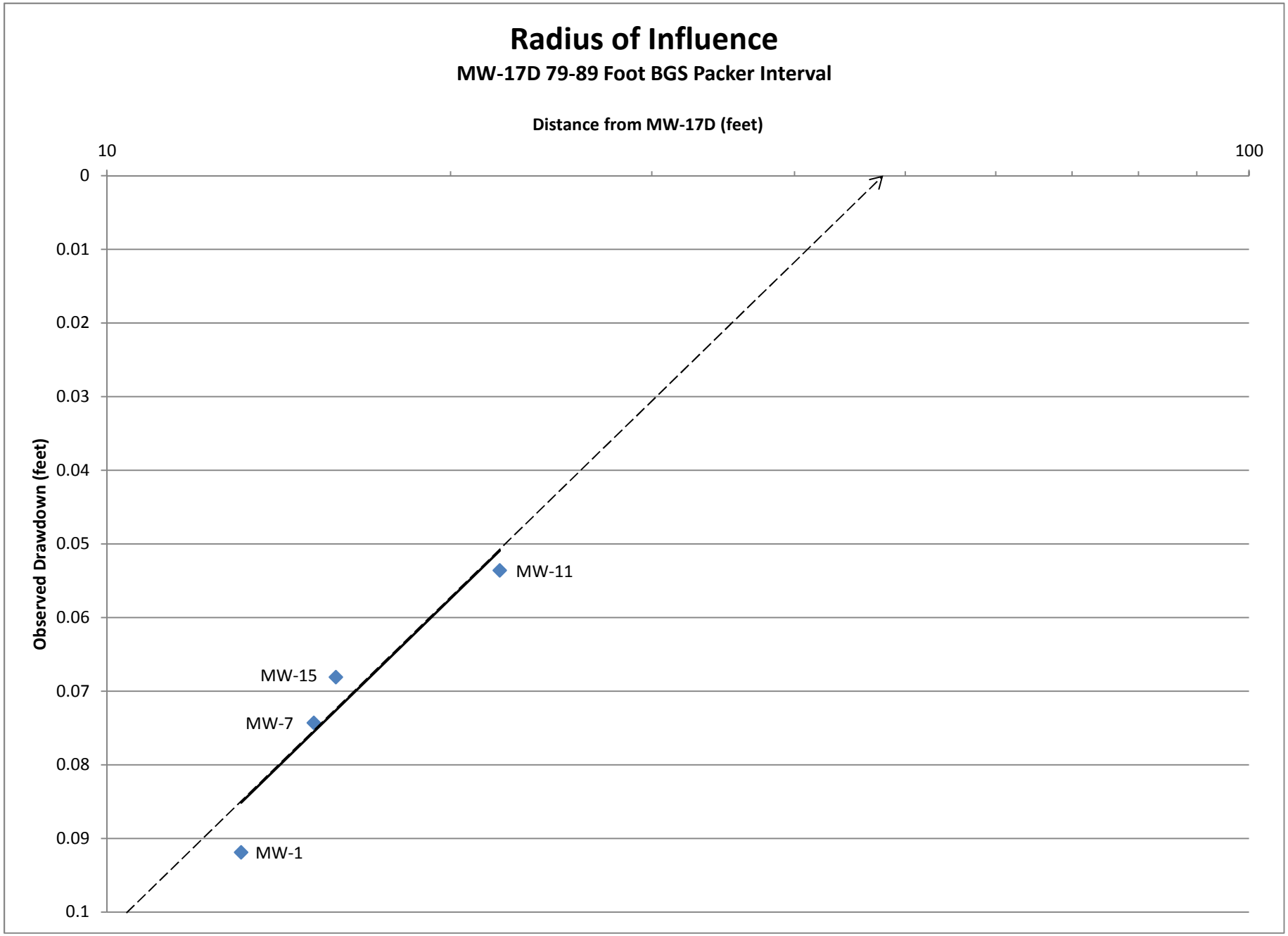
Residual Statistics

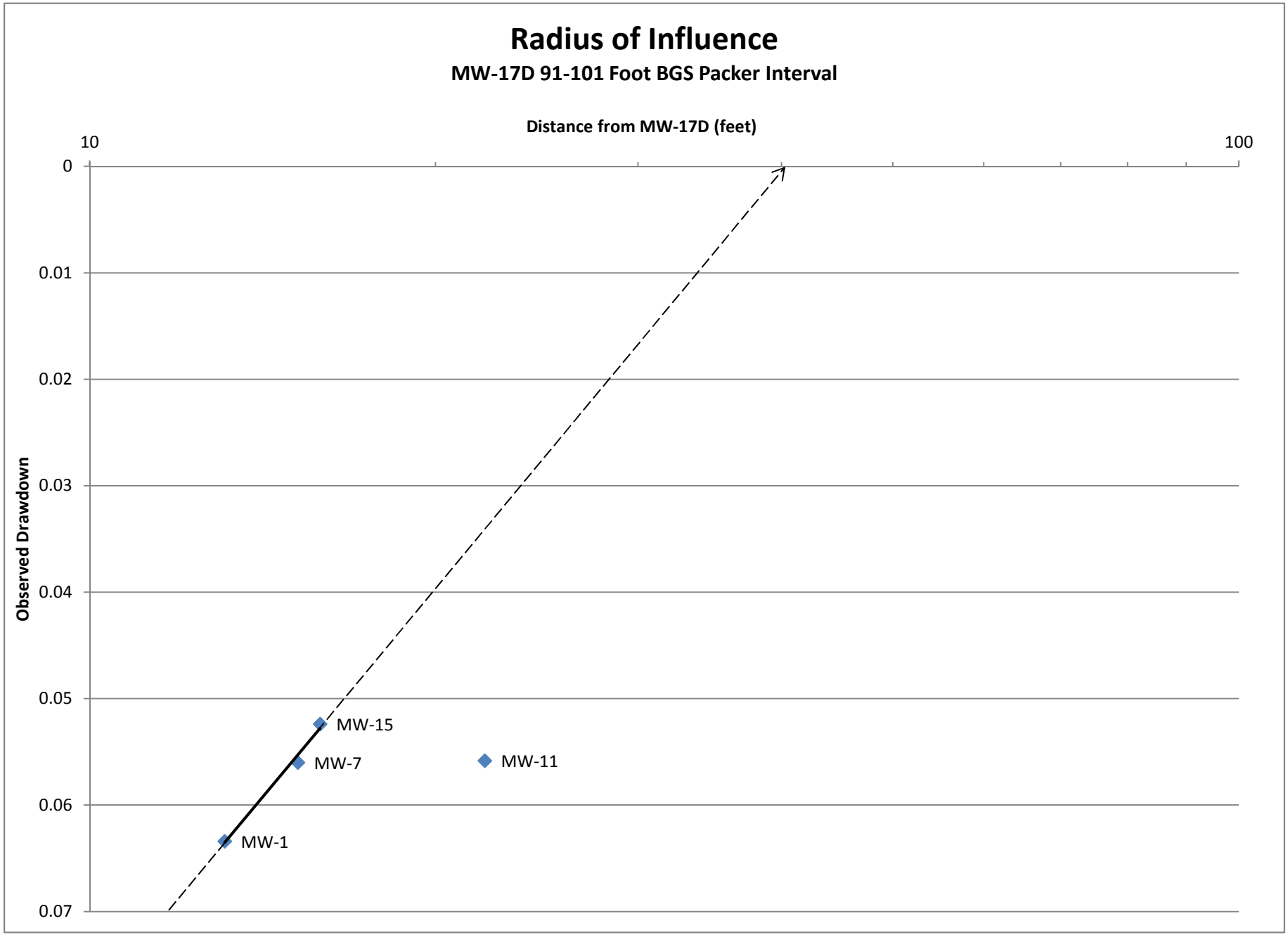
for weighted residuals

Sum of Squares . . . . . 0.09483 ft^2
Variance . . . . . 0.00431 ft^2
Std. Deviation . . . . . 0.06565 ft

Mean . . . . . -0.002881 ft
No. of Residuals 24
No. of Estimates 2


Radius of Influence
MW-17D 67-77 Foot BGS Packer Interval
Distance from MW-17D (feet)
10
100
0
0.02
0.04
0.06
0.08
0.1
0.12
Observed Drawdown (feet)
MW-11
MW-15
MW-7
MW-1


Radius of Influence
MW-17D 79-89 Foot BGS Packer Interval
Distance from MW-17D (feet)
10
100
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.1
Observed Drawdown (feet)
MW-11
MW-15
MW-7
MW-1


Radius of Influence
MW-17D 91-101 Foot BGS Packer Interval
Distance from MW-17D (feet)
10
100
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
Observed Drawdown
MW-15
MW-7
MW-11
MW-1

Appendix I
Feasibility Testing Data and Charts

TABLE 1
Summary of DPE Test Extraction Well Data - MW-15
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia
September 13, 2011

Extraction Well ID:	MW-15
Well Diameter (in):	4
Initial DTP (ft):	ND
Initial DTW (ft):	32.63
Drop Tube Depth (ft):	~44
Pipe Diameter for velocity measurements (in):	4

	Elapsed			@ Recovery System									
Time	**Time (min)**	**Interstitial Vacuum (IH_g)**	**Interstitial Vacuum (IWC)**	**Air Flow Data**							**Water Data**		
				Velocity (ft/min)	**Flow Rate (scfm)**	**Flow Rate (acfm)**	**Temp (°F)**	**VOC (ppm_v)**	**O_2 %**	**LEL %**	**Totalized Reading (gallons)**	**Total (gallons)**	**Flow Rate (GPM)**
11:45	0	---	---	---	---	---	--	---	---	---	1638.00	0.00	---
12:00	15	12.9	175.4	30	2.6	4.8	84	1989	17.7	0	---	---	---
12:15	30	11.3	153.7	110	9.6	16.5	95	164	19.7	0	---	---	---
12:30	45	11.3	153.7	140	12.2	21.1	100	107	18.6	0	---	---	---
12:45	60	11.2	152.3	145	12.7	23.2	136	133	19.6	0	---	---	---
13:00	75	11.0	149.6	167	14.6	26.4	135	90.2	19.5	0	---	---	---
13:15	90	11.1	151.0	163	14.2	25.9	136	97.9	19.5	0	---	---	---
13:30	105	10.7	145.5	176	15.4	27.1	130	230	19.5	0			
13:45	120	10.6	144.2	150	13.1	23.2	136	206	19.4	0	---	---	---
14:00	135	9.9	134.6	125	10.9	18.4	128	434	19.4	0	1671.00	33.00	0.24
14:15	150	9.4	127.8	131	11.4	18.9	131	83.3	19.1	0	---	---	---
14:30	165	9.1	123.8	107	9.3	15.2	130	81.7	19.1	0	---	---	---
15:00	195	10.1	137.4	120	10.5	18.0	131	135	19.2	0	---	---	---
15:30	225	10.1	137.4	122	10.7	18.2	130	134	19.4	0	1684	46.00	0.14
16:00	255	10.3	140.1	120	10.5	17.6	114	144	19.4	0	---	---	---
16:30	285	10.2	138.7	55	4.8	8.0	110	106	19.4	0	---	---	---
17:00	315	10.2	138.7	100	8.7	14.7	116	106	19.2	0	1701	63.00	0.19
17:30	345	10.1	137.4	110	9.6	16.0	113	108	19.3	0	1722	84.00	0.32
17:45	360	10.1	137.4	---	---	---	---	---			1747	109.0	---
		10.5			10.6								

Estimated Total Gallons Recovered: 109.00
Total Flow Rate (GPM): 0.30

Notes

in - inches
ft - Feet
DTP - depth to product
DTW - depth to water
Time - time from beginning of pilot test in minutes (min)
min - minutes
Temp - Temperature
VOC- soil vapor samples measured with a photoionization detecto (PID) calibrated to read total volatile organic compounds (VOCs) as benzene.

0_2 %- percent Oxygen
LEL % - percent Lower Explosive Limit
IHg - inches of mercury
IWC - inches of water column
ft/min - feet per minute
SCFM - standard cubic feet per minute
ACFM - actual cubic feet per minute
ppmv -parts per million per unit volume
GPM - Gallons per minutes
°F - degrees Fahrenheit

TABLE 2

Summary of DPE Test Monitoring Point Data - MW-15

Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia
September 13, 2011

Time	Elapsed Time (min)	Monitoring Point ID: MW-1						Monitoring Point ID: MW-7					
		Distance to Extraction Well (feet): 24						Distance to Extraction Well (feet): 31					
		Monitoring Point Elevation: 328.99						Monitoring Point Elevation: 327.96					
		Vacuum IWC	DTP (ft)	DTW (ft)	LPH Thickness (ft)	Δ DTW (ft)	Total Δ DTW (ft)	Vacuum IWC	DTP (ft)	DTW (ft)	LPH Thickness (ft)	Δ DTW (ft)	Total Δ DTW (ft)
11:45	0	---	ND	32.40	---	0.00	0.00	---	ND	31.67	---	0	0.00
12:00	15	0.00	ND	32.40	--	0.00	0.00	0.00	ND	31.70	---	0.03	0.03
12:30	45	0.00	ND	32.41	---	0.01	0.01	0.00	ND	31.73	---	0.03	0.06
13:00	75	0.00	ND	32.43	---	0.02	0.03	0.00	ND	31.76	---	0.03	0.09
13:30	105	0.00	ND	32.46	---	0.03	0.06	0.00	ND	31.79	---	0.03	0.12
14:00	135	0.00	ND	32.46	---	0.00	0.06	0.00	ND	31.83	---	0.04	0.16
14:20	165	0.00	ND	32.46	---	0.00	0.06	0.00	ND	31.84	---	0.01	0.17
15:00	195	0.00	ND	32.48	---	0.02	0.08	0.00	ND	31.87	---	0.03	0.20
15:30	225	0.00	ND	32.48	---	0.00	0.08	0.00	ND	31.90	---	0.03	0.23
16:00	255	0.00	ND	32.50	---	0.02	0.10	0.00	ND	31.91	---	0.01	0.24
16:30	285	0.00	ND	32.50	---	0.00	0.10	0.00	ND	31.93	---	0.02	0.26
17:00	315	0.00	ND	32.51	---	0.01	0.11	0.00	ND	31.95	---	0.02	0.28
17:45	360	0.00	ND	32.53	---	0.02	0.13	0.00	ND	31.98	---	0.03	0.31

Time	Elapsed Time (min)	Monitoring Point ID: MW-8						Monitoring Point ID: MW-11					
		Distance to Extraction Well (feet): 43						Distance to Extraction Well (feet): 19					
		Monitoring Point Elevation: 330.54						Monitoring Point Elevation: 329.64					
		Vacuum IWC	DTP (ft)	DTW (ft)	LPH Thickness (ft)	Δ DTW (ft)	Total Δ DTW (ft)	Vacuum IWC	DTP (ft)	DTW (ft)	LPH Thickness (ft)	Δ DTW (ft)	Total Δ DTW (ft)
11:45	0	---	ND	34.84	---	0.00	0.00	---	ND	32.61	---	0	0.00
12:00	15	0.00	ND	34.86	---	0.02	0.02	0.00	ND	32.64	---	0.03	0.03
12:30	45	0.00	ND	34.88	---	0.02	0.04	0.00	ND	32.66	---	0.02	0.05
13:00	75	0.00	ND	34.90	---	0.02	0.06	0.00	ND	32.68	---	0.02	0.07
13:30	105	0.00	ND	34.92	---	0.02	0.08	0.00	ND	32.70	---	0.02	0.09
14:00	135	0.00	ND	34.92	---	0.00	0.08	0.00	ND	32.72	---	0.02	0.11
14:20	165	0.00	ND	34.93	---	0.01	0.09	0.00	ND	32.73	---	0.01	0.12
15:00	195	0.00	ND	34.93	---	0.00	0.09	0.00	ND	32.74	---	0.01	0.13
15:30	225	0.00	ND	34.95	---	0.02	0.11	0.00	ND	32.75	---	0.01	0.14
16:00	255	0.00	ND	34.96	---	0.01	0.12	0.00	ND	32.75	---	0.00	0.14
16:30	285	0.00	ND	34.97	---	0.01	0.13	0.00	ND	32.77	---	0.02	0.16
17:00	315	0.00	ND	34.97	---	0.00	0.13	0.00	ND	32.78	---	0.01	0.17
17:45	360	0.00	ND	34.99	---	0.02	0.15	0.00	ND	32.79	---	0.01	0.18

Notes:

Time - time from beginning of pilot test in minutes (min)
min - minutes
DTP - depth to product
DTW - depth to water measured from top of 1" drop tube
LPH - liquid phase hydrocarbon
IWC - inches of water column
ND - none detected

Chart A
Interstitial Vacuum vs Flow Rate (MW-15)
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia
September 13, 2011

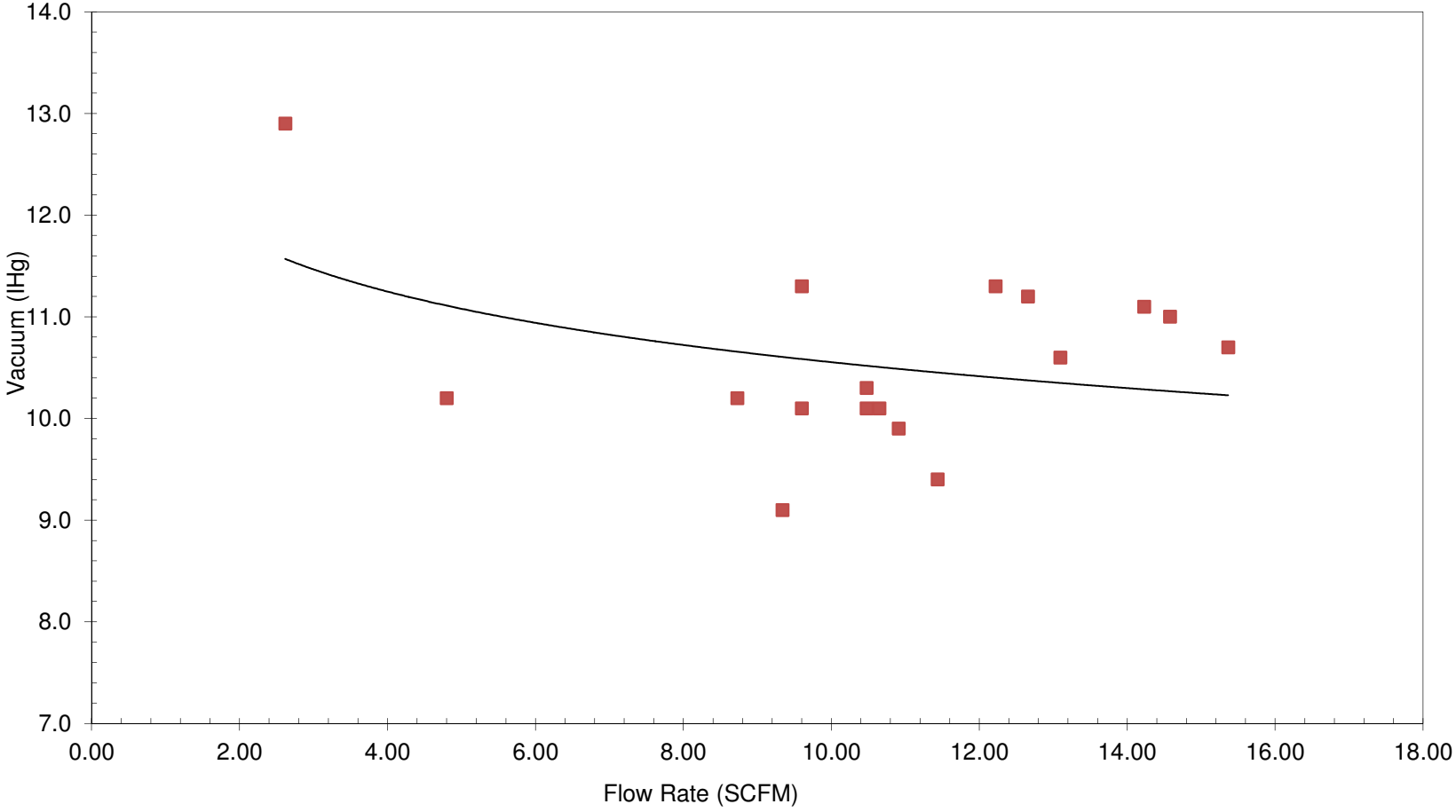


Chart B
Influent Soil Vapor TPH & MTBE Analytical & Field VOC Concentrations vs. Time (MW-15)
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia
September 13, 2011

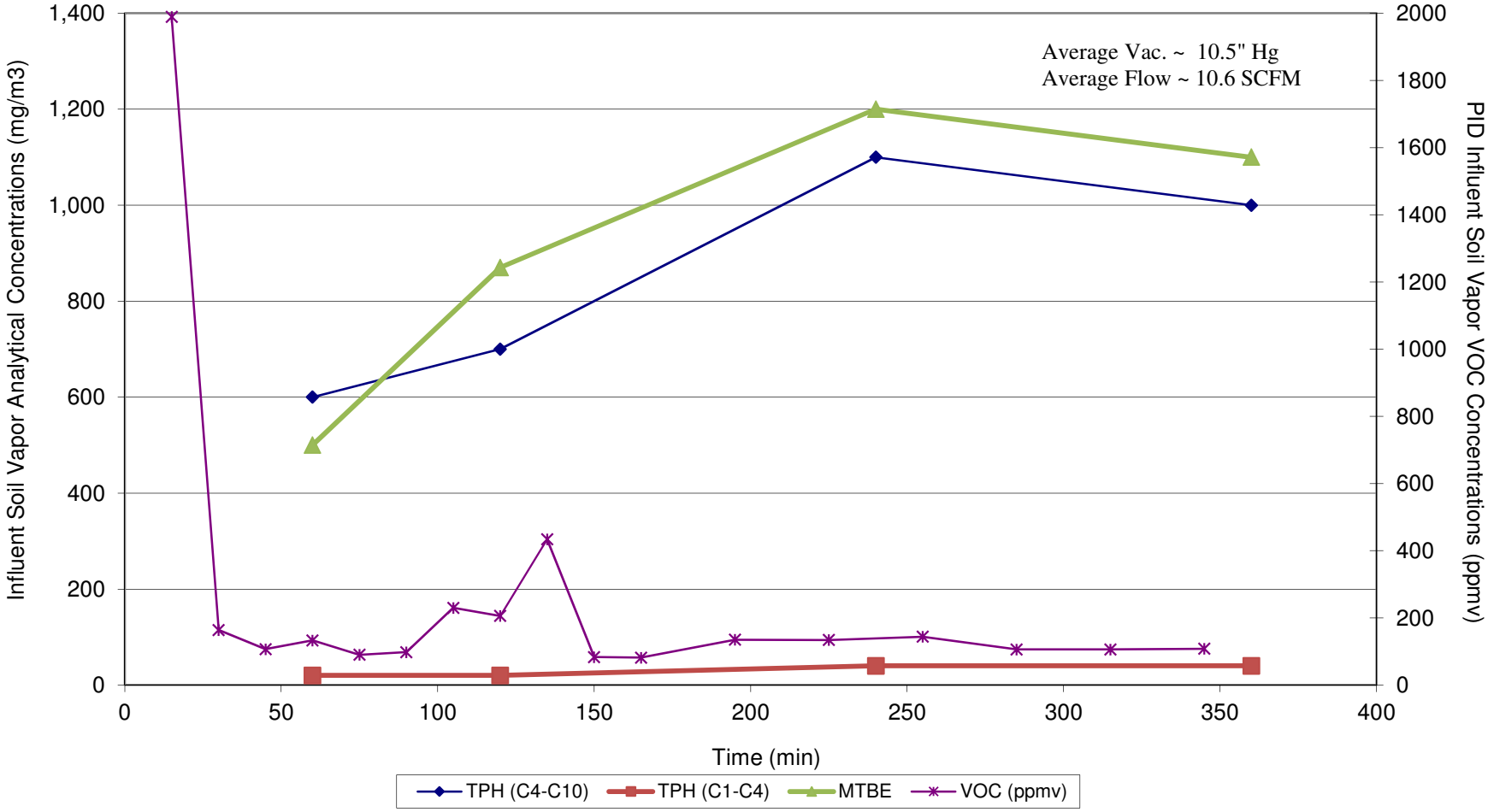


Chart C
Drawdown vs. Distance (MW-15)
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia
September 13, 2011

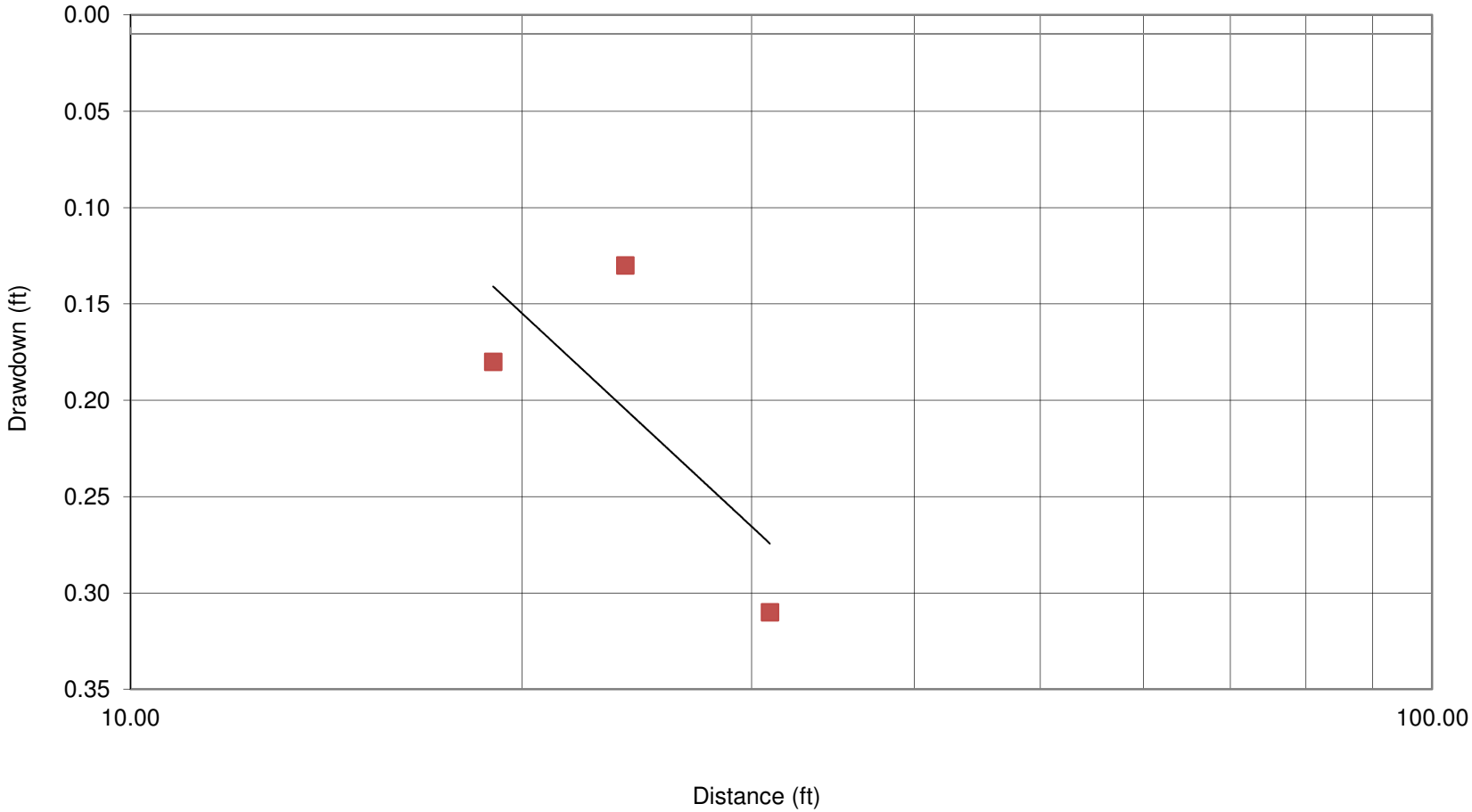


TABLE 3
Summary of DPE Test Extraction Well Data - MW-11
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia
September 14, 2011

Extraction Well ID:	MW-11
Well Diameter (in):	2
Initial DTP (ft):	ND
Initial DTW (ft):	32.66
Drop Tube Depth (ft):	~ 39
Pipe Diameter for velocity measurements (in):	4

	Elapsed			@ Recovery System									
Time	Time (min)	Interstitial Vacuum (IH_g)	Interstitial Vacuum (IWC)	Air Flow Data							Water Data		
				Velocity (ft/min)	Flow Rate (scfm)	Flow Rate (acfm)	Temp (°F)	VOC (ppm_v)	O_2 %	LEL %	Totalized Reading (gallons)	Total (gallons)	Flow Rate (GPM)
10:00	0	4.5	61.2	445	38.8	48.6	93	---	---	---	1759	0	---
10:15	15	4.4	59.8	450	39.3	49.0	94	609	6.4	33	---	---	---
10:30	30	4.3	58.5	480	41.9	52.3	96	168	7.0	40	---	---	---
11:00	60	4.3	58.5	493	43.0	54.1	100	143	6.8	43	---	---	---
11:30	90	4.2	57.1	471	41.1	51.7	102	157	6.6	46	---	---	---
12:00	120	4.2	57.1	499	43.5	55.3	108	159	7.1	23	1770	11	0.09
12:30	150	4.2	57.1	531	46.3	59.4	113	224	6.9	11	---	---	---
13:00	180	4.2	57.1	550	48.0	62.3	120	285	7.6	26	---	---	---
13:30	210	4.1	55.8	522	45.6	59.2	123	287	---	---	---	---	---
14:00	240	4.1	55.8	519	45.3	59.1	126	299	6.2	34	1786	27	0.13
14:30	270	4.1	55.8	499	43.5	55.9	116	266	---	---	---	---	---
15:00	300	4.1	55.8	479	41.8	53.6	115	254	---	---	---	---	---
15:30	330	4.2	57.1	477	41.6	53.4	114	259	10.3	46	---	---	---
16:00	360	4.2	57.1	505	44.1	57.1	119	231	---	---	1799	40	0.11

Estimated Total Gallons Recovered (Phase Separator):	40
Total Flow Rate (GPM):	0.11

Notes

in - inches
ft - Feet
DTP - depth to product
DTW - depth to water
Time - time from beginning of pilot test in minutes (min)
min - minutes
Temp - Temperature
VOC- soil vapor samples measured with a photoionization detecto (PID) calibrated to read total volatile organic compounds (VOCs) as benzene.

0_2 %- percent Oxygen
LEL % - percent Lower Explosive Limit
IHg - inches of mercury
IWC - inches of water column
ft/min - feet per minute
SCFM - standard cubic feet per minute
ACFM - actual cubic feet per minute
ppmv -parts per million per unit volume
GPM - Gallons per minutes
°F - degrees Fahrenheit

TABLE 4
Summary of DPE Test Monitoring Point Data - MW-11
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia
September 14, 2011

Time	Elapsed Time (min)	Monitoring Point ID: MW-1							Monitoring Point ID: MW-7					
		Distance to Extraction Well (feet): 18.50							Distance to Extraction Well (feet): 35.00					
		Monitoring Point Elevation: 328.99							Monitoring Point Elevation: 327.96					
		Vacuum IWC	PID (ppm)	DTP (ft)	DTW (ft)	LPH Thickness (ft)	Δ DTW (ft)	Total Δ DTW (ft)	Vacuum IWC	DTP (ft)	DTW (ft)	LPH Thickness (ft)	Δ DTW (ft)	Total Δ DTW (ft)
10:00	0	---		ND	32.41	---	0.00	0.00	---	ND	31.75	---	0	0.00
10:30	30	7.93		ND	32.47	--	0.06	0.06	0.30	ND	31.78	---	0.03	0.03
11:00	60	7.85		ND	32.50	---	0.03	0.09	0.36	ND	31.80	---	0.02	0.05
11:30	90	7.85		ND	32.50	---	0.00	0.09	0.42	ND	31.82	---	0.02	0.07
12:00	120	7.82		ND	32.50	---	0.00	0.09	0.41	ND	31.83	---	0.01	0.08
12:30	150	7.81		ND	32.50	---	0.00	0.09	0.33	ND	31.85	---	0.02	0.10
13:00	180	7.83		ND	32.53	---	0.03	0.12	0.46	ND	31.85	---	0.00	0.10
13:30	210	7.76		ND	32.51	---	-0.02	0.10	0.43	ND	31.85	---	0.00	0.10
14:00	240	7.84		ND	32.51	---	0.00	0.10	0.37	ND	31.86	---	0.01	0.11
14:30	270	7.89		ND	32.51	---	0.00	0.10	0.42	ND	31.86	---	0.00	0.11
15:00	300	7.82		ND	32.50	---	-0.01	0.09	0.40	ND	31.86	---	0.00	0.11
15:30	330	7.80		ND	32.50	---	0.00	0.09	0.41	ND	31.86	---	0.00	0.11
16:00	360	7.91		ND	32.51	---	0.01	0.10	0.37	ND	31.85	---	-0.01	0.10

Time	Elapsed Time (min)	Monitoring Point ID: MW-8							Monitoring Point ID: MW-15					
		Distance to Extraction Well (feet): 48.66							Distance to Extraction Well (feet): 19.00					
		Monitoring Point Elevation: 330.54							Monitoring Point Elevation: 328.95					
		Vacuum IWC	PID (ppm)	DTP (ft)	DTW (ft)	LPH Thickness (ft)	Δ DTW (ft)	Total Δ DTW (ft)	Vacuum IWC	DTP (ft)	DTW* (ft)	LPH Thickness (ft)	Δ DTW (ft)	Total Δ DTW* (ft)
10:00	0	---		ND	34.88	---	0.00	0.00	---	ND	38.35	---	0	0.00
10:30	30	0.00		ND	34.88	---	0.00	0.00	0.00	ND	36.56	---	-1.79	-1.79
11:00	60	0.00		ND	34.88	---	0.00	0.00	0.00	ND	35.61	---	-0.95	-2.74
11:30	90	0.00		ND	34.88	---	0.00	0.00	0.00	ND	35.07	---	-0.54	-3.28
12:00	120	0.00		ND	34.88	---	0.00	0.00	0.00	ND	34.64	---	-0.43	-3.71
12:30	150	0.00		ND	34.88	---	0.00	0.00	0.00	ND	34.21	---	-0.43	-4.14
13:00	180	0.00		ND	34.88	---	0.00	0.00	0.00	ND	33.88	---	-0.33	-4.47
13:30	210	0.00		ND	34.88	---	0.00	0.00	0.00	ND	33.66	---	-0.22	-4.69
14:00	240	0.00		ND	34.88	---	0.00	0.00	0.00	ND	33.48	---	-0.18	-4.87
14:30	270	0.00		ND	34.88	---	0.00	0.00	0.00	ND	33.37	---	-0.11	-4.98
15:00	300	0.00		ND	34.88	---	0.00	0.00	0.00	ND	33.26	---	-0.11	-5.09
15:30	330	0.00		ND	34.88	---	0.00	0.00	0.00	ND	33.17	---	-0.09	-5.18
16:00	360	0.00		ND	34.88	---	0.00	0.00	0.00	ND	33.13	---	-0.04	-5.22

Notes:

*Change in DTW data for MW-15 (increase in elevation) due to recharge following attempted VEGE test on MW-15 prior to DPE test on MW-11, therefore data not used in drawdown analysis
Time - time from beginning of pilot test in minutes (min)
min - minutes
DTP - depth to product
DTW - depth to water measured from top of 1" drop tube
LPH - liquid phase hydrocarbon
IWC - inches of water column
ND - none detected

Chart D
Interstitial Vacuum vs Flow Rate (MW-11)
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia
September 14, 2011

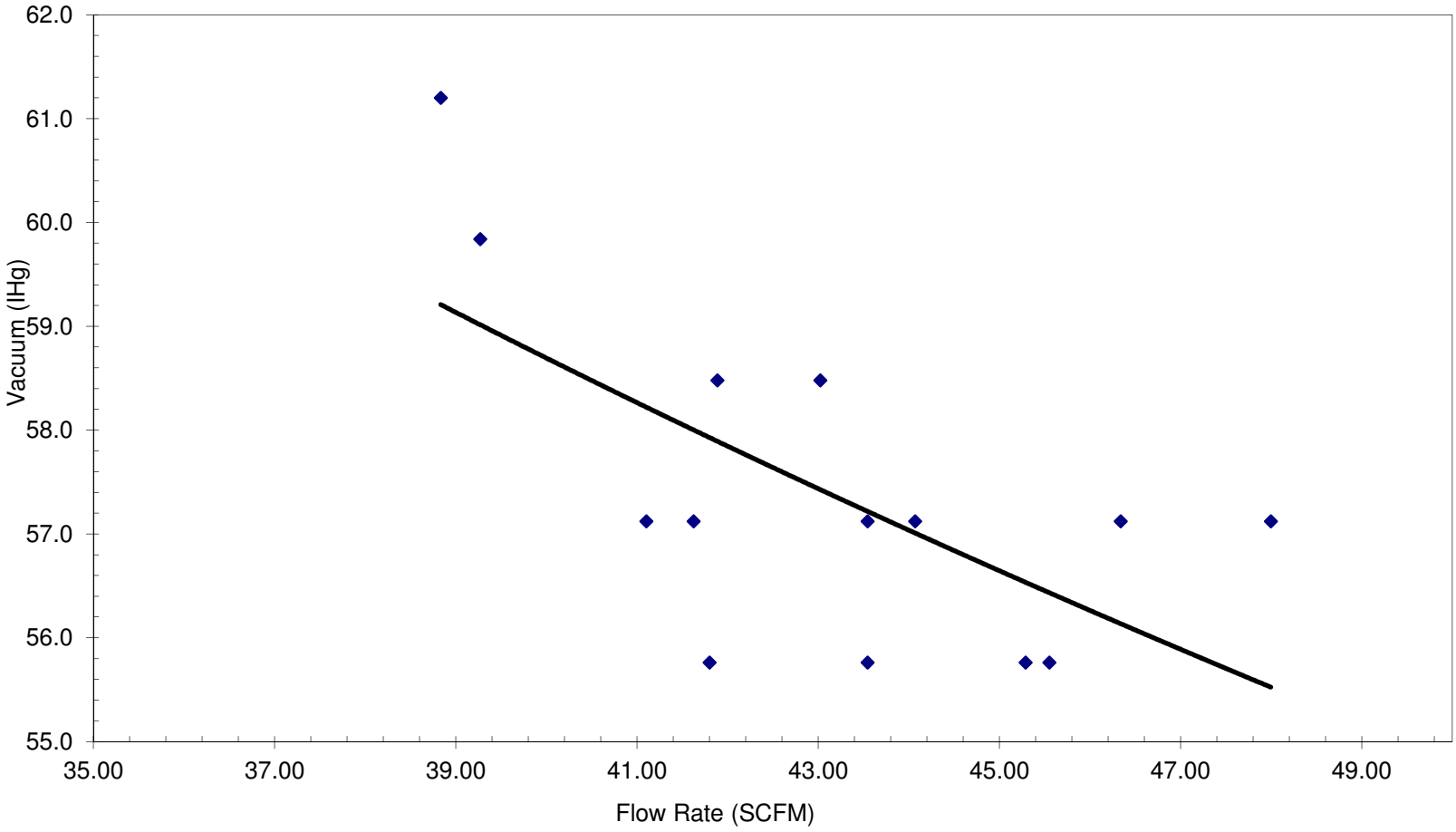


Chart E
Influent Soil Vapor Analytical MTBE & Field VOC Concentrations vs. Time (MW-11)
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia
September 14, 2011

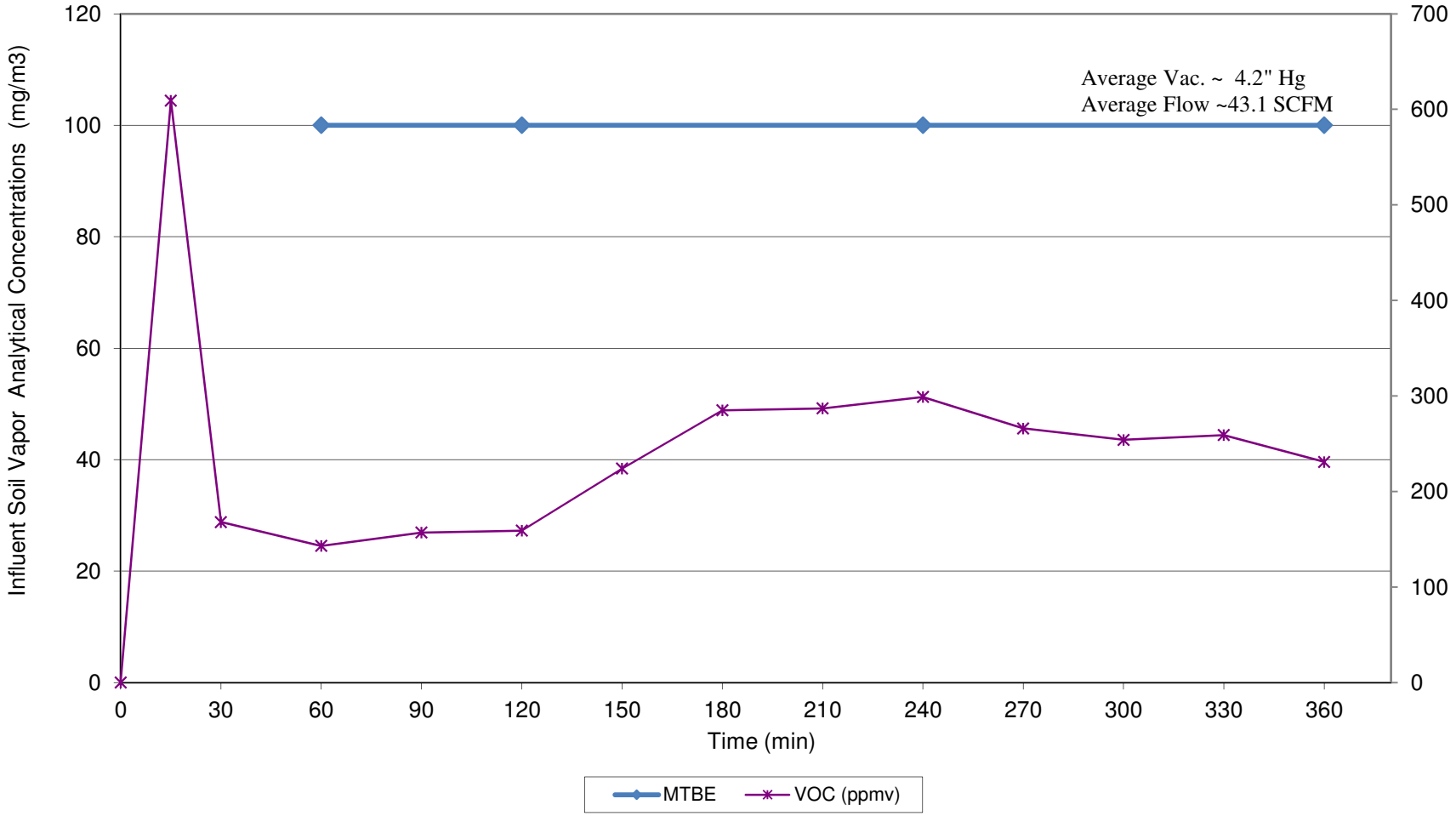


Chart F
Influent Soil Vapor TPH Analytical & Field VOC Concentrations vs. Time (MW-11)
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia
September 14, 2011

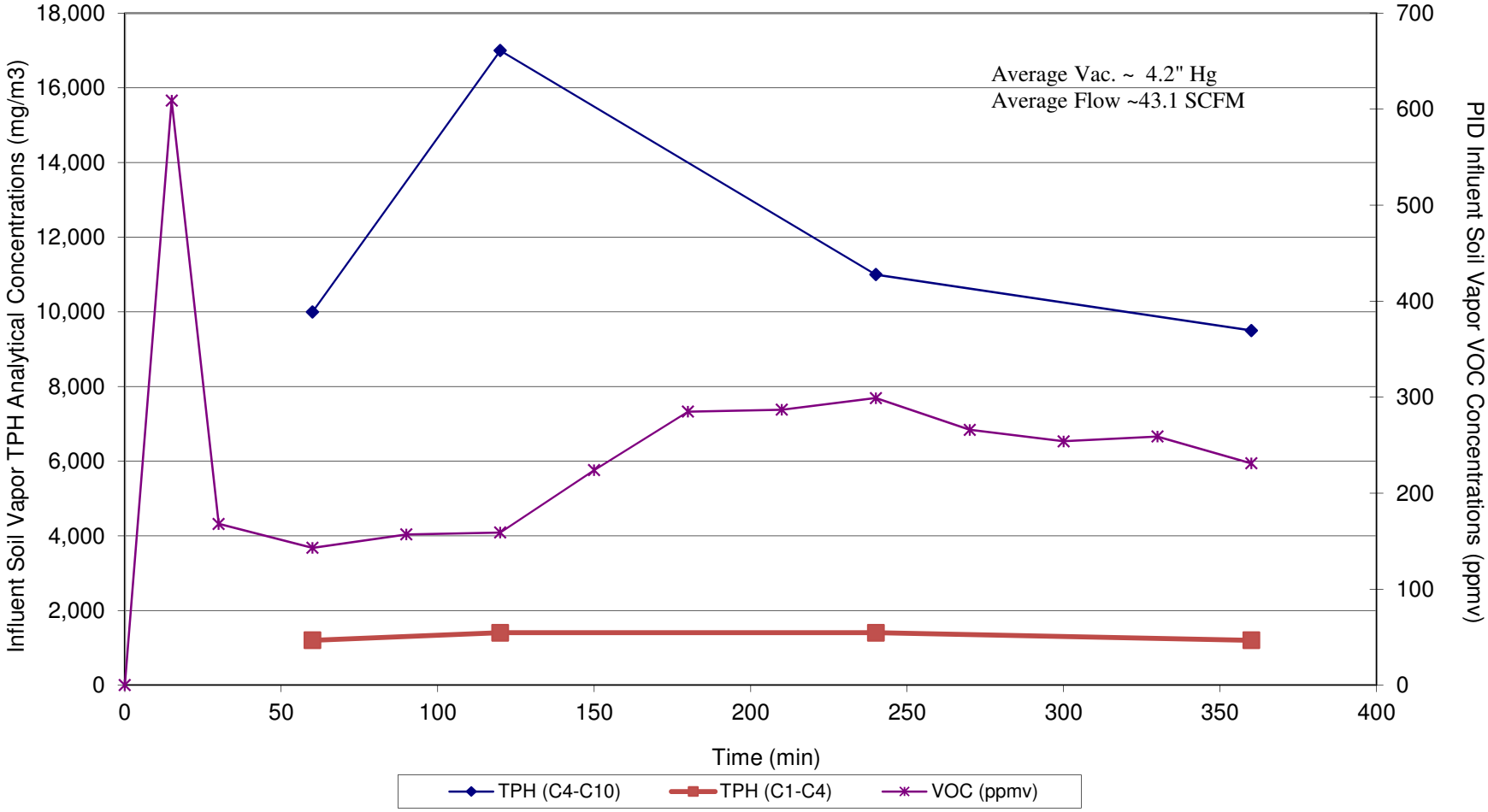


Chart G
Normalized Vacuum vs. Distance from MW-11
Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia
September 14, 2011

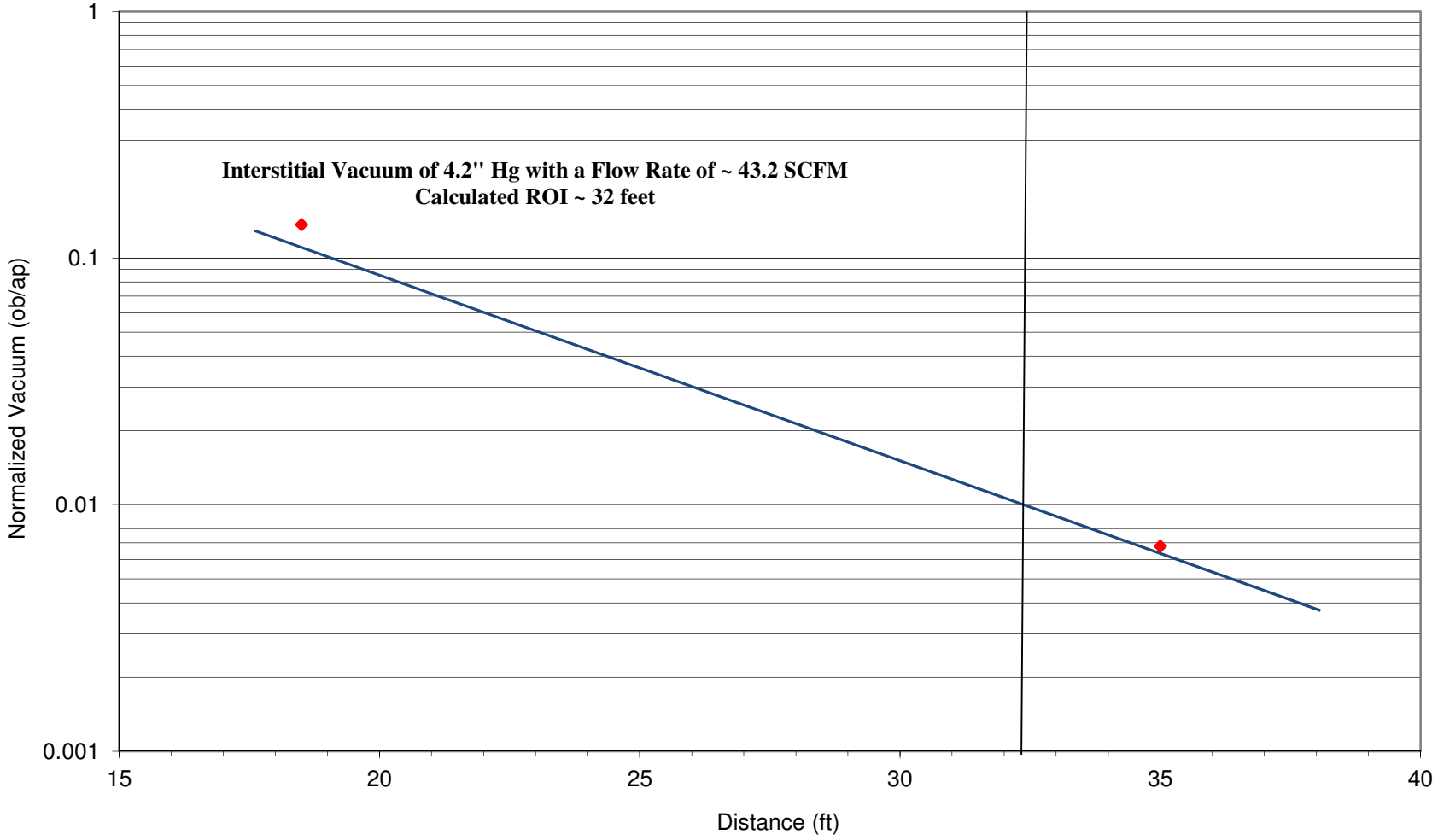


Chart H
Drawdown vs. Distance (MW-11)
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, Virginia
September 14, 2011

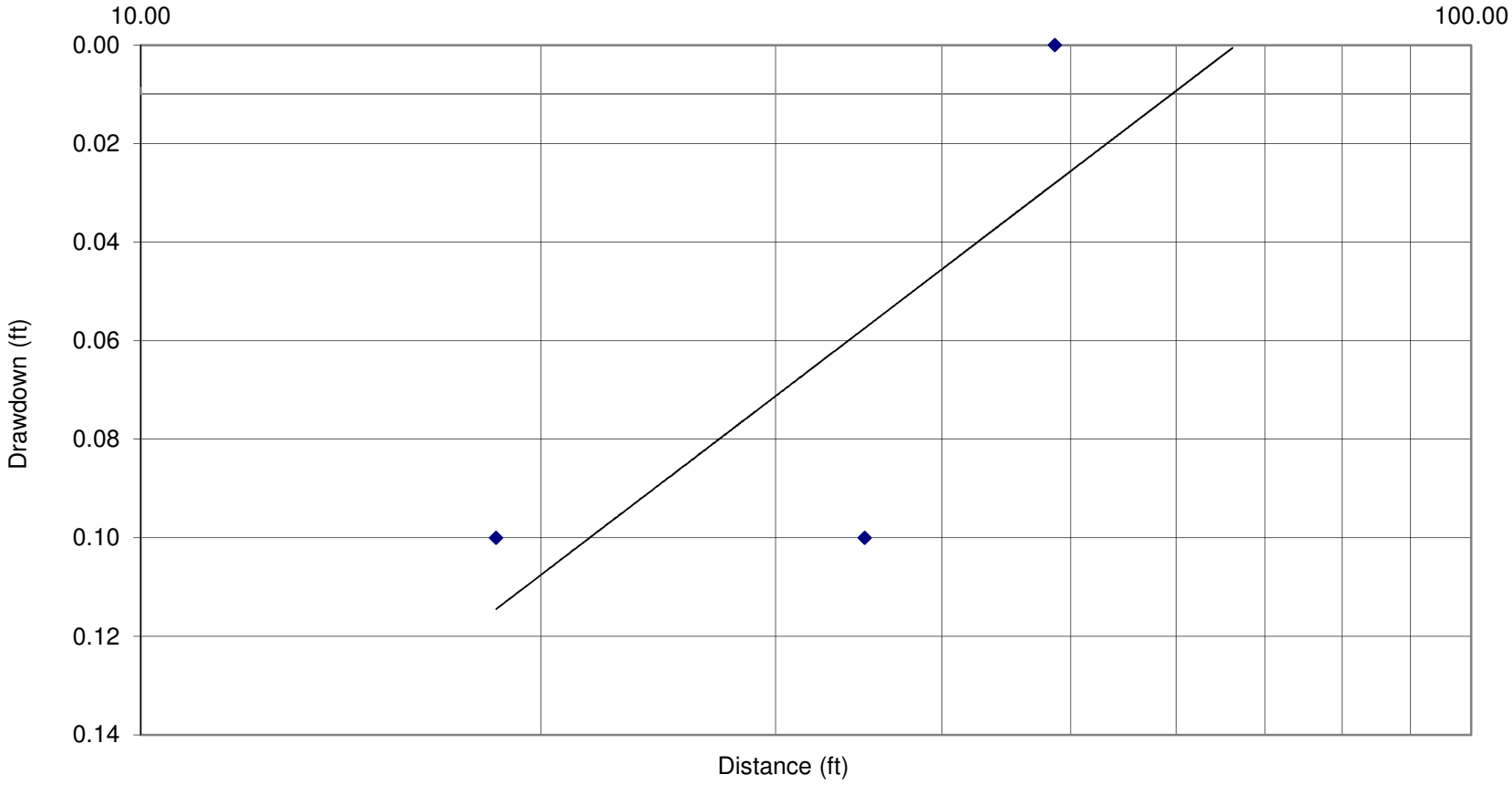


Table 5
DPE Testing - Air Analytical Data Summary
Inactive Fairfax Facilty #26140
9901 Georgetown Pike
Great Falls, Virginia

					Concentration (mg/m3)							Recovery (lbs/hr)*					Recovery (lbs/day)*				
Sample ID	Date	Time	Elapsed Time	Flow (SCFM)	**Benzene**	**Toluene**	**Ethylbenzene**	**Xylenes (total)**	**MTBE**	**TPH (C1-C4)**	**TPH (C4-C10)**	**Benzene**	**Toluene**	**MTBE**	**TPH (C1-C4)**	**TPH (C4-C10)**	**Benzene**	**Toluene**	**MTBE**	**TPH (C1-C4)**	**TPH (C4-C10)**
Extraction Well: MW-15																					
DPE Effluent 1.0 hour	9/13/2011	12:45	60	12.7	<3	<4	<4	<9	500	20	600	NA	NA	0.02	0.00	0.03	NA	NA	0.57	0.02	0.69
DPE Effluent 2.0 hour	9/13/2011	13:45	120	13.1	<3	<4	<4	<9	870	20	700	NA	NA	0.04	0.00	0.03	NA	NA	1.02	0.02	0.82
DPE Effluent 4.0 hour	9/13/2011	15:45	240	10.6	<3	4	<4	<9	1,200	40	1,100	NA	0.000	0.05	0.00	0.04	NA	0.00	1.14	0.04	1.05
DPE Effluent 6.0 hour	9/13/2011	17:45	360	9.6	6	4	<4	<9	1,100	40	1,000	0.000	0.000	0.04	0.00	0.04	0.01	0.00	0.95	0.03	0.86
Extraction Well: MW-11																					
DPE-2 Effluent 1.0 hour	9/14/2011	11:00	60	43	<3	<4	<4	<9	100	1,200	10,000	NA	NA	0.02	0.19	1.61	NA	NA	0.39	4.64	38.66
DPE-2 Effluent 2.0 hour	9/14/2011	12:00	120	43.6	<3	<4	<4	<9	100	1,400	17,000	NA	NA	0.02	0.23	2.78	NA	NA	0.39	5.49	66.64
DPE-2 Effluent 4.0 hour	9/14/2011	14:00	240	45.3	<3	4	<4	<9	100	1,400	11,000	NA	0.00	0.02	0.24	1.87	NA	0.02	0.41	5.70	44.80
DPE-2 Effluent 6.0 hour	9/14/2011	16:00	360	44.1	6	4	<4	<9	100	1,200	9,500	0.00	0.00	0.02	0.20	1.57	0.02	0.02	0.40	4.76	37.67

Notes:

ppm_v - part per million per unit volume
mg/m^3 - milligrams per cubic meter
ND - not detected
lbs/hr - pounds per hour
lbs/day - pounds per day
TPH - Total Petroleum Hydrocarbons
SCFM - standard cubic feet per minute
MTBE - methyl tert butyl ether
*Recovery rates for ethylbenzene and total xylenes was not calculated since these constituents were not detected above reporting limits in the samples.

Appendix J
Laboratory Analytical Report – Air

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Kleinfelder
30 Porter Road
Littleton MA 01460

September 27, 2011

Project: Fairfax 26140

Submittal Date: 09/17/2011
Group Number: 1266991
PO Number: 51141-165510
State of Sample Origin: VA

Client Sample Description	Lancaster Labs (LLI) #
DPE Effluent 1-hour Grab Air	6409698
DPE Effluent 2-hour Grab Air	6409699
DPE Effluent 4-hour Grab Air	6409700
DPE Effluent 6-hour Grab Air	6409701
DPE-2 Effluent 1-hour Grab Air	6409702
DPE-2 Effluent 2-hour Grab Air	6409703
DPE-2 Effluent 4-hour Grab Air	6409704
DPE-2 Effluent 6-hour Grab Air	6409705

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Kleinfelder	Attn: Mark Steele
ELECTRONIC COPY TO	Kleinfelder	Attn: Angela Vogt
ELECTRONIC COPY TO	Kleinfelder	Attn: Brian Barone

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Questions? Contact your Client Services Representative
Natalie R Luciano at (717) 656-2300 Ext. 1881

Respectfully Submitted,

Chad A. Moline
Group Leader

Analysis Report

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Sample Description: DPE Effluent 1-hour Grab Air
Fairfax Petroleum 26140

LLI Sample # AQ 6409698
LLI Group # 1266991
Account # 12152

Project Name: Fairfax 26140

Collected: 09/13/2011 12:45 by RR

Submitted: 09/17/2011 09:15
Reported: 09/27/2011 17:09

Kleinfelder
30 Porter Road
Littleton MA 01460

CAT No.	Analysis Name	CAS Number	As Received Final Result	LOQ	As Received Final Result	LOQ	DF
Volatiles in Air	**EPA 18 mod/EPA 25 mod**		**mg/m3**	**mg/m3**	**ppm(v)**	**ppm(v)**	
07090	Benzene	71-43-2	< 3	3	< 1	1	1
07090	**C1-C4 Hydrocarbons as propane**	n.a.	**20**	20	**10**	10	1
07090	**>C4-C10 Hydrocarbons hexane**	n.a.	**600**	40	**170**	10	1
07090	Ethylbenzene	100-41-4	< 4	4	< 1	1	1
07090	**MTBE**	1634-04-4	**500**	40	**140**	10	10
07090	Toluene	108-88-3	< 4	4	< 1	1	1
07090	Xylene (total)	1330-20-7	< 9	9	< 2	2	1

LOQ = Limit of Quantitation

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07090	BTEX/MTBE/C1-C4/>C4-C10	EPA 18 mod/EPA 25 mod	1	M112631ZA	09/19/2011 19:18	Jeffrey B Smith	1
07090	BTEX/MTBE/C1-C4/>C4-C10	EPA 18 mod/EPA 25 mod	1	M112641ZA	09/20/2011 14:52	Jeffrey B Smith	10

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Analysis Report

Sample Description: DPE Effluent 2-hour Grab Air
Fairfax Petroleum 26140

LLI Sample # AQ 6409699
LLI Group # 1266991
Account # 12152

Project Name: Fairfax 26140

Collected: 09/13/2011 13:45 by RR

Submitted: 09/17/2011 09:15
Reported: 09/27/2011 17:09

Kleinfelder
30 Porter Road
Littleton MA 01460

CAT No.	Analysis Name	CAS Number	As Received Final Result	LOQ	As Received Final Result	LOQ	DF
Volatiles in Air	**EPA 18 mod/EPA 25 mod**		**mg/m3**	**mg/m3**	**ppm(v)**	**ppm(v)**	
07090	Benzene	71-43-2	< 3	3	< 1	1	1
07090	**C1-C4 Hydrocarbons as propane**	n.a.	**20**	20	**10**	10	1
07090	**>C4-C10 Hydrocarbons hexane**	n.a.	**700**	40	**200**	10	1
07090	Ethylbenzene	100-41-4	< 4	4	< 1	1	1
07090	**MTBE**	1634-04-4	**870**	40	**240**	10	10
07090	Toluene	108-88-3	< 4	4	< 1	1	1
07090	Xylene (total)	1330-20-7	< 9	9	< 2	2	1

LOQ = Limit of Quantitation

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07090	BTEX/MTBE/C1-C4/>C4-C10	EPA 18 mod/EPA 25 mod	1	M112631ZA	09/19/2011 19:47	Jeffrey B Smith	1
07090	BTEX/MTBE/C1-C4/>C4-C10	EPA 18 mod/EPA 25 mod	1	M112641ZA	09/20/2011 15:21	Jeffrey B Smith	10

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Analysis Report

Sample Description: DPE Effluent 4-hour Grab Air
Fairfax Petroleum 26140

LLI Sample # AQ 6409700
LLI Group # 1266991
Account # 12152

Project Name: Fairfax 26140

Collected: 09/13/2011 15:45 by RR

Submitted: 09/17/2011 09:15
Reported: 09/27/2011 17:09

Kleinfelder
30 Porter Road
Littleton MA 01460

CAT No.	Analysis Name	CAS Number	As Received Final Result	LOQ	As Received Final Result	LOQ	DF
Volatiles in Air	**EPA 18 mod/EPA 25 mod**		**mg/m3**	**mg/m3**	**ppm(v)**	**ppm(v)**	
07090	Benzene	71-43-2	< 3	3	< 1	1	1
07090	**C1-C4 Hydrocarbons as propane**	n.a.	**40**	20	**20**	10	1
07090	**>C4-C10 Hydrocarbons hexane**	n.a.	**1,100**	40	**300**	10	1
07090	Ethylbenzene	100-41-4	< 4	4	< 1	1	1
07090	**MTBE**	1634-04-4	**1,200**	40	**330**	10	10
07090	Toluene	108-88-3	< 4	4	< 1	1	1
07090	Xylene (total)	1330-20-7	< 9	9	< 2	2	1

LOQ = Limit of Quantitation

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07090	BTEX/MTBE/C1-C4/>C4-C10	EPA 18 mod/EPA 25 mod	1	M112631ZA	09/19/2011 20:17	Jeffrey B Smith	1
07090	BTEX/MTBE/C1-C4/>C4-C10	EPA 18 mod/EPA 25 mod	1	M112641ZA	09/20/2011 15:51	Jeffrey B Smith	10

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Analysis Report

Sample Description: DPE Effluent 6-hour Grab Air
Fairfax Petroleum 26140

LLI Sample # AQ 6409701
LLI Group # 1266991
Account # 12152

Project Name: Fairfax 26140

Collected: 09/13/2011 17:45 by RR

Submitted: 09/17/2011 09:15
Reported: 09/27/2011 17:09

Kleinfelder
30 Porter Road
Littleton MA 01460

CAT No.	Analysis Name	CAS Number	As Received Final Result	LOQ	As Received Final Result	LOQ	DF
Volatiles in Air	**EPA 18 mod/EPA 25 mod**		**mg/m3**	**mg/m3**	**ppm(v)**	**ppm(v)**	
07090	Benzene	71-43-2	< 3	3	< 1	1	1
07090	**C1-C4 Hydrocarbons as propane**	n.a.	**40**	20	**20**	10	1
07090	**>C4-C10 Hydrocarbons hexane**	n.a.	**1,000**	40	**290**	10	1
07090	Ethylbenzene	100-41-4	< 4	4	< 1	1	1
07090	**MTBE**	1634-04-4	**1,100**	40	**300**	10	10
07090	Toluene	108-88-3	< 4	4	< 1	1	1
07090	Xylene (total)	1330-20-7	< 9	9	< 2	2	1

LOQ = Limit of Quantitation

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07090	BTEX/MTBE/C1-C4/>C4-C10	EPA 18 mod/EPA 25 mod	1	M112631ZA	09/19/2011 20:46	Jeffrey B Smith	1
07090	BTEX/MTBE/C1-C4/>C4-C10	EPA 18 mod/EPA 25 mod	1	M112641ZA	09/20/2011 16:20	Jeffrey B Smith	10

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Analysis Report

Sample Description: DPE-2 Effluent 1-hour Grab Air
Fairfax Petroleum 26140

LLI Sample # AQ 6409702
LLI Group # 1266991
Account # 12152

Project Name: Fairfax 26140

Collected: 09/14/2011 11:00 by RR

Submitted: 09/17/2011 09:15
Reported: 09/27/2011 17:09

Kleinfelder
30 Porter Road
Littleton MA 01460

CAT No.	Analysis Name	CAS Number	As Received Final Result	LOQ	As Received Final Result	LOQ	DF
Volatiles in Air	**EPA 18 mod/EPA 25 mod**		**mg/m3**	**mg/m3**	**ppm(v)**	**ppm(v)**	
07090	Benzene	71-43-2	< 3	3	< 1	1	1
07090	**C1-C4 Hydrocarbons as propane**	n.a.	**1,200**	20	**670**	10	1
07090	**>C4-C10 Hydrocarbons hexane**	n.a.	**10,000**	350	**2,900**	100	10
07090	Ethylbenzene	100-41-4	< 4	4	< 1	1	1
07090	**MTBE**	1634-04-4	**100**	4	**30**	1	1
07090	Toluene	108-88-3	< 4	4	< 1	1	1
07090	Xylene (total)	1330-20-7	< 9	9	< 2	2	1

LOQ = Limit of Quantitation

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07090	BTEX/MTBE/C1-C4/>C4-C10	EPA 18 mod/EPA 25 mod	1	M112631ZA	09/19/2011 21:15	Jeffrey B Smith	1
07090	BTEX/MTBE/C1-C4/>C4-C10	EPA 18 mod/EPA 25 mod	1	M112641ZA	09/20/2011 16:49	Jeffrey B Smith	10

Analysis Report

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Sample Description: DPE-2 Effluent 2-hour Grab Air
Fairfax Petroleum 26140

LLI Sample # AQ 6409703
LLI Group # 1266991
Account # 12152

Project Name: Fairfax 26140

Collected: 09/14/2011 12:00 by RR

Submitted: 09/17/2011 09:15
Reported: 09/27/2011 17:09

Kleinfelder
30 Porter Road
Littleton MA 01460

CAT No.	Analysis Name	CAS Number	As Received Final Result	LOQ	As Received Final Result	LOQ	DF
Volatiles in Air	**EPA 18 mod/EPA 25 mod**		**mg/m3**	**mg/m3**	**ppm(v)**	**ppm(v)**	
07090	Benzene	71-43-2	< 3	3	< 1	1	1
07090	**C1-C4 Hydrocarbons as propane**	n.a.	**1,400**	20	**800**	10	1
07090	**>C4-C10 Hydrocarbons hexane**	n.a.	**17,000**	350	**4,800**	100	10
07090	Ethylbenzene	100-41-4	< 4	4	< 1	1	1
07090	**MTBE**	1634-04-4	**100**	4	**30**	1	1
07090	Toluene	108-88-3	< 4	4	< 1	1	1
07090	Xylene (total)	1330-20-7	< 9	9	< 2	2	1

LOQ = Limit of Quantitation

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07090	BTEX/MTBE/C1-C4/>C4-C10	EPA 18 mod/EPA 25 mod	1	M112631ZA	09/19/2011 21:44	Jeffrey B Smith	1
07090	BTEX/MTBE/C1-C4/>C4-C10	EPA 18 mod/EPA 25 mod	1	M112641ZA	09/20/2011 17:18	Jeffrey B Smith	10

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Analysis Report

Sample Description: DPE-2 Effluent 4-hour Grab Air
Fairfax Petroleum 26140

LLI Sample # AQ 6409704
LLI Group # 1266991
Account # 12152

Project Name: Fairfax 26140

Collected: 09/14/2011 14:00 by RR

Submitted: 09/17/2011 09:15
Reported: 09/27/2011 17:09

Kleinfelder
30 Porter Road
Littleton MA 01460

CAT No.	Analysis Name	CAS Number	As Received Final Result	LOQ	As Received Final Result	LOQ	DF
Volatiles in Air	**EPA 18 mod/EPA 25 mod**		**mg/m3**	**mg/m3**	**ppm(v)**	**ppm(v)**	
07090	Benzene	71-43-2	< 3	3	< 1	1	1
07090	**C1-C4 Hydrocarbons as propane**	n.a.	**1,400**	20	**750**	10	1
07090	**>C4-C10 Hydrocarbons hexane**	n.a.	**11,000**	350	**3,000**	100	10
07090	Ethylbenzene	100-41-4	< 4	4	< 1	1	1
07090	**MTBE**	1634-04-4	**100**	4	**30**	1	1
07090	**Toluene**	108-88-3	**4**	4	**1**	1	1
07090	Xylene (total)	1330-20-7	< 9	9	< 2	2	1

LOQ = Limit of Quantitation

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07090	BTEX/MTBE/C1-C4/>C4-C10	EPA 18 mod/EPA 25 mod	1	M112631ZA	09/19/2011 22:13	Jeffrey B Smith	1
07090	BTEX/MTBE/C1-C4/>C4-C10	EPA 18 mod/EPA 25 mod	1	M112641ZA	09/20/2011 17:47	Jeffrey B Smith	10

Analysis Report

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Sample Description: DPE-2 Effluent 6-hour Grab Air
Fairfax Petroleum 26140

LLI Sample # AQ 6409705
LLI Group # 1266991
Account # 12152

Project Name: Fairfax 26140

Collected: 09/14/2011 16:00 by RR

Submitted: 09/17/2011 09:15
Reported: 09/27/2011 17:09

Kleinfelder
30 Porter Road
Littleton MA 01460

CAT No.	Analysis Name	CAS Number	As Received Final Result	LOQ	As Received Final Result	LOQ	DF
Volatiles in Air	**EPA 18 mod/EPA 25 mod**		**mg/m3**	**mg/m3**	**ppm(v)**	**ppm(v)**	
07090	**Benzene**	71-43-2	**6**	3	**2**	1	1
07090	**C1-C4 Hydrocarbons as propane**	n.a.	**1,200**	20	**680**	10	1
07090	**>C4-C10 Hydrocarbons hexane**	n.a.	**9,500**	350	**2,700**	100	10
07090	Ethylbenzene	100-41-4	< 4	4	< 1	1	1
07090	**MTBE**	1634-04-4	**100**	4	**30**	1	1
07090	**Toluene**	108-88-3	**4**	4	**1**	1	1
07090	Xylene (total)	1330-20-7	< 9	9	< 2	2	1

LOQ = Limit of Quantitation

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07090	BTEX/MTBE/C1-C4/>C4-C10	EPA 18 mod/EPA 25 mod	1	M112641ZA	09/20/2011 19:58	Jeffrey B Smith	1
07090	BTEX/MTBE/C1-C4/>C4-C10	EPA 18 mod/EPA 25 mod	1	M112661ZA	09/22/2011 20:30	Jeffrey B Smith	10

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Analysis Report

Quality Control Summary

Client Name: Kleinfelder Group Number: 1266991
Reported: 09/27/11 at 05:09 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: M112631ZA	Sample number(s): 6409698-6409704							
Benzene	< 3	3.	mg/m3	107	107	62-108	0	30
C1-C4 Hydrocarbons as propane	< 20	20.	mg/m3					
>C4-C10 Hydrocarbons hexane	< 40	40.	mg/m3					
Ethylbenzene	< 4	4.	mg/m3	116	116	51-128	1	30
MTBE	< 4	4.	mg/m3					
Toluene	< 4	4.	mg/m3	93	95	61-127	2	30
Xylene (total)	< 9	9.	mg/m3	105	113	57-123	8	30
Batch number: M112641ZA	Sample number(s): 6409698-6409705							
Benzene	< 3	3.	mg/m3	94	96	62-108	2	30
C1-C4 Hydrocarbons as propane	< 20	20.	mg/m3					
>C4-C10 Hydrocarbons hexane	< 40	40.	mg/m3					
Ethylbenzene	< 4	4.	mg/m3	78	92	51-128	16	30
MTBE	< 4	4.	mg/m3					
Toluene	< 4	4.	mg/m3	76	77	61-127	1	30
Xylene (total)	< 9	9.	mg/m3	75	92	57-123	21	30
Batch number: M112661ZA	Sample number(s): 6409705							
>C4-C10 Hydrocarbons hexane	< 40	40.	mg/m3					

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

③ 9/17/11
12152

Lancaster Laboratories

Analysis Request/Environmental Services Chain of Custody

For Lancaster Laboratories use only Acct. #: ~~1212~~
Group #: 1266991 Sample #: 6409698-705

Client: Fairfax Petroleum Acct. #:
Project Name/#: Fairfax 26140 PWSID #:
Project Manager: Brian Barone P.O. #:
Sampler: Ryan Reeves Quote #:
Name of State where samples were collected: VA

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO3 B=NaOH
S=H2SO4 O=Other

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix: Soil	Matrix: Water (Potable / NPDES)	Matrix: Other	Total # of Containers	BTEX, MTBE by TO 18	TPH-GRO by TO 25	TPH-DRO by TO 25							Remarks	Temperature of samples upon receipt (if requested)
DPE Effluent 1-hour	9/13/2011	1245	X				X	1	X	X	X							LANCASTER WILL	
DPE Effluent 2-hour	9/13/2011	1345	X				X	1	X	X	X							REPORT BTEX, MTBE,	
DPE Effluent 4-hour	9/13/2011	1545	X				X	1	X	X	X							C1-C4, >C4-C10	
DPE Effluent 6-hour	9/13/2011	1745	X				X	1	X	X	X							PER M. STEELE.	
DPE-2 Effluent 1-hour	9/14/2011	1100	X				X	1	X	X	X							TS 9-20-11	
DPE-2 Effluent 2-hour	9/14/2011	1200	X				X	1	X	X	X								
DPE-2 Effluent 4-hour	9/14/2011	1400	X				X	1	X	X	X								
DPE-2 Effluent 6-hour	9/14/2011	1600	X				X	1	X	X	X								

Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

Data Package Options (please circle if required)
Type I (validation/NJ reg) TX-TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

SDG Complete? Yes No

State-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicated QC sample and submit triplicate volume)
Internal COC required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	9/16/11	1330			
			[signature]	9/17/11	0945

Lancaster Laboratories, Inc. 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 717-656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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Appendix K
MTBE Fate and Transport Analysis

MTBE Fate and Transport Analysis
Inactive Fairfax Facility #26140
9901 Georgetown Pike
Great Falls, VA

INTRODUCTION

Fate and transport analysis of dissolved methyl tertiary butyl ether (MTBE) in groundwater provides an estimate of MTBE concentrations at locations downgradient from a source area and potentially beyond the location of current downgradient monitoring points. The objective of this fate and transport analysis is to evaluate plume stability, its internal migration dynamics, and estimate the potential maximum extent of dissolved-phase MTBE due to historic releases associated with the former service station located at 9901 Georgetown Pike. The fate and transport evaluation presented herein is limited to analytical modeling and represents an approximation to be considered in the context of historic, recent, and future sampling of the groundwater monitoring network, which provides empirical information with regard to plume extent, migration, and internal variation.

FATE AND TRANSPORT MODEL

Two analytical fate and transport models were used to evaluate MTBE migration: a pulse source model and a continuous ("infinite") source model. The pulse source model simulates a finite mass of MTBE reaching the water table then migrating and attenuating downgradient as a pulse. The continuous source model assumes an infinite mass of contaminant that remains at a fixed location from which a dissolved-phase plume emanates.

Pulse Source Model

The historic transient presence of MTBE (>100 mg/L) in the northeast corner of 9901 Georgetown Pike (proximate to the former supply well PW-1) followed by sequential concentration increases at downgradient monitoring locations (MW-2, MW-14, MW-8, W-2, W-7), which subsequently subsided was modeled as a pulse source fate and transport model (Bedient et al., 1994, p. 137). A pulse source of MTBE to groundwater is expected to migrate in groundwater via advection while undergoing attenuation via dispersion, sorption, and biodegradation. These processes for a pulse source scenario can be modeled according to the following equation:

$$c(x,y,t) = \frac{coA}{4\pi t\left(D_x D_y\right)^{1/2}} \exp\left[-\frac{\left(x - v_x t\right)^2}{4D_x t} - \frac{y^2}{4D_y t} - \lambda t\right]$$

Where,

- c = Modeled Concentration (mg/L)
- c_o = Source Concentration (mg/L)
- v_x = Contaminant Velocity (ft/yr)
- D_x = Longitudinal Dispersion (ft^2/yr)
- D_y = Transverse Dispersion (ft^2/yr)
- A = Ground Surface Area of Release (ft^2)
- t = Time (years)
- x = Longitudinal Distance (ft)
- y = Transverse Distance (ft)
- λ = First-Order Decay Coefficient (1/yr)

Fate and transport model input parameters are summarized as follows:

- Source Concentration (c_o) – The starting source concentration **(240 mg/L)** is the maximum MTBE concentration historically detected in the release area on site.

- *Contaminant Velocity (V_x) (ft/yr)* – Contaminant velocity is calculated as the seepage velocity (Ki/n) divided by the retardation factor (R). The contaminant velocity (**27 ft/yr)** was estimated via "peak-to-peak" analysis whereby the distance between MW-8 and W-2 was divided by the time separating the two maximum detections at these locations (MW-8, 226 mg/L, 10/15/09; W-2, 14 mg/L, 6/7/13): 100 feet / 3.65 years = 27 ft/yr.

- *Longitudinal Dispersion (D_x)* – Longitudinal dispersion is the product of the contaminant velocity and the longitudinal dispersivity (a_x). The longitudinal dispersivity (a_x) is calculated according to the method of Xu and Eckstein (1995). This method is scale dependent, and is estimated based on the length of the plume. The plume length was selected to correspond to the distance from the presumed source area near MW-2/MW-14 to downgradient monitoring well W-7 where concentrations up to 0.016 mg/L have been detected (approximate edge of plume).

- *Transverse Dispersion (D_y)* - Transverse dispersion is the product of the contaminant velocity and the transverse dispersivity (a_y). Transverse dispersivity (a_y) is calculated as 0.1 times the longitudinal dispersivity.

- *Ground Surface Area of Release (A)* – The ground surface area of the release is taken as **1,600 ft^2**, which corresponds to the approximate area of the former dispenser island footprint, as well as the area of the former underground storage tank field adjacent to Walker Road.

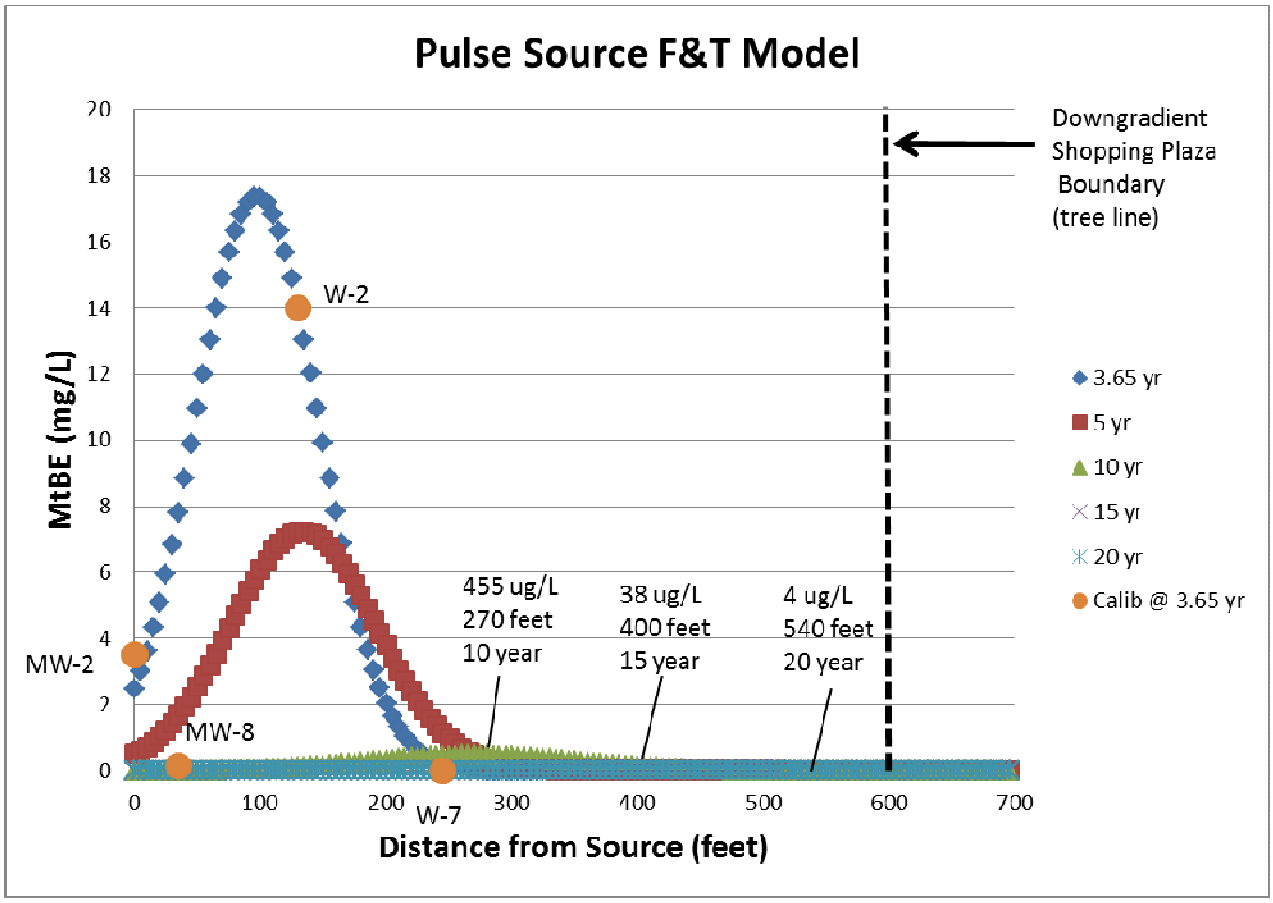
- *Time (t)* – The calibration run corresponds to a time of **3.65 years**, the difference between the time of maximum concentration at MW-8 (226 mg/L, 10/15/09) and W-2 (14 mg/L, 6/7/13). The time value was adjusted to simulate future migration.

- *First-Order Decay Coefficient (λ) (1/yr)* – The first order decay coefficient (**0.415**) corresponds to 0.693/half-life. The half-life (**1.67 year**) was adjusted as a calibration parameter to match modeled concentrations to measured downgradient concentrations at the calibration time. According to Roberts (July 23, 2009), MTBE half-lives range from 0.01 to 9 years with a median half-life of 0.82 year for bedrock wells and 1.1 year overburden wells.

<u>Results</u>

Predictive pulse source modeling indicates that additional downgradient migration may occur (e.g., without additional remedial measures, concentrations could increase in downgradient monitoring well W-7). The pulse source model also indicates that MTBE is not expected to migrate beyond the downgradient shopping plaza at concentrations greater than 0.004 mg/L (4 µg/L), and that could take up to 20 years from the time of the release. A previously existing monitoring well associated with the former Virginia Department of Environmental Quality

(VADEQ) pollution control case PC94-1568 (MW-2), if intact, is also situated so as to intercept dissolved-phase migration beyond the shopping center. Kleinfelder will evaluate the condition of MW-2 following receipt of access from the property owner.



Continuous Source Model

BIOSCREEN is a Microsoft® Excel spreadsheet application of "An Analytical Model for Multidimensional Transport of a Decaying Contaminant Species," by P. A. Domenico, 1987 (Newell, et al., August 2006). The analytical solute transport tool is designed to simulate advection, dispersion, adsorption, and first-order decay. With a continuous source area of known size and concentration, the tool calculates the constituent concentration in groundwater from the source area as a function of distance and time. The output includes constituent concentrations in groundwater at downgradient distances from the source.

Several fate and transport model input parameters are described under the pulse source model above. Additional input parameters are presented as follows:

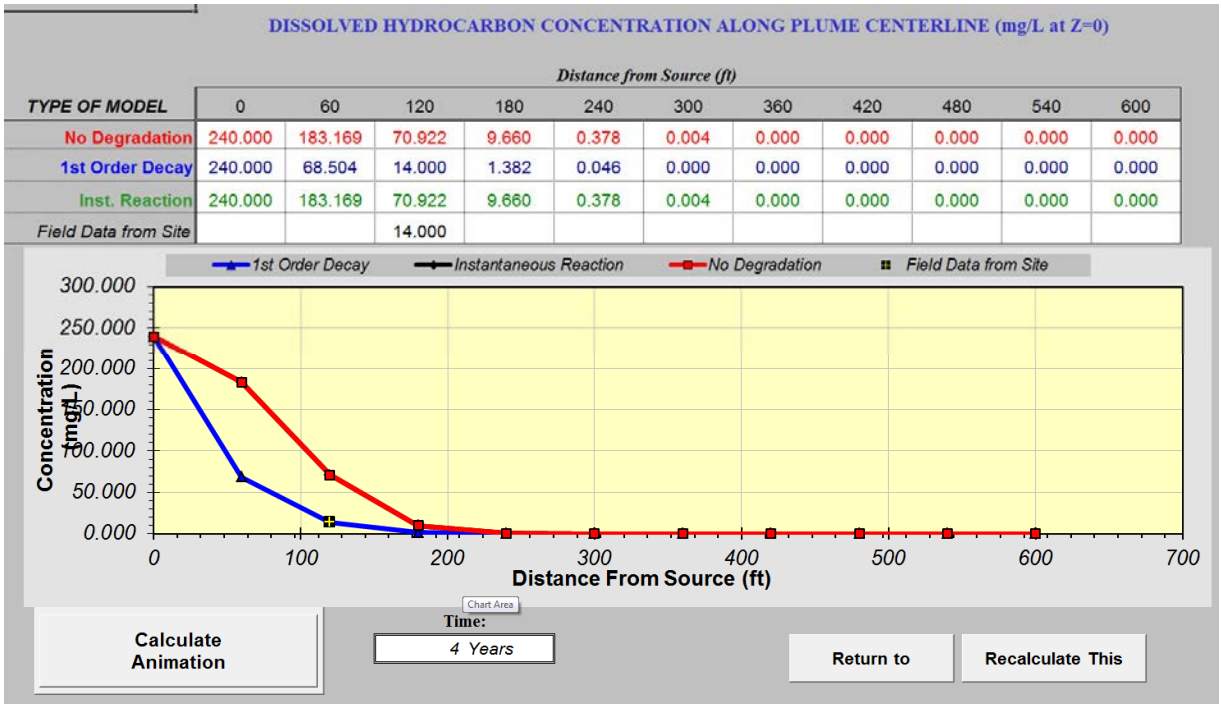
- *Source Width (feet)* – A source width of **55 feet** was selected, and corresponds to the width of the former UST field transverse to groundwater flow.

- *Source Thickness in Saturated Zone (feet)* – The source thickness was estimated to be **45 feet** which corresponds to the interval defined by the depth to water in monitoring well MW-1 (32 feet) (150 mg/L, 6/6/13) and the depth to the bottom of the 67 to 77 foot deep packer interval, which had a corresponding concentration of 140 mg/L.

- *First-Order Decay Coefficient (λ) (1/yr)* – The first order decay coefficient (**0.67**) corresponds to 0.693/half-life. The half-life (**1.04 year**) was adjusted as a calibration parameter to match modeled concentrations to measured downgradient concentrations at the calibration time. The calibration half-life (1.04 year) is within the median half-life of 0.82 year for bedrock wells and 1.1 year overburden wells according to Roberts (July 23, 2009).

Results

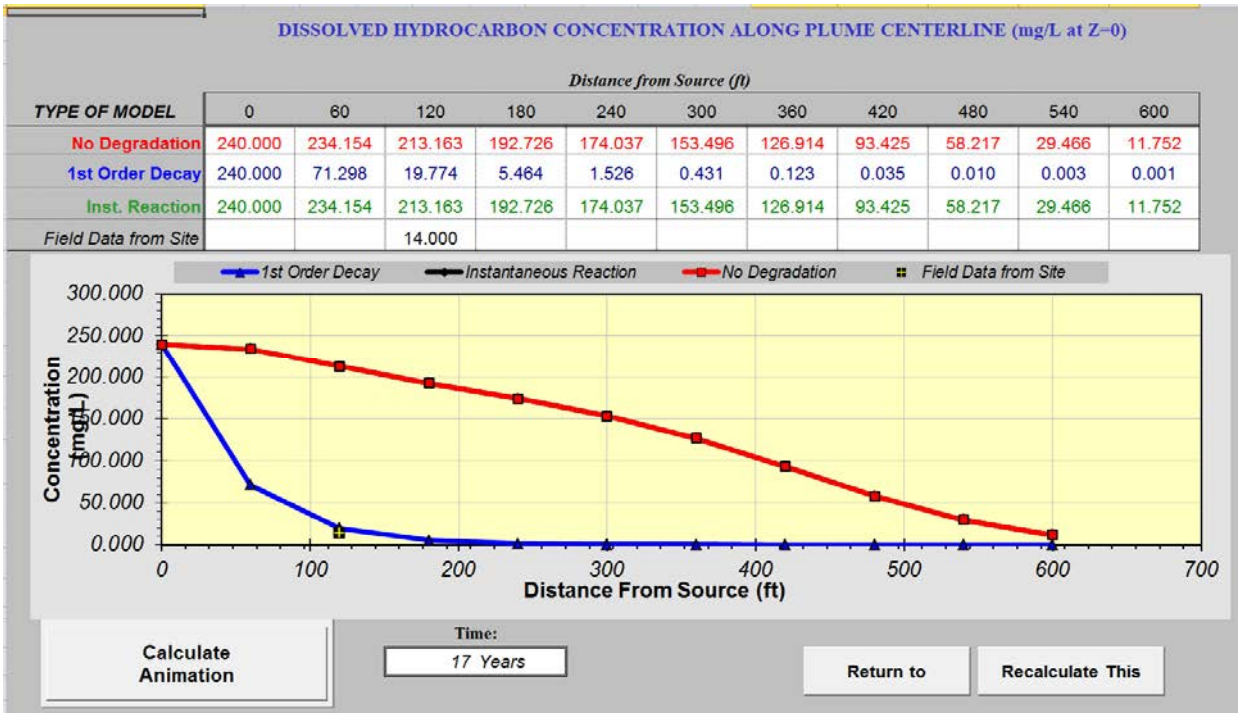
Predictive continuous source modeling indicates that additional downgradient migration may occur (e.g., without additional remedial measures, concentrations could increase in downgradient monitoring wells). The continuous source model also indicates that MTBE is not expected to migrate beyond the downgradient shopping plaza at concentrations greater than 0.001 mg/L (1 µg/L). Comparison of the dissolved-phase MTBE distribution maps from October 2009 to June 2013 indicates that the plume core and perimeter have contracted, suggesting the fate and transport model is conservative. The aforementioned monitoring well MW-2 is also situated so as to intercept dissolved-phase migration beyond the shopping center.



DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	60	120	180	240	300	360	420	480	540	600
No Degradation	240.000	183.169	70.922	9.660	0.378	0.004	0.000	0.000	0.000	0.000	0.000
1st Order Decay	240.000	68.504	14.000	1.382	0.046	0.000	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	240.000	183.169	70.922	9.660	0.378	0.004	0.000	0.000	0.000	0.000	0.000
Field Data from Site			14.000								

Calibration Simulation



DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	60	120	180	240	300	360	420	480	540	600
No Degradation	240.000	234.154	213.163	192.726	174.037	153.496	126.914	93.425	58.217	29.466	11.752
1st Order Decay	240.000	71.298	19.774	5.464	1.526	0.431	0.123	0.035	0.010	0.003	0.001
Inst. Reaction	240.000	234.154	213.163	192.726	174.037	153.496	126.914	93.425	58.217	29.466	11.752
Field Data from Site			14.000								

Steady-State Predictive Simulation

LIMITATIONS

This report was prepared in substantial accordance with the generally accepted hydrogeologic practice as it exists in the site area at the time of our study. The scope of work was limited to preliminary analytical modeling. It should be recognized that definition and evaluation of subsurface conditions are difficult. Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the subsurface conditions present. The conclusions of this assessment are based on geologic information provided by others, analytical modeling assumptions, and literature values for hydrogeologic properties. More extensive studies may further reduce the uncertainties associated with this assessment. Kleinfelder should be notified for additional consultation if the client wishes to reduce the uncertainties beyond the level associated with this report. No warranty, express or implied, is made.

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REFERENCES

Bedient, P.B., Rifai, H.S., Newell, C.J., 1994, *Ground Water Contamination, Transport & Remediation*, Englewood Cliffs, N.J., PTR Prentice Hall, 541 p.

Newell, C.J., McLeod, R.K., Gonzales, J.R., Wilson, J.T., August 2006, BIOSCREEN Natural Attenuation Decision Support System User's Manual Version 1.3, EPA/600/R-96/087.

Roberts, E.P., June 23, 2009, Observed Contaminant Half-Lives – Will Natural Attenuation Achieve the Goal?

Xu, M. and Eckstein, Y., 1995, *Use of Weighted Least-Squares Method in Evaluation of the Relationship Between Dispersivity and Scale*: Ground Water, v. 33, p. 905-908.