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3RD QUARTER 2015 PROGRESS REPORT

MDE CASE NO. 2012-0067-AA
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H&J-101-01

H&J BP SUBWAY FACILITY
738 CRAIN HIGHWAY
GAMBRILLS, MD 21054

NOVEMBER 27, 2015

Prepared For:

H&J AMOCO, INC.
738 CRAIN HIGHWAY
GAMBRILLS, MD 21054

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3RD QUARTER 2015 - PROGRESS REPORT
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1.0 INTRODUCTION

BP Environmental, Inc. (BPE) was retained by H&J Amoco, Inc. to conduct quarterly groundwater monitoring and reporting for the property known as H&J BP Subway located at 738 Crain Highway, Gambrills, Anne Arundel County, Maryland, 21054 (SITE). The SITE comprises approximately two acres and includes Parcel 12 and a portion of Parcel 54 on Anne Arundel County Tax Map 37. The purpose of the quarterly groundwater monitoring and reporting was to satisfy a request made by the Maryland Department of the Environment (MDE) to perform quarterly monitoring at the SITE in their correspondence dated September 4, 2013. This reporting period covers the period between July 1, 2015 and September 30, 2015, hereinafter referred to as the third quarter of 2015 (3Q15).

1.1 Topography and Hydrology

The SITE is located in the Western Shore Uplands region of the Embayed section, Coastal Plain physiographic province. A review of the United States Geological Survey 7.5 Minute Series Odenton, MD Topographic Quadrangle (2011) indicates that the elevation of the SITE is between 100 - 140 feet referenced to the North American Vertical Datum of 1988. The SITE slopes gently to the west toward an unnamed tributary of Towers Branch. The nearest navigable water is an unnamed tributary of Bacon Ridge Branch located approximately 1,200 feet southeast of the SITE. **Figure 1**, a **Topographic Map**, illustrates the location of the SITE and local topographic features.

1.2 Geology and Hydrogeology

According to the United States Department of Agriculture – Natural Resources Conservation Service, the dominant soil type in the general area of the SITE is Collington-Wist complex. The Collington-Wist complex is described as very deep, well drained, moderately high to highly permeable soils that developed in glauconite bearing loamy fluviomarine deposits. Depth to the water table tends to be more than 7.5 feet below ground surface (bgs). Bedrock has not been encountered to depths of 80 feet bgs at the SITE.

A review of the 1968 Geologic Map of Maryland produced by the Maryland Geological Survey (MGS) indicates that the shallow soils on-site are underlain by Cretaceous-aged Matawan formation. Per the MGS, the Matawan formation is composed of dark gray micaceous, glauconitic, argillaceous, fine-grained sand and silt. The thickness of the formation varies between 0 – 70 feet.

1.3 Limitations and Exceptions of Assessment

BPE performed professional services and prepared conclusions in accordance with the principles and practices in the field of environmental science. This work was completed in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the SITE. This warranty is in lieu of all other warranties either expressed or implied. BPE is not responsible for the independent conclusions, opinions, or recommendations made by others on the basis of the data presented in this report.

This report was prepared under the supervision of a licensed Professional Geologist. Statements, conclusions, and recommendations made in this report are based on information provided to BPE, observations of existing SITE conditions, our general knowledge of the SITE, testing of select groundwater samples, and interpretations of a limited set of data. BPE cannot be held responsible for the accuracy of the analytical work performed by others.

In-house licensed professionals direct all projects. These professionals, including geologists and engineers, shall be guided by the highest standards of ethics, honesty, integrity, fairness, personal honor, and professional conduct. To the fullest extent possible, the licensed professionals shall protect the public health and welfare and property in carrying out their professional duties. In the course of normal business, recommendations by the in-house professional may include the use of equipment, services, or products in which BPE has an interest. Therefore, BPE is making full disclosure of potential or perceived conflicts of interest to all parties.

2.0 BACKGROUND

The SITE is located along Crain Highway (MD Route 3) approximately 300 feet north of the intersection of Crain Highway and West Churchview Road. The SITE consists of approximately two acres and is developed with an approximate 6,750 square-foot convenience store and canopied gasoline and diesel dispensing islands. Groundcover consists primarily of buildings, asphalt, concrete, and grassed pervious areas. Entrances along the western and eastern SITE boundaries provide access from Crain Highway. **Figure 2**, a **Site Map**, shows the location of SITE improvements, the tank field monitoring pipes (TFMPs), existing monitoring wells (MW) MW-01 through MW-08, and the SITE supply well (# AA-94-0521).

Based on reports supplied by the current property occupant, field observations made by BPE, and review of existing analytical data, the following summarizes the environmental conditions at the SITE:

- The SITE is supplied by a potable water well (Permit # AA-94-0521). The well was drilled to total depth of 206′ bgs and is screened from 199′ – 206′ bgs. Sampling and laboratory analysis of the SITE supply well on June 10, 2013, December 11, 2013, January 20, 2014, June 24, 2014, September 24, 2014, December 22, 2014, March 29, 2015, and June 18, 2015 revealed non-detect concentrations for all compounds analyzed.
- Sanitary waste is directed to an on-site septic system.
- Stormwater migrates by sheetflow across the impervious/asphalt surface towards drainage ditches along the sides of the property.
- The surface of the SITE above and adjacent to the petroleum distribution system (UST system) (underground storage tanks [USTs], lines and dispensers) is covered by an asphalt and concrete cap.
- The UST system consists of one 12,000-gallon composite (steel with fiberglass reinforced plastic [FRP]) regular gasoline UST, one 12,000-gallon composite (steel with FRP) super

gasoline UST, one 10,000-gallon composite (steel with FRP) diesel UST, double-walled pressurized product lines, and gasoline and diesel dispensers.

- In May and June 2012, MDE personnel reportedly observed petroleum product in the sumps beneath both diesel dispensers. Petroleum product was also reportedly observed in the sump beneath gasoline dispensers #11/#12. Test boot entry fittings were reportedly pulled back in some or all of the sumps noted above, allowing petroleum product to enter the corrugated chase pipe for the product lines. MDE also gauged up to 0.05′ of light non-aqueous phase liquid (LNAPL), i.e. free product, in the TFMPs.
- There are two TFMPs in the existing UST field. TFMPs are not MWs and provide screening information solely on the conditions within the tank field and, depending on local hydrogeological conditions, may not be representative of groundwater conditions in the uppermost water-bearing zone.
- Periodic gauging of the TFMPs from July 2012 to early October 2012 revealed apparent NAPL thicknesses (ANT) of as much as 0.05', indicating that a mass of LNAPL had accumulated in the relatively permeable pea gravel backfill of the tank pit (see **Table 1** for TFMP gauging data).
- On October 4, 2012, an enhanced fluid recovery (EFR) event was conducted on the SITE TFMPs to remove separate-phase, dissolved-phase, and vapor-phase petroleum hydrocarbons that had accumulated in the tank pit. A total of 629 gallons of liquid, including an unknown volume of emulsified LNAPL, was recovered and transported off-site for proper disposal.
- Following the EFR event in October 2012 and through the September 2015 gauging event, liquid level data indicates that mobile LNAPL has not been detected in the TFMPs. These results are documented in the quarterly TFMP gauging reports or other subsurface investigation and/or monitoring reports that have been submitted for the SITE.
- A Limited Subsurface Investigation (LSI) was conducted at the SITE in November 2012. The LSI consisted of the installation of four soil borings (SB-01 through SB-04), soil

sampling and analysis, the installation of two temporary wells (TW-01 and TW-03), groundwater sampling and analysis, and the sampling and analysis of water obtained from the TFMPs. In addition, a record review of water well information on adjacent parcels was completed.

- The results of the November 2012 LSI revealed a mass of adsorbed-phase petroleum compounds in the immediate vicinity of the USTs at the SITE. Sampling and analysis of water perched in the TFMPs (n.b. groundwater quality data from the tank pit is considered screening data as the water is perched approximately 50 feet above the uppermost water-bearing unit) and within a water-saturated seam in the vadose zone (from TW-01) revealed concentrations of petroleum-related constituents in excess of the MDE Generic Numeric Cleanup Standards for Groundwater in Type I or II Aquifers (hereinafter referred to as MDE groundwater cleanup standards). Specifically, Total Petroleum Hydrocarbons – Gasoline Range Organics (GRO), Total Petroleum Hydrocarbons – Diesel Range Organics (DRO), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX), Naphthalene, Isopropylbenzene, and Methyl tert-butyl Ether (MTBE), were present at concentrations exceeding their respective MDE groundwater cleanup standards. These constituents are, therefore, considered potential contaminants of concern (PCOC). TW-03 was not sampled because no water accumulated in the well, indicating that the shallow water encountered within the tank field and within TW-01 is not spatially continuous across the SITE and is perched above the uppermost water-bearing zone. See **Table 2a** for a **Summary of Groundwater Screening Results** (TFMP and TW data). In addition, the review of public water well information for adjacent parcels revealed that many are served by private water supply wells.
- Given the presence of nearby water supply wells and the PCOC, BPE recommended, in the *LSI Report* dated December 28, 2012, that a Supplemental Site Investigation (SSI) be completed. MDE, in their letter dated March 12, 2013, concurred with this recommendation, contingent upon several modifications.

- An SSI was conducted in May and June 2013. The SSI consisted of the installation of three additional soil borings (SB-05 through SB-07) and three new, permanent monitoring wells (MW-01 through MW-03). Soil borings SB-05, SB-06, and SB-07 were drilled to a depth of approximately 10′ below the top of the uppermost water-bearing zone encountered at approximately 66′ - 68′ bgs. A soil sample was collected from the interval that contained the highest photoionization detector reading in each boring. No adsorbed-phase concentrations in samples obtained from borings SB-05, SB-06, or SB-07 exceeded the MDE Generic Numeric Cleanup Standards for non-residential soil (hereinafter referred to as MDE non-residential soil cleanup standards). Monitoring wells MW-01, MW-02, and MW-03 were completed in soil borings SB-05, SB-06, and SB-07, respectively. The monitoring wells were developed in accordance with industry standards. Sampling and laboratory analysis of the monitoring wells revealed dissolved-phase concentrations of GRO, DRO, and MTBE in excess of the MDE groundwater cleanup standards (see **Table 2b - Summary of Groundwater Quality Results**).
- In the *July 31, 2013 SSI Report*, BPE recommended that Further Subsurface Investigation (FSI), including the installation and sampling of additional monitoring wells and the sampling of adjacent, down-gradient water supply wells be completed. MDE, in their correspondence dated September 4, 2013, concurred with the recommendations contingent upon minor modifications.
- Five additional monitoring wells (MW-04 through MW-08) were installed at the SITE in October 2013 as part of the FSI. The wells were constructed and screened in a manner consistent with monitoring wells MW-01 through MW-03. The top-of-casing (TOC) elevations were surveyed for all eight (8) monitoring wells. See **Figure 2 - Site Map** for monitoring well locations.
- Gauging of all monitoring wells in November and December 2013 revealed an absence of mobile LNAPL and an east-southeasterly general direction of groundwater flow in the uppermost water-bearing zone. November-December 2013 SITE groundwater quality data

indicate multiple exceedances of the MDE groundwater cleanup standards. The PCOC, i.e. those contaminants that exceed their respective MDE groundwater cleanup standards, identified in the November-December 2013 groundwater quality dataset include GRO, DRO, Benzene, Naphthalene, and MTBE.

- In March 2014, BPE submitted a *Field Survey of Water Wells and Off-Site Water Well Sampling Report* to MDE. The findings of the report indicate that twenty-nine (29) water wells were identified within 0.25 miles of the SITE. BPE identified two (2) wells with the potential to be impacted by groundwater contamination at the SITE due to distance/direction from the SITE and water well construction details. Four (4) off-site water wells, which included the two (2) wells BPE identified as being potentially impacted by the on-site groundwater contamination, were sampled at properties located north, east, and south-adjacent of the SITE. Samples were sent to a Maryland-certified laboratory and analyzed for Volatile Organic Compounds (VOCs). Laboratory analytical results indicate that no compounds were present above their respective laboratory method detection limits in any of the off-site water well samples.
- Quarterly groundwater monitoring completed during the 2nd Quarter of 2015 (2Q15), revealed results consistent with those obtained during the 1st Quarter of 2015 (1Q15), 4th Quarter of 2014 (4Q14), 3rd Quarter of 2014 (3Q14), 2nd Quarter of 2014 (2Q14), 1st Quarter 2014 (1Q14), and 4th Quarter of 2013 (4Q13) groundwater monitoring events. Generally, results have shown that groundwater in the uppermost water-bearing zone flows to the east-southeast and the highest concentrations of dissolved-phase contaminants are present in monitoring wells located east of the UST field (e.g. MW-02 and MW-06).
- Given the consistency of groundwater monitoring results and absence of current unacceptable human health risk, BPE recommended a reduction in the frequency of monitoring well gauging, the frequency of SITE potable well sampling, and groundwater sampling parameters, in addition to the installation of two off-site monitoring wells, in the *2Q14 Progress Report*. MDE, in a letter dated October 16, 2014 approved the referenced

recommendations made by BPE, contingent upon several minor modifications, and approved a work plan detailing the proposed installation of two off-site monitoring wells.

- A *Step-Out Delineation Work Plan* detailing the proposed installation of two (2) off-site monitoring wells sited downgradient from the apparent source area was submitted to MDE on November 14, 2014. MDE approved the *Step-Out Delineation Work Plan*, contingent upon minor modifications, in a letter dated December 29, 2014. The MDE-approved scope of the additional delineation includes the installation of two (2) monitoring wells on the parcel located southeast-adjacent of the SITE (Parcel 45 on Anne Arundel Tax Map 37; physical address of 743 MD Route 3 North, Gambrills, MD), opposite Crain Highway.
- During 1Q15, BPE made several attempts to communicate via telephone with Baldwin Investors, the owner of the property with the physical address of 743 MD Route 3 North, for the purpose of acquiring access to the property to install and sample two (2) monitoring wells. BPE did not receive a response to these requests in 1Q15.
- A formal request for access for the purpose of installing monitoring wells and evaluating groundwater quality at the property located at 743 MD Route 3 North was mailed to the property owner, Baldwin Investors, on or about April 15, 2015. As of the date of this report, Baldwin Investors has not replied to this written request for access to their property for the purpose of subsurface investigation.
- BPE prepared and included a Risk Determination Evaluation following the MDE's MEAT Guidance Document in the *July 31, 2015 2Q15 Progress Report*. The seven (7) risk factors, including 1) liquid phase hydrocarbons, 2) the current and future use of impacted groundwater, 3) the migration of contamination, 4) human exposure, 5) environmental ecological exposure, 6) impact to utilities and other buried services, and 7) other sensitive receptors, were considered. It was determined that the contamination at the SITE does not exhibit any of the seven (7) risk factors, with the exception of migration of contamination off-site, which could not be fully determined based upon available data. Given the apparent lack of risk, BPE recommended, as a precursor to case closure, collecting another quarterly

round of liquid level and groundwater quality data, evaluating spatiotemporal trends in the groundwater quality data amassed for the SITE, and sampling the water wells at the following adjacent properties:

- Leo's Vacation Center (729 Route 3 N);
- Design in Motion Dance (743 Route 3 N);
- Honda Powersports of Crofton (745 Route 3 N); and,
- Elite Auto Body (738 Route 3 N).

3.0 SITE ACTIVITIES CONDUCTED DURING THE REPORTING PERIOD

BPE performed the following activities during the 3Q15.

3.1 Well Gauging

BPE gauged the eight (8) monitoring wells (MW-01 through MW-08) and two (2) TFMPs (TFMP-01 and TFMP-02) located on-site at a frequency of once per quarter, in accordance with the reduced gauging frequency authorized by MDE in their letter dated October 16, 2014. During the 3Q15 monitoring event, all monitoring wells were screened across the water table. Liquid level measurements collected during 3Q15 are provided in **Table 1**. Liquid level data collected from the monitoring wells indicates that the water table at the SITE is deep (between 65′ and 70′ below TOC during 3Q15). Liquid level measurements collected on September 16, 2015 are provided in **Table 1** and were used to generate the **Potentiometric Surface Map** presented as **Figure 3**. The water table elevations collected from the uppermost water-bearing zone at the SITE generally indicate higher hydraulic heads in the northwestern portion of the SITE and lower heads in the southeastern portion of the SITE. This data is consistent with the liquid level elevation data collected during 4Q13, 1Q14, 2Q14, 3Q14, 4Q14, 1Q15, and 2Q15.

Generally, liquid levels measured in each of the SITE monitoring wells declined from August 2014 through the March 2015 gauging event (see **Table 1**). The range of liquid level declines exhibited in individual SITE monitoring wells between August/September 2014 and March 2015 ranged from 0.51' to 0.60'. Liquid levels in each SITE monitoring well rose between the March 2015 and June 2015 gauging events. The September 2015 liquid level elevation data is similar to the June 2015 liquid level elevation data (within 0.08' for any individual monitoring well).

During 3Q15, measureable thicknesses of LNAPL were not detected in any SITE monitoring well or TFMP (see **Table 1**). Measureable thicknesses of LNAPL have not been detected in SITE TFMPs since prior to the completion of the October 2012 EFR event, whereas LNAPL has never been detected in any of the SITE monitoring wells since their installation.

3.2 Tank Field Water Quality Monitoring

As required by MDE, tank field water samples were collected from the SITE TFMPs during 3Q15. Prior to sample collection, at least three pipe volumes of liquid were removed from each TFMP via a peristaltic pump. Samples were collected by a BPE field technician donning new, nitrile gloves when liquid levels in the purged TFMPs were given sufficient time to recover to at least 90% of their pre-purge levels. Samples were placed into laboratory-supplied, clean glass bottles, packaged in a cooler on ice, and shipped to Environmental Science Corporation (ESC), a Maryland-certified laboratory located in Mount Juliet, Tennessee for analysis.

In accordance with MDE's October 16, 2014 letter, TFMP samples were analyzed for the reduced suite of VOCs and fuel oxygenates, including BTEX, Isopropylbenzene, Naphthalene, n-Propylbenzene, Trimethylbenzene isomers, MTBE, tert-Amyl Alcohol, tert-Butyl Alcohol, tert-Amyl Methyl Ether, Diisopropyl Ether, and Ethyl Tert-Butyl Ether, following Environmental Protection Agency (EPA) Method 8260B. Samples were also analyzed for DRO and GRO following EPA Method 8015B.

The laboratory analysis performed on the VOC samples collected on September 16, 2015 from the TFMPs was performed in error; specifically, the VOC samples were analyzed outside of the method-specific holding time. Accordingly, additional VOC samples were collected from the TFMPs on October 19, 2015. The VOC samples collected on October 19, 2015 were collected following the same methodology as those collected on September 16, 2015. A summary of the results of the 3Q15 TFMP laboratory analytical data for the samples collected September 16, 2015 and October 19, 2015, as well as historical analytical results, is attached as **Table 2a**. Both sets of 3Q15 TFMP laboratory analytical data are included in **Appendix A**.

TFMP purge water generated during the 3Q15 was temporarily containerized on-site in a sealed 55-gallon drum. The purge water was treated using a Carbonair portable activated carbon filter and discharged to the impervious ground surface during the October 19, 2015 SITE visit.

3.3 Groundwater Quality Monitoring

As required by MDE, groundwater samples were collected from all SITE monitoring wells during 3Q15 for laboratory analysis. Samples were collected following low-flow purging and sampling methodology. Groundwater samples were taken following the stabilization of drawdown and water quality parameters (dissolved oxygen, oxidation reduction potential, conductivity, and pH) at discharge rates less than or equal to 250 milliliters per minute. Samples were collected by a BPE field technician donning new, nitrile gloves, were placed into laboratory-supplied, clean glass bottles, were packaged in a cooler on ice, and were shipped to ESC for analysis.

In accordance with MDE's October 16, 2014 letter, groundwater samples were analyzed for the reduced suite of VOCs and fuel oxygenates following EPA Method 8260B. Samples were also analyzed for DRO and GRO following EPA Method 8015B. A summary of the results of the 3Q15 groundwater quality results, as well as historical analytical data, is attached as **Table 2b**. The 3Q15 groundwater monitoring laboratory analytical report is included in **Appendix B**.

See **Figure 4** for a spatial presentation of the petroleum-related constituents contained in the groundwater samples, collected during the 3Q15 (September 2015) sampling event, that exceed the Maryland state guidelines given in the Interim Final Guidance document (Update No. 2.1) dated June 2008.

Monitoring well purge water generated during the 3Q15 groundwater monitoring event was temporarily containerized on-site in a sealed 55-gallon drum. The purge water was treated using a Carbonair portable activated carbon filter and discharged to the ground surface during the October 19, 2015 SITE visit.

3.4 Site Supply Well Water Quality Monitoring

The SITE supply well was sampled on September 16, 2015. The sample was collected by a BPE technician at an interior faucet after water was purged from the system for at least 15 minutes. The SITE supply well sample was placed into laboratory-supplied, clean glass bottles, was packaged in a cooler on ice, and was shipped to ESC for analysis. The sample was analyzed for the full-suite of VOCs plus fuel oxygenates and Naphthalene following EPA Method 524.2. A summary of the 3Q15 SITE supply well water quality results, along with historical results, is attached as **Table 3**. The 3Q15 SITE supply well laboratory analytical report is attached as **Appendix C**.

3.5 Off-Site Supply Well Water Quality Monitoring

In the *July 31, 2015 2nd Quarter 2015 Progress Report*, BPE recommended the collection of samples from the water wells at the following properties located adjacent to the SITE:

- 745 Route 3 N, Gambrills, MD (Honda Powersports of Crofton, OSW-1, Permit # AA-94-6525)
- 743 Route 3 N, Gambrills, MD (Design in Motion Dance, OSW-2, Permit # AA-81-5178)
- 729 Route 3 N, Gambrills, MD (Leo's Vacation Center, OSW-3, Permit # AA-94-7975)
- 738 B Route 3 N, Gambrills, MD (Elite Auto Body, OSW-4, Permit # AA-92-1914)
    - N.B. The well utilized by Elite Auto Body is located on the north-adjacent property - 727 MD Route 3 N, Gambrills, MD. The well tag could not be located to confirm the well permit number.

The physical locations of these off-site wells, either verified through field observation or conveyed to BPE by property owners or occupants, are provided as **Figure 5**.

Permission to collect drinking water samples was provided by owners or occupants of all locations by October 2015. Groundwater samples were collected by a BPE technician from the off-site locations on September 21, 2015 and October 27, 2015. Groundwater samples were collected from an accessible tap located upstream of any water system treatment devices utilized at the

facility and after each well had been purged for at least 15 minutes. Samples were collected by BPE field technicians donning new, nitrile gloves, were placed into laboratory-supplied, clean glass bottles, were packaged in a cooler on ice, and were shipped to ESC for analysis. Off-site water supply well samples were analyzed for the following:

- VOCs including fuel oxygenates following EPA Method 524.2.

Laboratory analytical results for the off-site water supply well samples are provided as **Appendix D**. A summary of the off-site water supply well sample laboratory analytical results is included as **Table 4.**

4.0 SUMMARY OF RESULTS

The 3Q15 results are summarized as follows:

- The SITE is utilized as a petroleum filling station with convenience store.
- The ground cover at the SITE is almost exclusively composed of impervious surfaces, including asphalt, concrete, buildings, and fueling canopies.
- LNAPL was reportedly observed at the SITE in select dispenser sumps and in the TFMPs during inspections that occurred in May and June 2012 by MDE. In addition, BPE gauged measureable thicknesses of LNAPL in the TFMPs prior to the performance of an EFR in October 2012 (see **Table 1**).
- In accordance with the MDE correspondence dated September 4, 2013, BPE began quarterly groundwater monitoring in 4Q13. Results of the eighth consecutive quarterly monitoring period are presented herein.
- In accordance with the reduced monitoring program authorized by MDE in their letter dated October 16, 2014, liquid level measurements were collected once from the SITE TFMPs during 3Q15. During the September 16, 2015 gauging event, water levels in the tank field ranged from 8.98′ to 9.66′ below TOC. Water in the tank field is perched above the uppermost water-bearing zone. Liquid level gauging of the TFMPs during 3Q15 revealed an absence of measureable (≥0.01′) ANT. Measureable LNAPL has not been detected in the TFMPs since October 4, 2012 (i.e. since the performance of an EFR).
- Palpable, pungent, sewer-like odors were observed in the water purged and sampled from the two (2) TFMPs at the SITE during recent monitoring events.
- Depth-to-water in the uppermost water-bearing zone ranged from 65.91´ to 69.72´ below TOC during the groundwater monitoring event performed in 3Q15. **Table 1** is a summary of the liquid level gauging data.

- The September 16, 2015 hydraulic head data obtained from the monitoring well network was used to generate the **Potentiometric Surface Map** provided as **Figure 3**. The distribution of the equipotential lines indicates that the general direction of groundwater flow in the uppermost water-bearing zone is to the southeast. The average hydraulic-gradient at the SITE based on the September 16, 2015 hydraulic head data is calculated to be approximately 0.006.
- On September 16, 2015, tank field water samples were collected from the two (2) TFMPs at the SITE and analyzed for the reduced-list VOCs, GRO, and DRO for screening purposes. A laboratory error resulted in the TFMP VOC samples being analyzed outside of the method-specific holding time. Accordingly, the TFMPs were resampled on October 19, 2015 for VOCs. GRO, DRO, BTEX, Naphthalene, MTBE and other VOCs and oxygenates were detected in one or more of the TFMPs. See **Table 2a** for a tabular summary of the tank field water quality results.
- From September 16-17, 2015, groundwater samples were collected from monitoring wells MW-01 through MW-08 following low-flow purging and sampling methodology. All groundwater samples were analyzed for GRO, DRO and the reduced suite of VOCs and fuel oxygenates (see **Table 2b**).
- Multiple dissolved-phase contaminant concentrations in the groundwater samples collected exceeded their respective MDE groundwater cleanup standards. Dissolved-phase GRO was detected above the MDE groundwater cleanup standard of 0.047 milligrams per liter (mg/L) at MW-02 (0.728 mg/L) and MW-06 (1.75 mg/L). Dissolved-phase DRO was detected above the MDE groundwater cleanup standard of 0.047 mg/L at MW-02 (0.161 mg/L), and MW-06 (0.405 mg/L). MTBE was detected in multiple monitoring wells at concentrations in excess of the MDE groundwater cleanup standards of 0.02 mg/L including MW-02 (2.34 mg/L), MW-03 (0.0231 mg/L), MW-06 (2.980 mg/L), and MW-08 (0.0457 mg/L). See **Table 2b** for a tabular summary of groundwater quality results from the monitoring wells compared to the MDE groundwater cleanup standards. **Figure**

4 is a Site Map showing groundwater quality exceedances as compared to MDE groundwater cleanup standards.

- The SITE is served by a water supply well (Permit # AA-94-0521). The SITE water supply well was last sampled on September 16, 2015 and analyzed for VOCs following EPA Method 524.2. Laboratory analysis of the SITE water supply well revealed non-detect concentrations for all analyzed compounds (see **Table 3** and **Appendix C**). The 3Q15 results are consistent with the June 10, 2013, December 11, 2013, January 20, 2014, June 24, 2014, September 24, 2014, December 22, 2014, March 29, 2015, and June 18, 2015 SITE supply well sampling events.
- The following water wells were sampled at properties located adjacent to the SITE:
    - 745 Route 3 N, Gambrills, MD (Honda Powersports of Crofton, OSW-1, Permit # AA-94-6525)
    - 743 Route 3 N, Gambrills, MD (Design in Motion Dance, OSW-2, Permit # AA-81-5178)
    - 729 Route 3 N, Gambrills, MD (Leo's Vacation Center, OSW-3, Permit # AA-94-7975)
    - 738 B Route 3 N, Gambrills, MD (Elite Auto Body, OSW-4, Permit # AA-92-1914)
        - N.B. The well utilized by Elite Auto Body is located on the north-adjacent property - 727 MD Route 3 N, Gambrills, MD. The well tag could not be located to confirm the well permit number.

Results of the laboratory analysis indicate that all off-site water well samples contained non-detect concentrations for all analyzed compounds (see **Appendix D** and **Table 4**).

- In early April 2015, BPE established communication with Baldwin Investors, the owner of the property with the physical address of 743 MD Route 3 North, in a continued attempt to gain access to the property for the purpose of installing two (2) off-site monitoring wells. A draft access agreement, a copy of which is included as **Appendix E**, was subsequently

sent via certified mail to Baldwin Investors on April 15, 2015, with a request that Baldwin Investors respond no later than May 15, 2015. Copies of the request and draft access agreement were also sent to MDE. As of the date of this report, BPE has not received a response from Baldwin Investors.

5.0 CONCLUSIONS

Based on the data collected during the reporting period, the following conclusions are offered:

- Eight monitoring wells (MW-01 through MW-08) were installed within the top of the uppermost water-bearing zone at the SITE in 2013. Liquid level gauging data (provided in **Table 1**), collected since 2013, indicates that the top of the uppermost water-bearing zone is located between approximately 65′ and 72′ below TOC. Fluctuations in liquid level elevations gauged in the wells have been minor (generally within ±2').
- Liquid levels of perched water in the tank field are much higher, by approximately 60 feet, than water levels in the uppermost groundwater-bearing zone. The disparity in liquid level elevations between the TFMPs and the monitoring wells, coupled with site lithology, indicates that the liquid in the relatively permeable UST pit fill is perched atop the sandy silt layer of expected lower hydraulic conductivity.
- Water quality results from the TFMP are not indicative of groundwater quality at the SITE as the liquid in the tank pit is perched approximately 60 feet above the top of the uppermost water-bearing zone. Review of TFMP gauging results provided in **Table 1** indicate that LNAPL has not been detected in the TFMPs since the completion of the EFR event in October 2012.
- A palpable, pungent, sewer-like odor has been observed in water purged and sampled from the TFMPs during recent monitoring events. This odor suggests a potential failure or inadequate maintenance of the on-site septic system.
- 3Q15 groundwater quality data indicate that dissolved-phase GRO, DRO and MTBE are present at concentrations in excess of the MDE groundwater cleanup standards in the uppermost water-bearing zone at the SITE (see **Table 2b**, **Figure 4**, and **Appendix B**). Consistent with the previous seven (7) groundwater monitoring events, groundwater quality exceedances were chiefly confined to monitoring wells located east or southeast (down-gradient) of the UST pit and diesel dispensing island (MW-02, MW-03, MW-06

and MW-08). The highest concentrations of dissolved-phase contaminants were observed in monitoring well MW-06 during 3Q15, which is consistent with previous groundwater monitoring events.

- Time-series plots of certain PCOC, including GRO, DRO, Benzene, and MTBE for monitoring wells MW-02, MW-03, MW-06, and MW-08 are presented in **Figures 6, 7, 8,** and **9**, respectively.
- Review of the PCOC concentrations over time, as summarized in **Table 2** and depicted for certain wells in Figures **6**, **7**, **8**, and **9**, indicates the following:
    - The majority of the dissolved-phase contaminant mass is positioned to the southeast of the gasoline dispensing island and tank field, and east of the diesel dispensing island (i.e. monitoring wells MW-02, MW-03, MW-06, and MW-08);
    - MW-02: Benzene, MTBE, and DRO concentrations have exhibited relative stability (defined herein as detectable contaminant concentrations within a range of a factor of 3) since June 2013. Since June 2013, GRO concentrations have ranged from 0.26 mg/L (March 25, 2015) to 1 mg/L (September 24, 2014), indicating a range of concentrations greater than a factor of 3. However, all GRO concentrations in MW-02 have ranged from 0.52 mg/L (November 27, 2013) to 1 mg/L (September 24, 2014) with the exception of the March 25, 2015 result of 0.26 mg/L. Visual assessment of the GRO trendline for MW-02 (**Figure 6)** does not appear to support an increasing trend.
    - MW-03: Benzene, GRO, and DRO have exhibited non-detect concentrations since June 2013. MTBE concentrations at MW-03 have ranged from 0.0231 mg/L (September 17, 2015) to 0.093 mg/L (December 17, 2014). However, visual assessment of the MTBE trendline for MW-03 (**Figure 7)** does not appear to support an obvious increasing or decreasing trend.

- MW-06: MTBE concentrations have exhibited relative stability since November 2013. The range of GRO, DRO, and Benzene concentrations at MW-06 have individually varied by more than a factor of 3. However, visual assessment of the GRO, DRO, and Benzene trendlines for MW-06 (**Figure 8**) does not appear to support obvious increasing or decreasing trends.
- MW-08: GRO, DRO, and Benzene concentrations have exhibited relative stability or non-detect concentrations since November 2013. MTBE concentrations for MW-08 have ranged from 0.038 mg/L (June 19, 2015) to 0.15 mg/L (June 16, 2014). However, visual assessment of MTBE concentrations for MW-08 (**Figure 9**) does not appear to support an obvious increasing or decreasing trend.

- The uppermost-water bearing zone at the SITE is impacted by relatively low levels of petroleum-related compounds. Compounds which have been detected above their respective laboratory method detection limits exhibit concentrations that are well below the individual compound's effective solubility; accordingly, LNAPL is likely absent from the portion of the uppermost water-bearing zone that is monitored at the SITE.
- Hydrogeochemical data suggests an absence of an ongoing petroleum release at the SITE given 1) the absence of LNAPL in the uppermost water-bearing zone and the perched tank field water and 2) an absence of obvious increasing dissolved-phase contaminant concentration trends.
- Sampling of the SITE supply well and water wells at four (4) adjacent properties in December 2013 – January 2014 and again in September – October 2015 revealed non-detect concentrations of VOCs. These data support an incomplete exposure pathway for the receptors most likely to be impacted by the dissolved-phase contamination in the uppermost water-bearing zone at the SITE; namely, the SITE supply and drinking water wells at the adjacent, including downgradient, properties.

- BPE pursued access to the downgradient property located adjacent to the SITE throughout 2015, which included sending, via certified mail, a draft access agreement to Baldwin Investors for the purpose of installing and sampling two (2) offsite monitoring wells. Baldwin Investors has not provided access to install monitoring wells at their property located hydraulically downgradient of the SITE. Accordingly, the downgradient extent of the dissolved-phase contaminant impact in the uppermost water-bearing zone has not and cannot be fully assessed.

6.0 RECOMMENDATIONS

A suspected release of gasoline and/or diesel discovered at the SITE in 2012 appears to have impacted soil, perched water, and groundwater in the uppermost water-bearing zone. No contaminant concentrations in soil exceed their respective non-residential soil standards; however, certain petroleum-related compounds are present in perched water and groundwater in the uppermost water-bearing zone at concentrations in excess of their respective groundwater standards for type I and II aquifers. Dissolved-phase plume architecture has been partially defined, as access to the downgradient property for the purpose of installing monitoring wells and evaluating groundwater quality has not been granted by the property owner, currently Baldwin Investors. Potential receptors to the dissolved-phase impacts have been identified in the *March 14, 2014 Field Survey of Water Wells and Off-Site Water Well Sampling* report and the Risk Determination Evaluation included in the *July 31, 2015 2nd Quarter Progress Report*. As of the date of this report, there is no exposure to dissolved-phase contamination in the uppermost water-bearing zone identified at the SITE and the potential for exposure to occur is considered low.

Given the apparent absence of exposure to the dissolved-phase contamination in the uppermost water-bearing zone at the SITE and the stable contaminant concentration trends, BPE, on behalf of H&J BP Subway, requests that MDE grant permission to abandon the eight (8) permanent monitoring wells (MW-01 through MW-08) at the SITE and, following their closure, close Oil Control Program Case No. 2012-0067-AA.

According to the SITE owner, additional wastewater disposal infrastructure, including Best Available Technology (BAT), has been designed by Messick & Associates, Inc. of Annapolis, MD. Permit applications for the septic improvements have been submitted to the Anne Arundel County Department of Health, but have reportedly not yet been approved, per the SITE owner. The magnitude and extent of groundwater contamination present at the SITE as a result of the

current underperforming or malfunctioning septic system is unknown and was beyond the scope of this OCP investigation.

TABLES

BP Environmental, Inc.
P: 410.819.0919 / 302.629.6505

Table 1
Liquid Level Gauging Data
H+J-101-01

WELL NO.	MW-01*				MW-02*				MW-03*			
Permit No.	AA-11-0976				AA-11-0977				AA-11-0978			
ID (in)	4.00				2.00				2.00			
Well Depth (ft)	78.00				78.25				77.00			
Screen Length (ft)	20.00				20.00				20.00			
TOC Elev. (ft) [1]	98.75				100.03				99.61			
DATE	ELEV	DTN	DTW	ANT	ELEV	DTN	DTW	ANT	ELEV	DTN	DTW	ANT
06/10/13	32.06		66.69	NMT	31.69		68.34	NMT	31.54		68.07	NMT
06/27/13	32.05		66.70	NMT	31.77		68.26	NMT	31.66		67.95	NMT
07/16/13	31.81		66.94	NMT	31.52		68.51	NMT	31.39		68.22	NMT
08/21/13	31.64		67.11	NMT	31.35		68.68	NMT	31.21		68.40	NMT
09/25/13	31.41		67.34	NMT	31.11		68.92	NMT	30.98		68.63	NMT
10/31/13	31.24		67.51	NMT	30.92		69.11	NMT	30.82		68.79	NMT
11/26/13	30.93		67.82	NMT	30.63		69.40	NMT	30.51		69.10	NMT
12/09/13	30.86		67.89	NMT	30.58		69.45	NMT	30.46		69.15	NMT
01/20/14	30.59		68.16	NMT	30.25		69.78	NMT	30.15		69.46	NMT
02/20/14	30.49		68.26	NMT	30.15		69.88	NMT	29.98		69.63	NMT
03/31/14	30.79		67.96	NMT	30.49		69.54	NMT	30.35		69.26	NMT
04/21/14	31.19		67.56	NMT	30.86		69.17	NMT	30.78		68.83	NMT
05/20/14	31.54		67.21	NMT	31.22		68.81	NMT	31.08		68.53	NMT
06/16/14	31.96		66.79	NMT	31.65		68.38	NMT	31.48		68.13	NMT
07/28/14	32.63		66.12	NMT	32.32		67.71	NMT	32.15		67.46	NMT

Table 1
Liquid Level Gauging Data
H+J-101-01

WELL NO.	MW-01*				MW-02*				MW-03*			
Permit No.	AA-11-0976				AA-11-0977				AA-11-0978			
ID (in)	4.00				2.00				2.00			
Well Depth (ft)	78.00				78.25				77.00			
Screen Length (ft)	20.00				20.00				20.00			
TOC Elev. (ft) [1]	98.75				100.03				99.61			
DATE	ELEV	DTN	DTW	ANT	ELEV	DTN	DTW	ANT	ELEV	DTN	DTW	ANT
08/29/14	32.63		66.12	NMT	32.36		67.67	NMT	32.22		67.39	NMT
09/23/14	31.31		67.44	NMT	32.36		67.67	NMT	31.81		67.80	NMT
12/17/14	32.39		66.36	NMT	32.11		67.92	NMT	31.95		67.66	NMT
03/24/15	32.08		66.67	NMT	31.79		68.24	NMT	31.63		67.98	NMT
06/17/15	32.20		66.55	NMT	31.92		68.11	NMT	31.77		67.84	NMT
09/16/15	32.19		66.56	NMT	31.90		68.13	NMT	31.72		67.89	NMT

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Table 1
Liquid Level Gauging Data
H+J-101-01

WELL NO.	MW-04**				MW-05**				MW-06**				MW-07**				MW-08**			
Permit No.	AA-13-0217				AA-13-0218				AA-13-0219				AA-13-0245				AA-13-0246			
ID (in)	2.00				2.00				2.00				2.00				2.00			
Well Depth (ft)	77.00				78.00				79.00				77.00				77.00			
Screen Length (ft)	20.00				20.00				20.00				20.00				20.00			
TOC Elev. (ft) [1]	100.46				99.12				101.05				98.11				98.11			
DATE	ELEV	DTN	DTW	ANT	ELEV	DTN	DTW	ANT	ELEV	DTN	DTW	ANT	ELEV	DTN	DTW	ANT	ELEV	DTN	DTW	ANT
10/31/13	30.81		69.65	NMT	31.36		67.76	NMT	30.48		70.57	NMT	31.23		66.88	NMT	30.52		67.59	NMT
11/26/13	30.62		69.84	NMT	31.07		68.05	NMT	30.17		70.88	NMT	30.94		67.17	NMT	30.21		67.90	NMT
12/09/13	30.62		69.84	NMT	31.06		68.06	NMT	30.16		70.89	NMT	30.90		67.21	NMT	30.18		67.93	NMT
01/20/14	30.27		70.19	NMT	30.75		68.37	NMT	29.81		71.24	NMT	30.59		67.52	NMT	29.86		68.25	NMT
02/20/14	30.17		70.29	NMT	30.64		68.48	NMT	29.64		71.41	NMT	NG		NG	NMT	29.70		68.41	NMT
03/31/14	30.86		69.60	NMT	30.93		68.19	NMT	29.98		71.07	NMT	30.85		67.26	NMT	30.07		68.04	NMT
04/21/14	30.86		69.60	NMT	31.35		67.77	NMT	30.43		70.62	NMT	31.20		66.91	NMT	30.52		67.59	NMT
05/20/14	31.17		69.29	NMT	31.70		67.42	NMT	30.73		70.32	NMT	31.55		66.56	NMT	30.82		67.29	NMT
06/16/14	31.55		68.91	NMT	32.09		67.03	NMT	31.06		69.99	NMT	31.98		66.13	NMT	31.18		66.93	NMT
07/28/14	32.22		68.24	NMT	32.77		66.35	NMT	31.76		69.29	NMT	NG		NG	NMT	31.82		66.29	NMT
08/29/14	NG		NG	NMT	32.81		66.31	NMT	NG		NG	NMT	NG		NG	NMT	NG		NG	NMT
09/23/14	32.22		68.24	NMT	32.80		66.32	NMT	31.77		69.28	NMT	32.65		65.46	NMT	31.80		66.31	NMT
12/17/14	32.02		68.44	NMT	32.56		66.56	NMT	31.77		69.28	NMT	NG		NG	NMT	31.63		66.48	NMT
03/24/15	31.67		68.79	NMT	32.21		66.91	NMT	31.24		69.81	NMT	32.08		66.03	NMT	31.29		66.82	NMT
06/17/15	31.85		68.61	NMT	32.36		66.76	NMT	31.37		69.68	NMT	32.20		65.91	NMT	31.43		66.68	NMT
09/16/15	31.77		68.69	NMT	32.35		66.77	NMT	31.33		69.72	NMT	32.20		65.91	NMT	31.38		66.73	NMT

Table 1
Liquid Level Gauging Data
H+J-101-01

WELL NO.	TFMP-01				TFMP-02				TW-01				TW-03			
Permit No.	N/A				N/A				N/A				N/A			
ID (in)	4.00				4.00				1.00				1.00			
Well Depth (ft)	12.6				12.0				43.4				36.5			
Screen Length (ft)	Unknown				Unknown				10.00				10.00			
TOC Elev. (ft) [1]	99.57				98.94				N/A				N/A			
DATE	ELEV	DTN	DTW	ANT	ELEV	DTN	DTW	ANT	ELEV	DTN	DTW	ANT	ELEV	DTN	DTW	ANT
07/11/12	88.81	10.75	10.80	**0.05**	88.85	10.08	10.12	**0.04**	Not Installed				Not Installed			
09/28/12	88.98	10.59	10.60	**0.01**	89.01	9.92	9.95	**0.03**	Not Installed				Not Installed			
10/4/12[2]	88.94	10.63	10.64	**0.01**	88.96	9.98	9.99	**0.01**	Not Installed				Not Installed			
10/4/12[3]	88.91		10.66	NMT	88.92		10.02	NMT	Not Installed				Not Installed			
11/08/12			NG				NG		N/A		41.11	NMT	N/A		NW	
11/12/12	91.23		8.34	NMT	91.26		7.68	NMT	Decommissioned				Decommissioned			
12/06/12	91.32		8.25	NMT	91.38		7.56	NMT	Decommissioned				Decommissioned			
01/23/13	91.15		8.42	NMT	91.21		7.73	NMT	Decommissioned				Decommissioned			
02/07/13	90.99		8.58	NMT	91.05		7.89	NMT	Decommissioned				Decommissioned			
03/27/13	90.74		8.83	NMT	90.78		8.16	NMT	Decommissioned				Decommissioned			
04/30/13	90.09		9.48	NMT	90.13		8.81	NMT	Decommissioned				Decommissioned			
05/24/13	89.63		9.94	NMT	90.33		8.61	NMT	Decommissioned				Decommissioned			
06/10/13			NG				NG		Decommissioned				Decommissioned			
06/27/13	90.20		9.37	NMT	90.24		8.70	NMT	Decommissioned				Decommissioned			
07/16/13	91.27		8.30	NMT	91.36		7.58	NMT	Decommissioned				Decommissioned			
08/21/13	91.12		8.45	NMT	91.18		7.76	NMT	Decommissioned				Decommissioned			
09/25/13	90.51		9.06	NMT	90.55		8.39	NMT	Decommissioned				Decommissioned			
10/31/13	90.35		9.22	NMT	90.41		8.53	NMT	Decommissioned				Decommissioned			

Table 1
Liquid Level Gauging Data
H+J-101-01

WELL NO.	TFMP-01				TFMP-02				TW-01				TW-03			
Permit No.	N/A				N/A				N/A				N/A			
ID (in)	4.00				4.00				1.00				1.00			
Well Depth (ft)	12.6				12.0				43.4				36.5			
Screen Length (ft)	Unknown				Unknown				10.00				10.00			
TOC Elev. (ft) [1]	99.57				98.94				N/A				N/A			
DATE	ELEV	DTN	DTW	ANT	ELEV	DTN	DTW	ANT	ELEV	DTN	DTW	ANT	ELEV	DTN	DTW	ANT
11/26/13	89.68		9.89	NMT	89.72		9.22	NMT	Decommissioned				Decommissioned			
12/09/13	90.49		9.08	NMT	90.55		8.39	NMT	Decommissioned				Decommissioned			
01/20/14	90.55		9.02	NMT	90.59		8.35	NMT	Decommissioned				Decommissioned			
02/20/14	90.74		8.83	NMT	90.79		8.15	NMT	Decommissioned				Decommissioned			
03/31/14	91.56		8.01	NMT	91.63		7.31	NMT	Decommissioned				Decommissioned			
04/21/14	92.24		7.33	NMT	92.50		6.44	NMT	Decommissioned				Decommissioned			
05/20/14	92.13		7.44	NMT	92.19		6.75	NMT	Decommissioned				Decommissioned			
06/16/14	92.74		6.83	NMT	92.80		6.14	NMT	Decommissioned				Decommissioned			
07/28/14	91.01		8.56	NMT	91.13		7.81	NMT	Decommissioned				Decommissioned			
08/29/14	90.85		8.72	NMT	90.91		8.03	NMT	Decommissioned				Decommissioned			
09/23/14	90.10		9.47	NMT	90.15		8.79	NMT	Decommissioned				Decommissioned			
12/17/14	91.44		8.13	NMT	91.45		7.49	NMT	Decommissioned				Decommissioned			
03/24/15	92.29		7.28	NMT	92.33		6.61	NMT	Decommissioned				Decommissioned			
06/17/15	92.22		7.35	NMT	92.28		6.66	NMT	Decommissioned				Decommissioned			
09/16/15	89.91		9.66	NMT	89.96		8.98	NMT	Decommissioned				Decommissioned			

ID	=	Inner Diameter
TOC	=	Top of Casing
ELEV	=	Elevation
DTN	=	Depth to NAPL (ft below TOC)
DTW	=	Depth to Water (ft below TOC)
ANT	=	Apparent NAPL Thickness (ft)
NA	=	Not Applicable
NG	=	Well Not Gauged
NMT	=	No Measureable Thickness
NS	=	Not Sampled
NW	=	No Water
NAPL	=	Non-Aqueous Phase Liquid
LNAPL	=	Light Non-Aqueous Phase Liquid

*	=	Well installed May 24, 2013
**	=	Well installed October 7, 2013

1	=	Top-of-casing elevations surveyed to an arbritrary datum on December 4, 2013 by F Douglass Jones and Ass
2	=	Liquid levels gauged prior to the performance of an Enhanced Fluid Recovery Event
3	=	Liquid levels gauged following the performance of an Enhanced Fluid Recovery Event

n.b. Groundwater elevations corrected for measureable product thicknesses using the following equation:

Z(corrected) = Z(water-LNAPL interface) + (LNAPL thickness * LNAPL specific gravity)

where: Z(corrected) = the corrected groundwater elevation
Z(water-LNAPL interface) = the elevation of the water-LNAPL interface

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Table 2a
Summary of Groundwater Screening Results (TFMPs and TWs)
H+J-101-01

Well No.	Sampling Date	GRO	DRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	MTBE	Naphthalene
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
TFMP-01	11/12/2012	120	14	4.5	37	2.6	12	56.1	0.16	0.36 J
TD: 12.6'	11/27/2013	72	11	1.4	15	2.2	12	30.6	0.12	<0.50
WD: 4"	04/02/2014	74	22	0.78	14	2	9.4	26.18	<0.20	<1.0
SI: unknown	06/17/2014	54	16	0.49	11	1.8	8.5	21.79	0.085	0.41
	09/24/2014	41	16	0.47	4.2	1.8	8.8	15.27	<0.20	<1.0
	12/18/2014	38	7.8	0.33	0.23	1.7	8.4 E	10.66	0.058	0.33
	03/25/2015	52	14	1.1	7.6	1.8	9.3	19.8	0.094	0.35
	06/18/2015	34	15	0.58	1.4	1.3	7.1	10.38	<0.10	<0.50
	09/16/2015	30.6	12.3	0.413 Q	0.188 Q	1.49 Q	7.08 Q	9.171	0.0632 Q	0.348 Q
	10/19/2015	NA	NA	0.404	0.183	1.43	7.450	9.467	0.0476	<1.0
TFMP-02	11/12/2012	75	18 B, V9	1.3	17	2.3	11	31.6	0.058 J	0.39 J
TD: 12'	11/27/2013	37	9.8	1.3	9.3	1.2	6.7	18.5	<0.10	<0.50
WD: 4"	04/02/2014	30	20	<0.050	1.7	0.83	4.4	6.93	<0.050	<0.25
SI: unknown	06/17/2014	7.2	10	0.04	0.34	0.18	0.94	1.5	<0.010	0.053
	09/24/2014	20	9.6	0.15	1.7	0.68	4.1	6.63	0.038	0.12
	12/18/2014	20	5.7	0.074	1.0	0.52	2.5	4.094	0.017	0.15
	03/25/2015	18	13	0.096	0.96	0.22	1.3	2.576	<0.010	0.071
	06/18/2015	9.0	7.1	0.033	0.36	0.15	1.0	1.543	<0.010	0.050
	09/16/2015	11.0	10.4	0.117 Q	0.406 Q	0.228 Q	1.2 Q	1.951	0.0157 Q	0.0729 Q
	10/19/2015	NA	NA	0.119	0.509	0.340	1.850	2.818	0.0189	0.116
TW-01										
TD: 43.4'	11/08/2012	1.9	<0.10	0.039	0.15	0.016	0.075	0.28	3.1	0.0033 J
WD: 1"										
SI: 33.4-43.4'										

Bold values	=	Concentrations exceeded groundwater standards.
mg/L	=	Milligrams per Liter
GRO	=	TPH (GC/FID) Low Fraction
DRO	=	TPH (GC/FID) High Fraction
BTEX	=	Benzene, Toluene, Ethylbenzene and Xylenes
MTBE	=	Methyl tert-butyl ether
TD	=	Total Depth
WD	=	Well Diameter
SI	=	Screen Interval
NA	=	Not Analyzed
E	=	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
J	=	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
B	=	(EPA) - The indicated compound was found in the associated method blank as well as the laboratory sample.
Q	=	(ESC) - Sample was prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.
V9	=	(ESC) - Additional QC Info: Please refer to the Case Narrative provided with the report.

BP Environmental, Inc.
P: 410.819.0919 / 302.629.6505

Table 2b
Summary of Groundwater Quality Results
H+J-101-01

Well No.	Sampling Date	GRO	DRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	MTBE	Naphthalene
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
T1 - GW Tier I and II[1]		**-**	**-**	**0.005**	**1**	**0.7**	**10**	**-**	**0.02**	**0.00065**
T2 - GW TI and II Aq[2]		**0.047**	**0.047**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
MW-01	06/10/2013	<0.10	0.013 J	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.0011	<0.0050
TD: 78'	11/27/2013	<0.10	**0.11**	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.036**	<0.0050
WD: 4"	04/02/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	<0.0010	<0.0050
SI: 58-78'	06/17/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.0013	<0.0050
	09/24/2014	<0.10	<0.11	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	<0.0010	<0.0050
	12/17/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.0032	<0.0050
	03/25/2015	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	<0.0010	<0.0050
	06/18/2015	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.0061	<0.0050
	09/17/2015	<0.10 J3	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	<0.0010	<0.0050
MW-02	06/10/2013	**0.64**	**0.16**	<0.050	<0.25	<0.050	<0.15	<0.5	**1.1**	<0.25
TD: 79'	11/27/2013	**0.52**	**0.19**	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**1.1**	<0.0050
WD: 2"	04/01/2014	**0.7**	**0.2**	<0.050	<0.25	<0.050	<0.15	<0.5	**1**	<0.25
SI: 58.25-78.25'	06/17/2014	**0.55**	**0.35**	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.99**	<0.0050
	09/24/2014	**1**	**0.18**	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**1.6**	<0.0050
	12/17/2014	**0.83**	<0.10	<0.050	<0.25	<0.050	<0.15	<0.5	**1.3**	<0.25
	03/25/2015	**0.26**	**0.12**	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**1.4**	<0.0050
	06/19/2015	**0.93**	**0.24**	<0.025	<0.012	<0.025	<0.075	<0.137	**2.0**	<0.12
	09/17/2015	**0.728**	**0.161**	<0.025	<0.125	<0.025	<0.075	<0.25	**2.34**	<0.125

Table 2b
Summary of Groundwater Quality Results
H+J-101-01

Well No.	Sampling Date	GRO	DRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	MTBE	Naphthalene
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
T1 - GW Tier I and II[1]		**-**	**-**	**0.005**	**1**	**0.7**	**10**	**-**	**0.02**	**0.00065**
T2 - GW TI and II Aq[2]		**0.047**	**0.047**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
MW-03	06/10/2013	0.043 J	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.041**	<0.0050
TD: 77'	11/26/2013	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.03**	<0.0050
WD: 2"	04/01/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.049**	<0.0050
SI: 57-77'	06/16/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.087**	<0.0050
	09/24/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.031**	<0.0050
	12/17/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.093**	<0.0050
	03/25/2015	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.035**	<0.0050
	06/18/2015	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.035**	<0.0050
	09/17/2015	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.0231**	<0.0050
MW-04	11/26/2013	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.009	<0.0050
TD: 77'	04/01/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.0087	<0.0050
WD: 2"	06/16/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.0056	<0.0050
SI: 57-77'	09/23/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.0096	<0.0050
	12/17/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.013	<0.0050
	03/24/2015	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.017	<0.0050
	06/18/2015	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.018	<0.0050
	09/16/2015	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.017	<0.0050

Table 2b
Summary of Groundwater Quality Results
H+J-101-01

Well No.	Sampling Date	GRO	DRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	MTBE	Naphthalene
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
T1 - GW Tier I and II[1]		**-**	**-**	**0.005**	**1**	**0.7**	**10**	**-**	**0.02**	**0.00065**
T2 - GW TI and II Aq[2]		**0.047**	**0.047**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
MW-05	11/26/2013	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.0022	<0.0050
TD: 78'	04/01/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	<0.0010	<0.0050
WD: 2"	06/17/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	<0.0010	<0.0050
SI: 58-78'	09/23/2014	<0.10	**0.14**	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	<0.0010	<0.0050
	12/18/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	<0.0010	<0.0050
	03/25/2015	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	<0.0010	<0.0050
	06/18/2015	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	<0.0010	<0.0050
	09/17/2015	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	<0.0010	<0.0050
MW-06	11/26/2013	**2.3**	**0.53**	**0.069**	0.02	<0.10	0.19	0.379	**5.8**	**0.0053**
TD: 79'	04/01/2014	**7.1**	**1.2**	**0.09**	0.068	0.21	0.4	0.768	**7.4**	<0.025
WD: 2"	06/16/2014	**7.2**	**0.83**	**0.06**	0.48	0.042	0.93	1.512	**2.6**	<0.50
SI: 59-79'	09/23/2014	**2.1**	**0.33**	<0.10	<0.50	0.0073	<0.30	<0.9073	**2.5**	<0.50
	12/18/2014	**2.4**	**0.28**	<0.10	<0.50	<0.10	<0.30	<1	**3.1**	<0.50
	03/24/2015	**2.9**	**0.6**	**0.019**	<0.0050	0.0035	0.13	<0.1575	**3.6**	**0.0088**
	06/18/2015	**2.4**	**0.63**	**0.029**	<0.12	<0.025	0.13	<0.304	**5.4**	<0.12
	09/16/2015	**1.75**	**0.405**	<0.05	<0.25	<0.05	<0.15	<0.5	**2.980**	<0.25

Table 2b
Summary of Groundwater Quality Results
H+J-101-01

Well No.	Sampling Date	GRO	DRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	MTBE	Naphthalene
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
T1 - GW Tier I and II[1]		**-**	**-**	**0.005**	**1**	**0.7**	**10**	**-**	**0.02**	**0.00065**
T2 - GW TI and II Aq[2]		**0.047**	**0.047**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
MW-07	12/09/2013	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.009	<0.0050
TD: 77'	04/02/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.0064	<0.0050
WD: 2"	06/16/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.0087	<0.0050
SI: 57-77'	09/23/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.0092	<0.0050
	12/18/2014	NS	NS	NS	NS	NS	NS	NS	NS	NS
	03/25/2015	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.0096	<0.0050
	06/18/2015	NS	NS	NS	NS	NS	NS	NS	NS	NS
	09/16/2015	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	0.00553	<0.0050
MW-08	11/26/2013	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.071**	<0.0050
TD: 77'	03/31/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.12**	<0.0050
WD: 2"	06/16/2014	**0.12**	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.15**	<0.0050
SI: 57-77'	09/23/2014	<0.10	<0.11	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.068**	<0.0050
	12/18/2014	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.068**	<0.0050
	03/24/2015	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.048**	<0.0050
	06/19/2015	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.038**	<0.0050
	09/16/2015	<0.10	<0.10	<0.0010	<0.0050	<0.0010	<0.0030	<0.01	**0.0457**	<0.0050

Bold values	=	Concentrations exceeded groundwater standards.
mg/L	=	Milligrams per Liter
GRO	=	TPH (GC/FID) Low Fraction
DRO	=	TPH (GC/FID) High Fraction
BTEX	=	Benzene, Toluene, Ethylbenzene and Xylenes
MTBE	=	Methyl tert-butyl ether
TD	=	Total Depth
WD	=	Well Diameter
SI	=	Screen Interval
J	=	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	=	The associated batch QC was outside the eastablished quality control range for precision.
NS	=	Not Sampled
[1]	=	MD Table 1 Groundwater Tier I and II Aquifer Standards, March 2008
[2]	=	MD Table 2 MDE Groundwater Type I and II Aquifers

Table 3
Summary of Site Supply Well Quality Results
H+J-101-01

Lab Sample ID				L789661-01	L772539-01	L756501-01	L740595-01	L724155-01
Client Sample ID				AA-94-0521	AA-94-0521	AA-94-0521	AA-94-0521	AA-94-0521
Collect Date				09/16/2015	06/18/2015	03/29/2015	12/22/2014	09/24/2014
Method	Parameter	Units	DW STD	Value	Value	Value	Value	Value
524.2	Benzene	mg/l	0.005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Carbon tetrachloride	mg/l	0.005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,4-Dichlorobenzene	mg/l	0.075	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,2-Dichloroethane	mg/l	0.005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,1-Dichloroethene	mg/l	0.007	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,1,1-Trichloroethane	mg/l	0.2	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Trichloroethene	mg/l	0.005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Vinyl chloride	mg/l	0.002	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,2,4-Trichlorobenzene	mg/l	0.07	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	cis-1,2-Dichloroethene	mg/l	0.07	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Xylenes, Total	mg/l	10	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Methylene chloride	mg/l	0.005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,2-Dichlorobenzene	mg/l	0.6	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	trans-1,2-Dichloroethene	mg/l	0.1	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,2-Dichloropropane	mg/l	0.005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,1,2-Trichloroethane	mg/l	0.005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Tetrachloroethene	mg/l	0.005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Chlorobenzene	mg/l	0.1	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Toluene	mg/l	1	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Ethylbenzene	mg/l	0.7	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Styrene	mg/l	0.1	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Bromobenzene	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Bromodichloromethane	mg/l	0.08	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050

Table 3
Summary of Site Supply Well Quality Results
H+J-101-01

Lab Sample ID				L789661-01	L772539-01	L756501-01	L740595-01	L724155-01
Client Sample ID				AA-94-0521	AA-94-0521	AA-94-0521	AA-94-0521	AA-94-0521
Collect Date				09/16/2015	06/18/2015	03/29/2015	12/22/2014	09/24/2014
Method	**Parameter**	**Units**	**DW STD**	**Value**	**Value**	**Value**	**Value**	**Value**
524.2	Bromoform	mg/l	0.08	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Bromomethane	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Chlorodibromomethane	mg/l	0.08	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Chloroethane	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Chloroform	mg/l	0.08	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Chloromethane	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	2-Chlorotoluene	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	4-Chlorotoluene	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Dibromomethane	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Methyl tert-butyl ether	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,3-Dichlorobenzene	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,1-Dichloroethane	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,3-Dichloropropane	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	2,2-Dichloropropane	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,1-Dichloropropene	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,3-Dichloropropene	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,1,1,2-	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,1,2,2-	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,2,3-Trichloropropane	mg/l		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Naphthalene	mg/l		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

Table 3
Summary of Site Supply Well Quality Results
H+J-101-01

Lab Sample ID				L679105-01	L679105-01	L673519-01	L640448-01
Client Sample ID				AA-94-0521	AA-94-0521	AA-94-0521	AA-94-0521
Collect Date				06/24/2014	01/20/2014	12/11/2013	06/10/2013
Method	Parameter	Units	DW STD	Value	Value	Value	Value
524.2	Benzene	mg/l	0.005	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Carbon tetrachloride	mg/l	0.005	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,4-Dichlorobenzene	mg/l	0.075	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,2-Dichloroethane	mg/l	0.005	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,1-Dichloroethene	mg/l	0.007	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,1,1-Trichloroethane	mg/l	0.2	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Trichloroethene	mg/l	0.005	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Vinyl chloride	mg/l	0.002	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,2,4-Trichlorobenzene	mg/l	0.07	<0.00050	<0.00050	<0.00050	<0.00050
524.2	cis-1,2-Dichloroethene	mg/l	0.07	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Xylenes, Total	mg/l	10	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Methylene chloride	mg/l	0.005	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,2-Dichlorobenzene	mg/l	0.6	<0.00050	<0.00050	<0.00050	<0.00050
524.2	trans-1,2-Dichloroethene	mg/l	0.1	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,2-Dichloropropane	mg/l	0.005	<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,1,2-Trichloroethane	mg/l	0.005	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Tetrachloroethene	mg/l	0.005	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Chlorobenzene	mg/l	0.1	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Toluene	mg/l	1	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Ethylbenzene	mg/l	0.7	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Styrene	mg/l	0.1	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Bromobenzene	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	Bromodichloromethane	mg/l	0.08	<0.00050	<0.00050	<0.00050	<0.00050

Table 3
Summary of Site Supply Well Quality Results
H+J-101-01

Lab Sample ID				L679105-01	L679105-01	L673519-01	L640448-01
Client Sample ID				AA-94-0521	AA-94-0521	AA-94-0521	AA-94-0521
Collect Date				06/24/2014	01/20/2014	12/11/2013	06/10/2013
Method	Parameter	Units	DW STD	Value	Value	Value	Value
524.2	Bromoform	mg/l	0.08	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Bromomethane	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	Chlorodibromomethane	mg/l	0.08	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Chloroethane	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	Chloroform	mg/l	0.08	<0.00050	<0.00050	<0.00050	<0.00050
524.2	Chloromethane	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	2-Chlorotoluene	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	4-Chlorotoluene	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	Dibromomethane	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	Methyl tert-butyl ether	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,3-Dichlorobenzene	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,1-Dichloroethane	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,3-Dichloropropane	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	2,2-Dichloropropane	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,1-Dichloropropene	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,3-Dichloropropene	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,1,1,2-	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,1,2,2-	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	1,2,3-Trichloropropane	mg/l		<0.00050	<0.00050	<0.00050	<0.00050
524.2	Naphthalene	mg/l		<0.0050	<0.0050	N/A	N/A

Legend

mg/l	=	Milligrams per liter
NA	=	Not analyzed
DW STD	=	Drinking Water Standard (DW STD) is the Environmental Protection Agency (EPA) Maximum Contaminant Le

Table 4
Summary of Off-Site Supply Well Quality Results
H+J-101-01

Lab Sample ID				L795714-01	L677212-01	L789658-02	L677214-01
Client Sample ID				743 RTE 3N	743 MD RTE 3 N	745 MD ROUTE 3	745 MD RTE 3 N
Collect Date				10/19/2015	01/08/2014	09/16/2015	01/08/2014
Method	Parameter	Units	DW STD	Value	Value	Value	Value
524.2	Benzene	mg/l	0.005	<0.00050	<0.00050	<0.000500	<0.00050
524.2	Carbon tetrachloride	mg/l	0.005	<0.00050	<0.00050	<0.000500	<0.00050
524.2	1,4-Dichlorobenzene	mg/l	0.075	<0.00050	<0.00050	<0.000500	<0.00050
524.2	1,2-Dichloroethane	mg/l	0.005	<0.00050	<0.00050	<0.000500	<0.00050
524.2	1,1-Dichloroethene	mg/l	0.007	<0.00050	<0.00050	<0.000500	<0.00050
524.2	1,1,1-Trichloroethane	mg/l	0.2	<0.00050	<0.00050	<0.000500	<0.00050
524.2	Trichloroethene	mg/l	0.005	<0.00050	<0.00050	<0.000500	<0.00050
524.2	Vinyl chloride	mg/l	0.002	<0.00050	<0.00050	<0.000500	<0.00050
524.2	1,2,4-Trichlorobenzene	mg/l	0.07	<0.00050	<0.00050	<0.000500	<0.00050
524.2	cis-1,2-Dichloroethene	mg/l	0.07	<0.00050	<0.00050	<0.000500	<0.00050
524.2	Xylenes, Total	mg/l	10	<0.00050	<0.00050	<0.000500	<0.00050
524.2	Methylene chloride	mg/l	0.005	<0.00050	<0.00050	<0.000500	<0.00050
524.2	1,2-Dichlorobenzene	mg/l	0.6	<0.00050	<0.00050	<0.000500	<0.00050
524.2	trans-1,2-Dichloroethene	mg/l	0.1	<0.00050	<0.00050	<0.000500	<0.00050
524.2	1,2-Dichloropropane	mg/l	0.005	<0.00050	<0.00050	<0.000500	<0.00050
524.2	1,1,2-Trichloroethane	mg/l	0.005	<0.00050	<0.00050	<0.000500	<0.00050
524.2	Tetrachloroethene	mg/l	0.005	<0.00050	<0.00050	<0.000500	<0.00050
524.2	Chlorobenzene	mg/l	0.1	<0.00050	<0.00050	<0.000500	<0.00050
524.2	Toluene	mg/l	1	<0.00050	<0.00050	<0.000500	<0.00050
524.2	Ethylbenzene	mg/l	0.7	<0.00050	<0.00050	<0.000500	<0.00050
524.2	Styrene	mg/l	0.1	<0.00050	<0.00050	<0.000500	<0.00050
524.2	Bromobenzene	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	Bromodichloromethane	mg/l	0.08	<0.00050	<0.00050	<0.000500	<0.00050

Table 4
Summary of Off-Site Supply Well Quality Results
H+J-101-01

Lab Sample ID				L795714-01	L677212-01	L789658-02	L677214-01
Client Sample ID				743 RTE 3N	743 MD RTE 3 N	745 MD ROUTE 3	745 MD RTE 3 N
Collect Date				10/19/2015	01/08/2014	09/16/2015	01/08/2014
Method	Parameter	Units	DW STD	Value	Value	Value	Value
524.2	Bromoform	mg/l	0.08	<0.00050	<0.00050	<0.000500	<0.00050
524.2	Bromomethane	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	Chlorodibromomethane	mg/l	0.08	<0.00050	<0.00050	<0.000500	<0.00050
524.2	Chloroethane	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	Chloroform	mg/l	0.08	<0.00050	<0.00050	<0.000500	<0.00050
524.2	Chloromethane	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	2-Chlorotoluene	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	4-Chlorotoluene	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	Dibromomethane	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	Methyl tert-butyl ether	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	1,3-Dichlorobenzene	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	1,1-Dichloroethane	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	1,3-Dichloropropane	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	2,2-Dichloropropane	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	1,1-Dichloropropene	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	1,3-Dichloropropene	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	1,1,1,2-	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	1,1,2,2-	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	1,2,3-Trichloropropane	mg/l		<0.00050	<0.00050	<0.000500	<0.00050
524.2	Naphthalene	mg/l		<0.00500	NA	<0.00500	NA

Table 4
Summary of Off-Site Supply Well Quality Results
H+J-101-01

Lab Sample ID				L789658-03	L677215-01	L789658-01	L679106-01
Client Sample ID				AA-94-7975	AA-94-7975	738 B ROUTE 3	738 B ROUTE 3
Collect Date				09/16/2015	01/08/2014	09/16/2015	01/20/2014
Method	Parameter	Units	DW STD	Value	Value	Value	Value
524.2	Benzene	mg/l	0.005	<0.000500	<0.00050	<0.000500	<0.00050
524.2	Carbon tetrachloride	mg/l	0.005	<0.000500	<0.00050	<0.000500	<0.00050
524.2	1,4-Dichlorobenzene	mg/l	0.075	<0.000500	<0.00050	<0.000500	<0.00050
524.2	1,2-Dichloroethane	mg/l	0.005	<0.000500	<0.00050	<0.000500	<0.00050
524.2	1,1-Dichloroethene	mg/l	0.007	<0.000500	<0.00050	<0.000500	<0.00050
524.2	1,1,1-Trichloroethane	mg/l	0.2	<0.000500	<0.00050	<0.000500	<0.00050
524.2	Trichloroethene	mg/l	0.005	<0.000500	<0.00050	<0.000500	<0.00050
524.2	Vinyl chloride	mg/l	0.002	<0.000500	<0.00050	<0.000500	<0.00050
524.2	1,2,4-Trichlorobenzene	mg/l	0.07	<0.000500	<0.00050	<0.000500	<0.00050
524.2	cis-1,2-Dichloroethene	mg/l	0.07	<0.000500	<0.00050	<0.000500	<0.00050
524.2	Xylenes, Total	mg/l	10	<0.000500	<0.00050	<0.000500	<0.00050
524.2	Methylene chloride	mg/l	0.005	<0.000500	<0.00050	<0.000500	<0.00050
524.2	1,2-Dichlorobenzene	mg/l	0.6	<0.000500	<0.00050	<0.000500	<0.00050
524.2	trans-1,2-Dichloroethene	mg/l	0.1	<0.000500	<0.00050	<0.000500	<0.00050
524.2	1,2-Dichloropropane	mg/l	0.005	<0.000500	<0.00050	<0.000500	<0.00050
524.2	1,1,2-Trichloroethane	mg/l	0.005	<0.000500	<0.00050	<0.000500	<0.00050
524.2	Tetrachloroethene	mg/l	0.005	<0.000500	<0.00050	<0.000500	<0.00050
524.2	Chlorobenzene	mg/l	0.1	<0.000500	<0.00050	<0.000500	<0.00050
524.2	Toluene	mg/l	1	<0.000500	<0.00050	<0.000500	<0.00050
524.2	Ethylbenzene	mg/l	0.7	<0.000500	<0.00050	<0.000500	<0.00050
524.2	Styrene	mg/l	0.1	<0.000500	<0.00050	<0.000500	<0.00050
524.2	Bromobenzene	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	Bromodichloromethane	mg/l	0.08	<0.000500	<0.00050	<0.000500	<0.00050

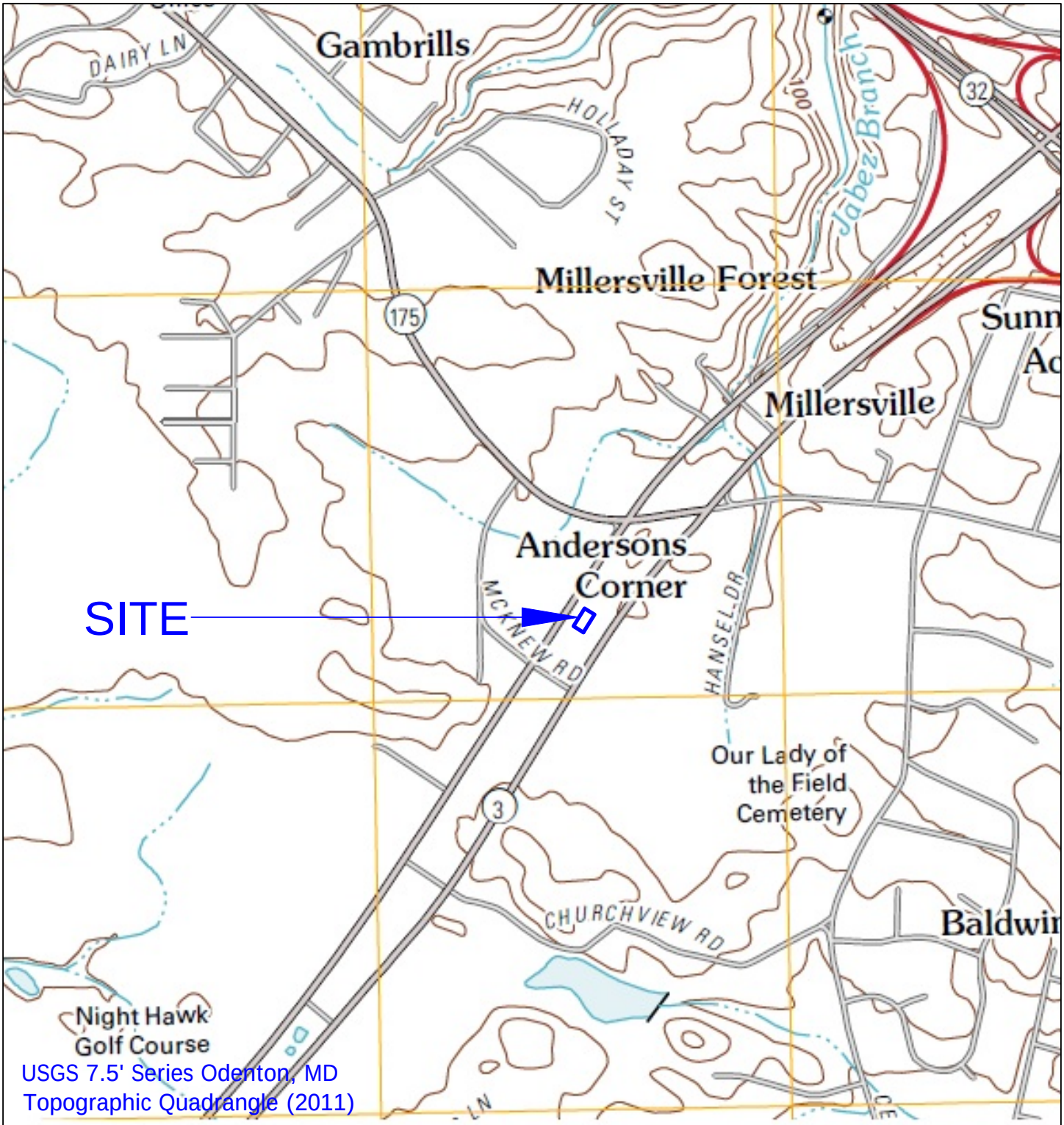
Table 4
Summary of Off-Site Supply Well Quality Results
H+J-101-01

Lab Sample ID				L789658-03	L677215-01	L789658-01	L679106-01
Client Sample ID				AA-94-7975	AA-94-7975	738 B ROUTE 3	738 B ROUTE 3
Collect Date				09/16/2015	01/08/2014	09/16/2015	01/20/2014
Method	Parameter	Units	DW STD	Value	Value	Value	Value
524.2	Bromoform	mg/l	0.08	<0.000500	<0.00050	<0.000500	<0.00050
524.2	Bromomethane	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	Chlorodibromomethane	mg/l	0.08	<0.000500	<0.00050	<0.000500	<0.00050
524.2	Chloroethane	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	Chloroform	mg/l	0.08	<0.000500	<0.00050	<0.000500	<0.00050
524.2	Chloromethane	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	2-Chlorotoluene	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	4-Chlorotoluene	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	Dibromomethane	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	Methyl tert-butyl ether	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	1,3-Dichlorobenzene	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	1,1-Dichloroethane	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	1,3-Dichloropropane	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	2,2-Dichloropropane	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	1,1-Dichloropropene	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	1,3-Dichloropropene	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	1,1,1,2-	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	1,1,2,2-	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	1,2,3-Trichloropropane	mg/l		<0.000500	<0.00050	<0.000500	<0.00050
524.2	Naphthalene	mg/l		<0.00500	NA	<0.00500	NA

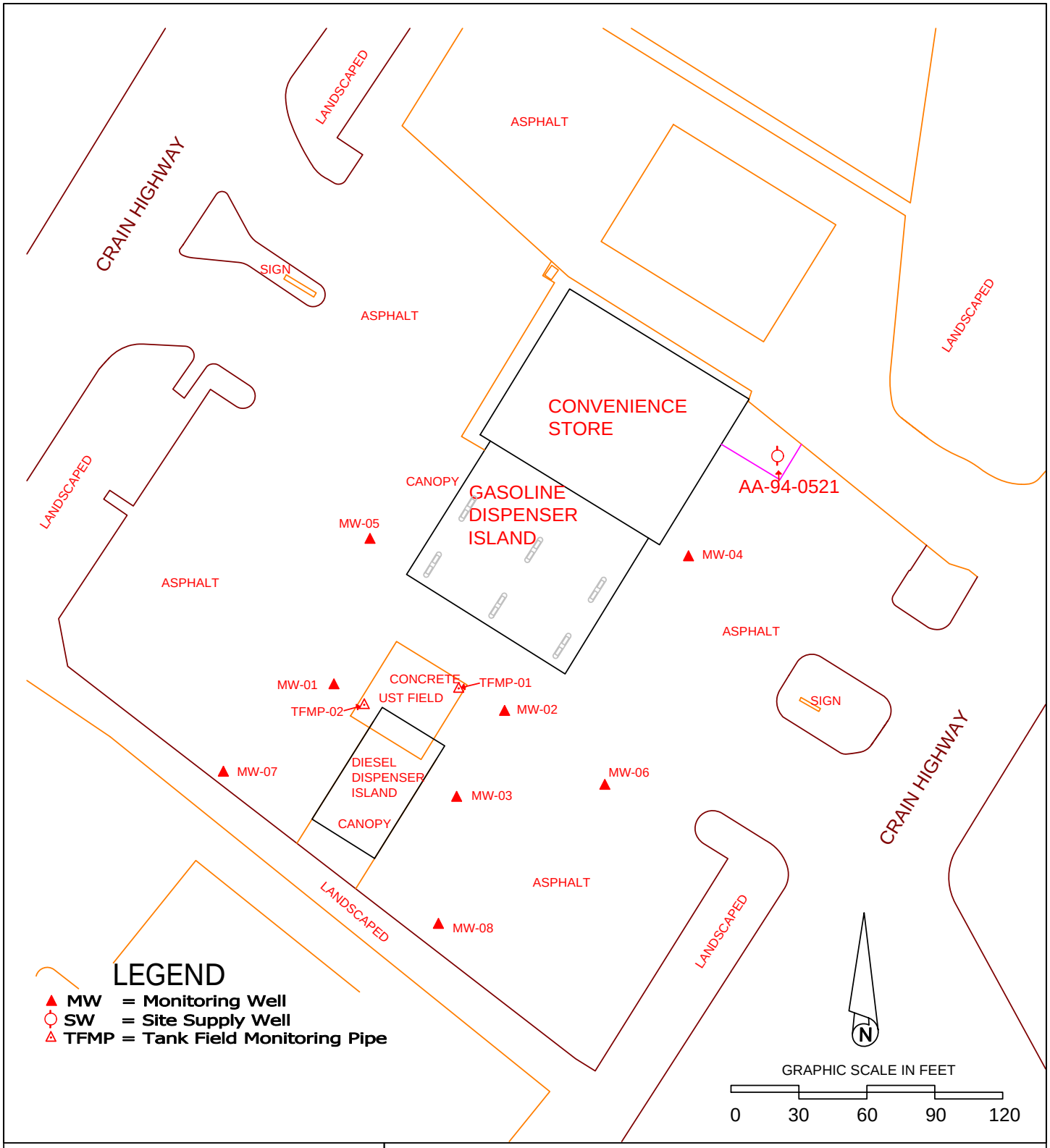
Legend

Bold values	=	Concentration exceeds applicable groundwater standard.
mg/l	=	Milligrams per liter
DW STD	=	Drinking Water Standard (DW STD) is the Environmental Protection Agency (EPA) Maximum Contaminant Level

FIGURES



Prepared For: H&J AMOCO, INC. 738 CRAIN HIGHWAY GAMBRILLS, MD	BP Environmental, Inc. 8615 Commerce Drive, Unit One Easton, Maryland 21601	
Site: H&J BP SUBWAY 738 CRAIN HIGHWAY GAMBRILLS, MD	Date:07/17/12 Revision Date:12/26/12 Project:H&J-101-01 Drafted by FB	FIGURE 1 TOPOGRAPHIC MAP SCALE: 1" = 2000 FT



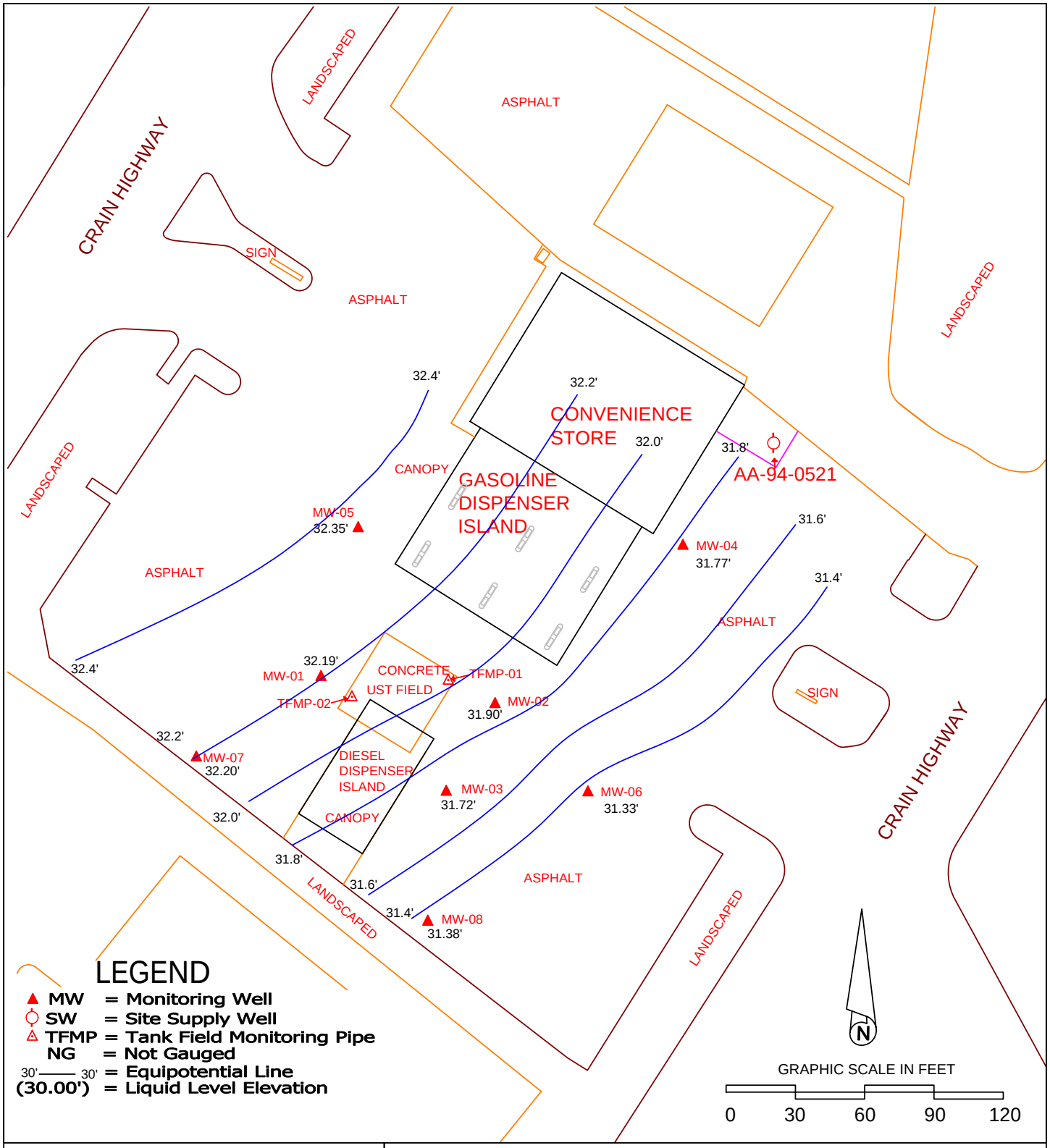
Prepared For:
H&J AMOCO, INC.
738 CRAIN HIGHWAY
GAMBRILLS, MD

BP Environmental, Inc.
8615 Commerce Drive, Unit One
Easton, Maryland 21601

Site:
H&J BP SUBWAY
738 CRAIN HIGHWAY
GAMBRILLS, MD

Date:07/17/12
Revision Date:02/21/14
Project:H&J-101-01
Drafted by:JP

FIGURE 2- SITE MAP
SCALE 1" = 59 FT



Prepared For:
H&J AMOCO, INC.
738 CRAIN HIGHWAY
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BP Environmental, Inc.
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Easton, Maryland 21601

Site:
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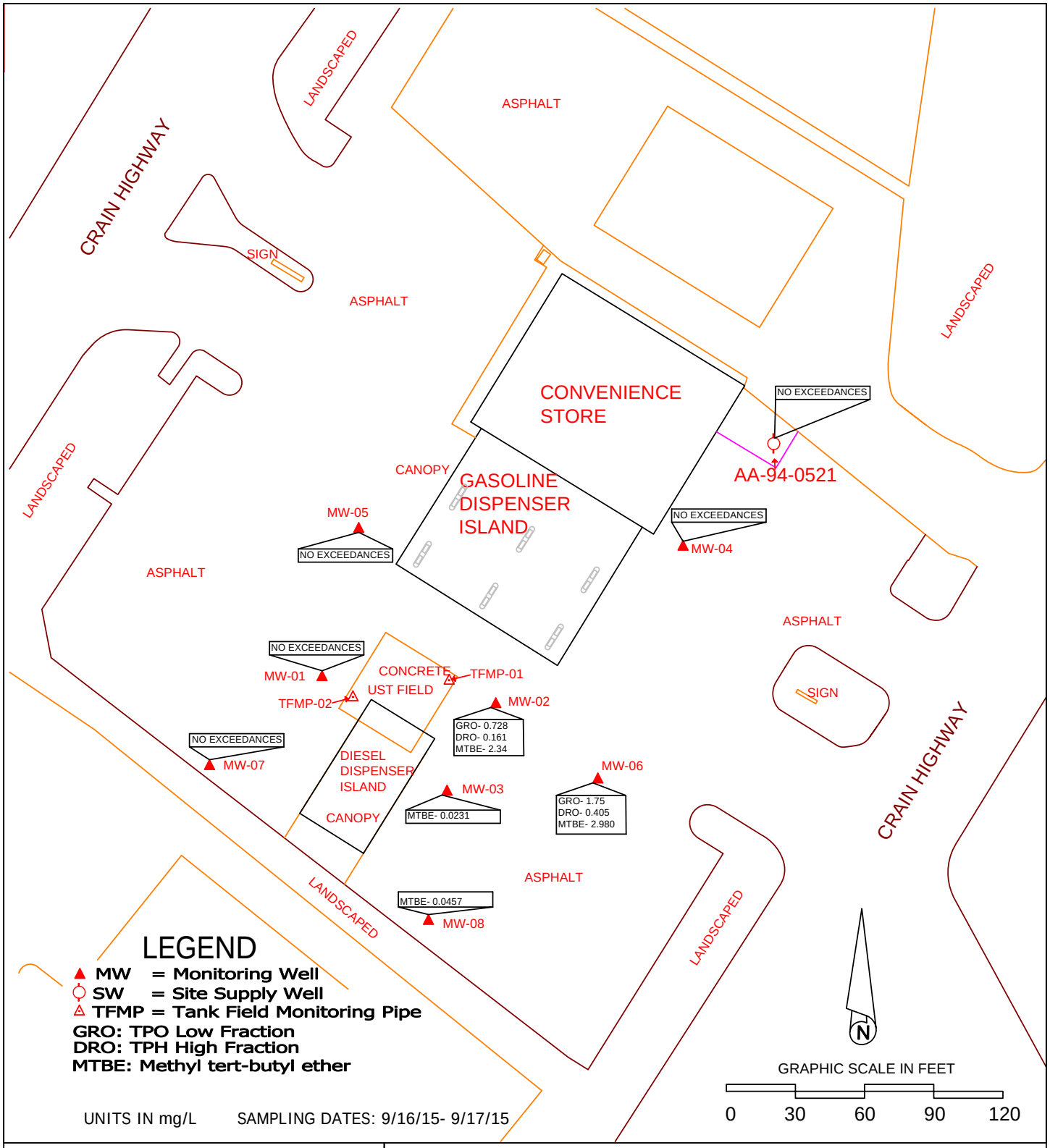
738 CRAIN HIGHWAY
GAMBRILLS, MD

Date:07/17/12
Revision Date:10/06/15
Project:H&J-101-01
Drafted by:JP

FIGURE 3- POTENTIOMETRIC SURFACE MAP
SEPTEMBER 17, 2015
SCALE 1" = 64 FT



Prepared For:
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GAMBRILLS, MD

BP Environmental, Inc.
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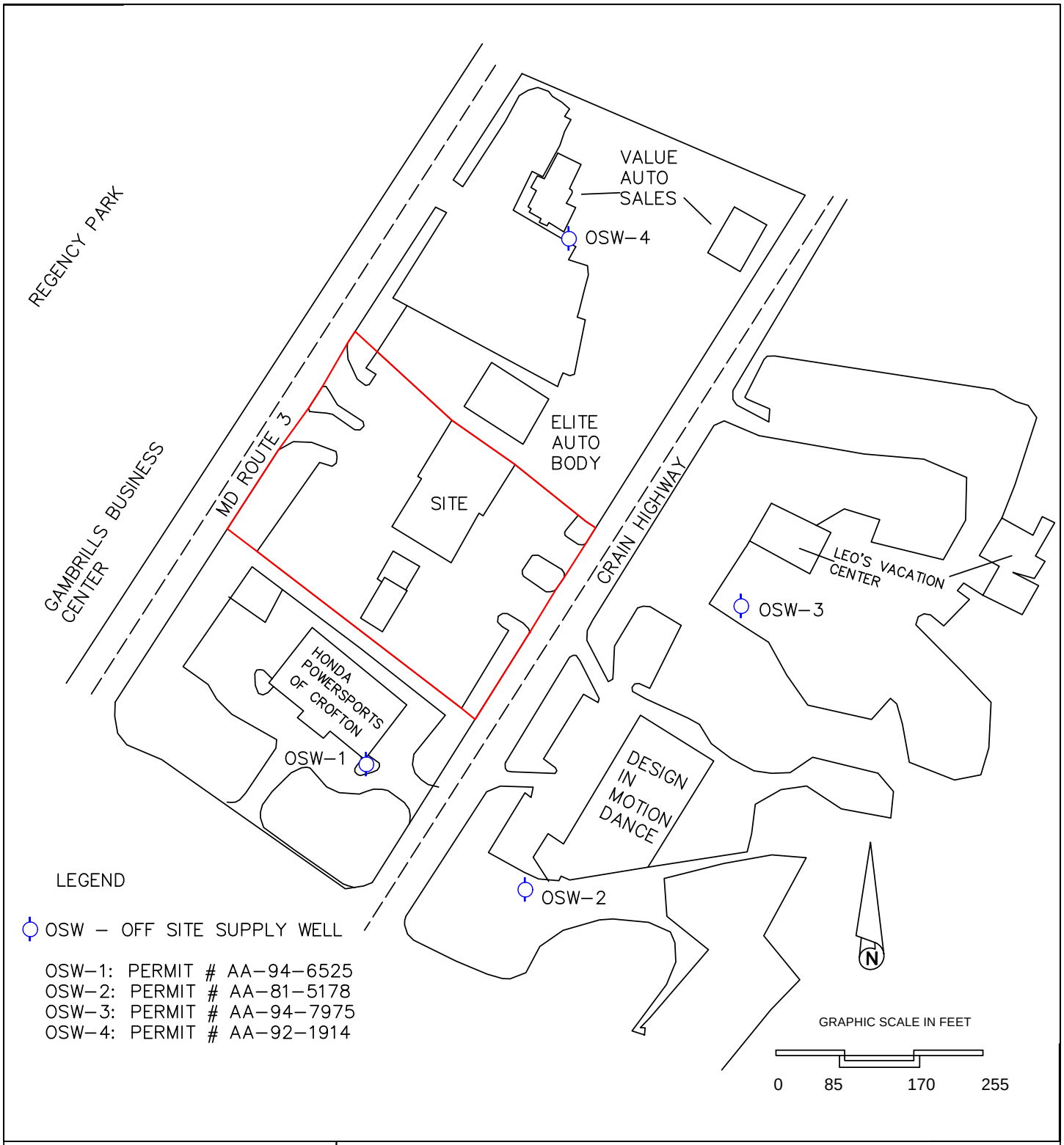
Easton, Maryland 21601

Site:
H&J BP SUBWAY
738 CRAIN HIGHWAY
GAMBRILLS, MD

Date:07/17/12
Revision Date:10/06/15
Project:H&J-101-01
Drafted by:JP

FIGURE 4- SITE MAP WITH GROUNDWATER QUALITY EXCEEDANCES
SCALE 1" = 64 FT



Prepared For: H&J AMOCO, INC. 738 CRAIN HIGHWAY GAMBRILLS, MD	BP Environmental, Inc. 8615 Commerce Drive, Unit One Easton, Maryland 21601	
Site: H&J BP SUBWAY 738 CRAIN HIGHWAY GAMBRILLS, MD	Date:07/17/12 Revision Date:2/25/14 Project:H&J-101-01 Drafted by:JP	FIGURE 5 - OFF-SITE WATER WELL SAMPLING MAP SCALE 1" = 170 FT

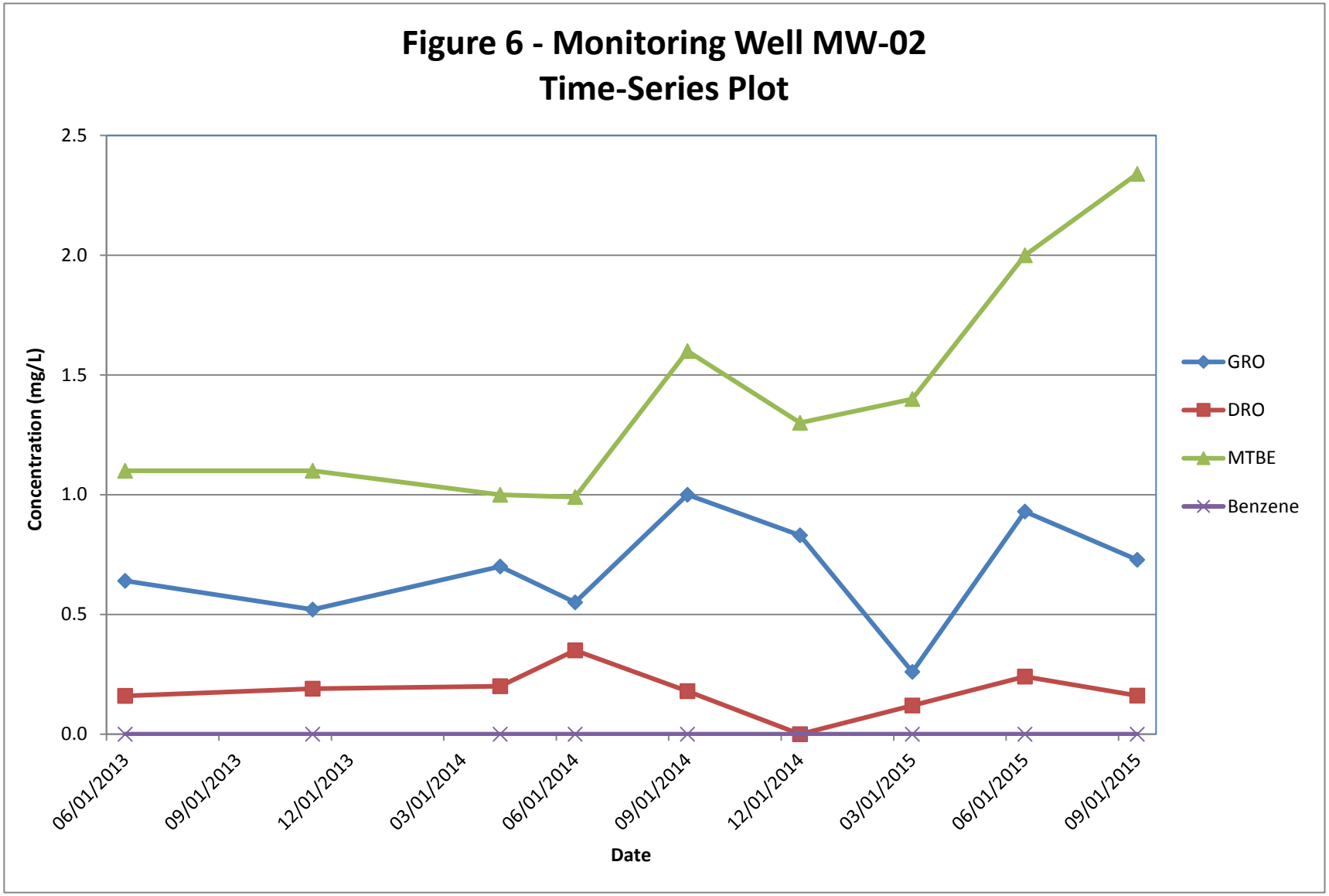


Figure 6 - Monitoring Well MW-02
Time-Series Plot
Concentration (mg/L)
2.5
2.0
1.5
1.0
0.5
0.0
06/01/2013
09/01/2013
12/01/2013
03/01/2014
06/01/2014
09/01/2014
12/01/2014
03/01/2015
06/01/2015
09/01/2015
Date
GRO
DRO
MTBE
Benzene

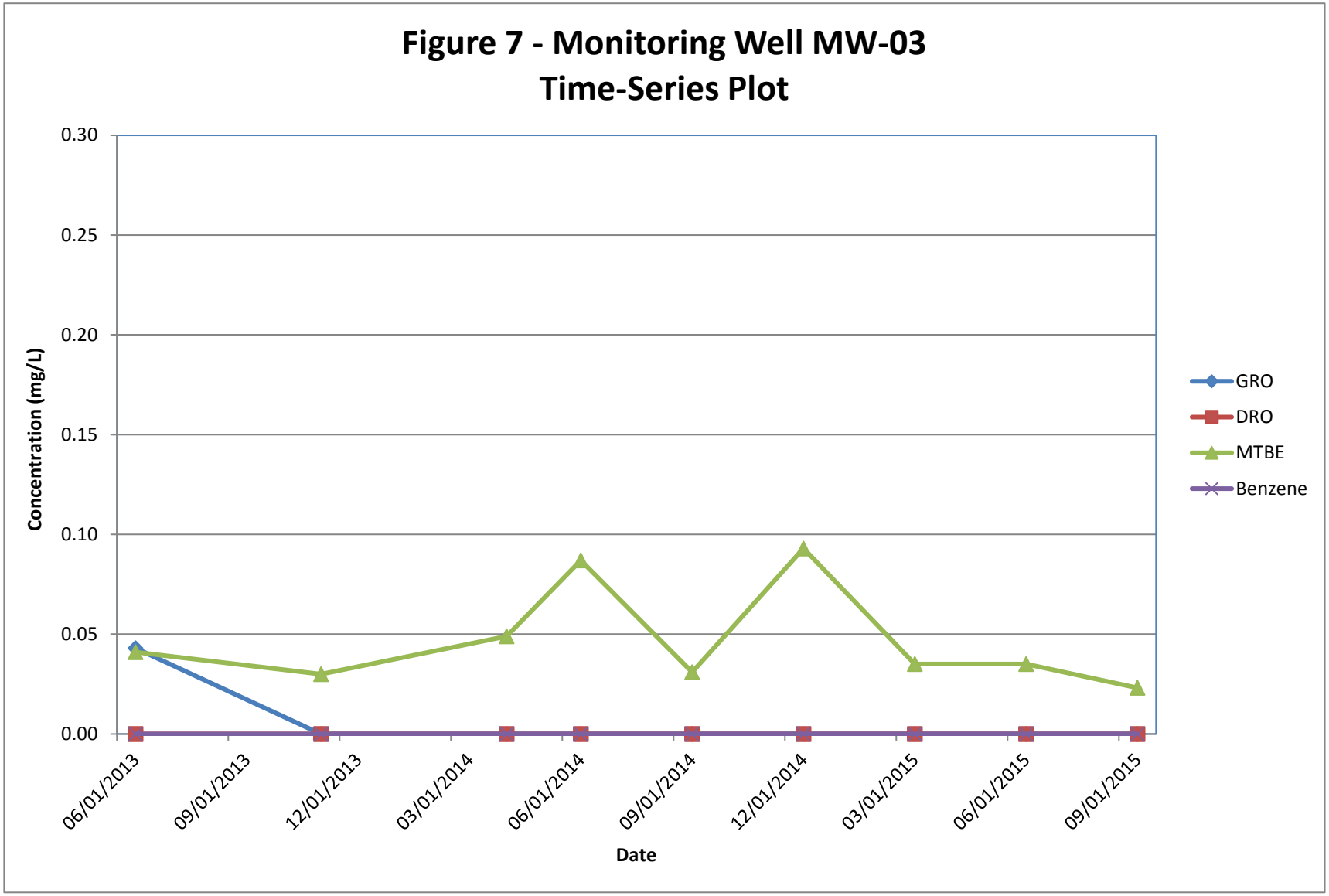


Figure 7 - Monitoring Well MW-03
Time-Series Plot
Concentration (mg/L)
0.30
0.25
0.20
0.15
0.10
0.05
0.00
06/01/2013
09/01/2013
12/01/2013
03/01/2014
06/01/2014
09/01/2014
12/01/2014
03/01/2015
06/01/2015
09/01/2015
Date
GRO
DRO
MTBE
Benzene

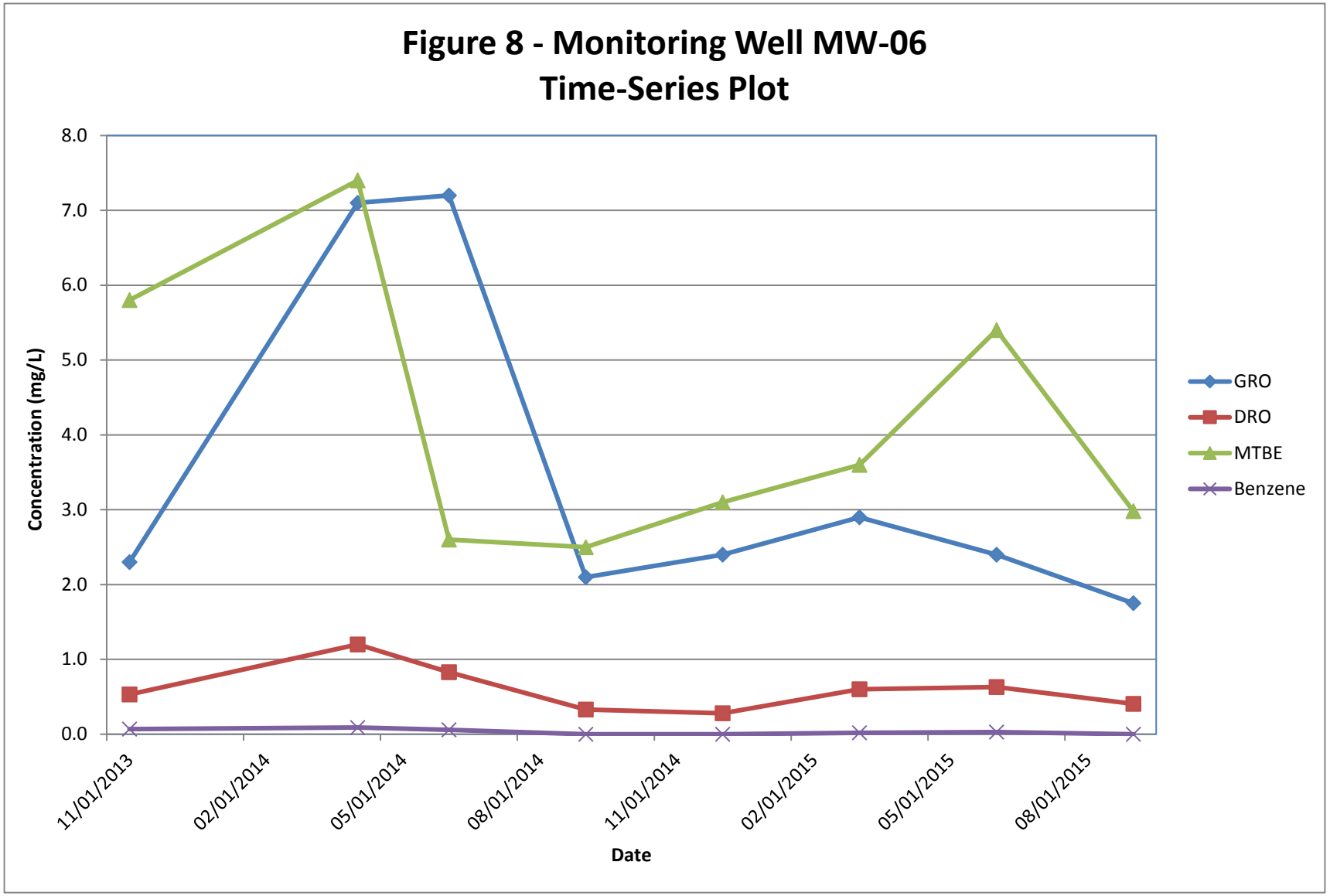


Figure 8 - Monitoring Well MW-06
Time-Series Plot
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Concentration (mg/L)
11/01/2013
02/01/2014
05/01/2014
08/01/2014
11/01/2014
02/01/2015
05/01/2015
08/01/2015
Date
GRO
DRO
MTBE
Benzene

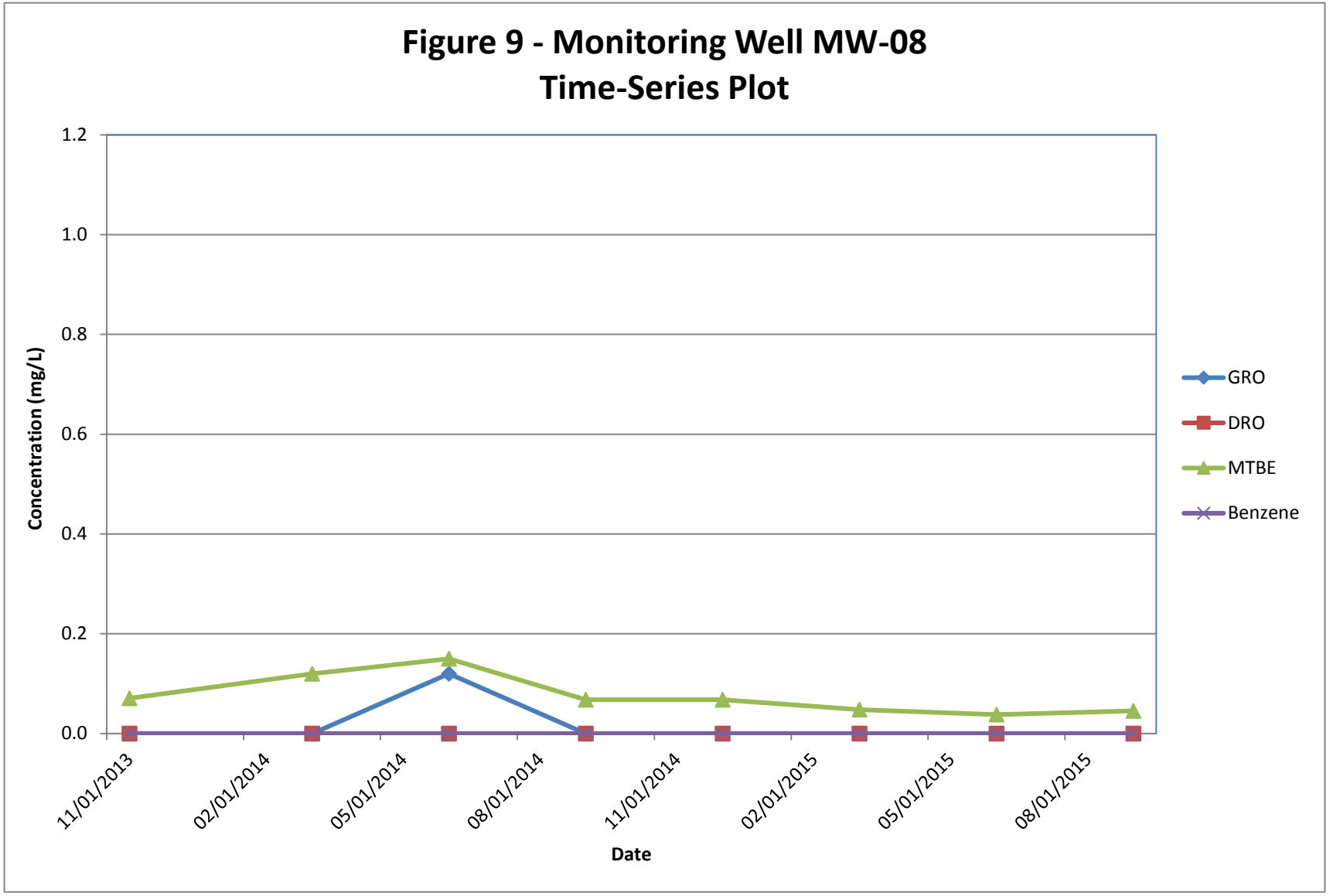


Figure 9 - Monitoring Well MW-08
Time-Series Plot
Concentration (mg/L)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
11/01/2013
02/01/2014
05/01/2014
08/01/2014
11/01/2014
02/01/2015
05/01/2015
08/01/2015
Date
GRO
DRO
MTBE
Benzene

APPENDICES

APPENDIX A

ANALYTICAL REPORT

October 02, 2015

BP Environmental

Sample Delivery Group:	L789666
Samples Received:	09/19/2015
Project Number:	H&J-101-01
Description:	Quarterly GW Monitoring
Site:	H&J Amoco, Inc.
Report To:	Ms. Lou Ann Parson 8615 Commerce Drive, Unit One Easton, MD 21601

Entire Report Reviewed By:

Craig Cothron
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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TFMP-01 L789666-01 GW

Collected by	Collected date/time	Received date/time
Gary Lasako	09/16/15 14:40	09/19/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG816496	5	09/21/15 10:23	09/24/15 03:27	JNS
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG816800	100	09/24/15 06:30	09/24/15 06:30	MCB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG818917	25	10/01/15 16:01	10/01/15 16:01	KLO

TFMP-02 L789666-02 GW

Collected by	Collected date/time	Received date/time
Gary Lasako	09/16/15 14:15	09/19/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG816496	5	09/21/15 10:23	09/24/15 03:47	JNS
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG816800	5	09/24/15 06:52	09/24/15 06:52	MCB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG818917	5	10/01/15 16:24	10/01/15 16:24	KLO

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Craig Cothron
Technical Service Representative

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

ESC Sample ID	Project Sample ID	Method
L789666-01	TFMP-01	8260B
L789666-02	TFMP-02	8260B

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	30600		10000	100	09/24/2015 06:30	WG816800
(S) α,α,α-Trifluorotoluene(FID)	*101*		*62.0-128*		*09/24/2015 06:30*	WG816800

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	413		25.0	25	10/01/2015 16:01	WG818917
Ethylbenzene	1490		25.0	25	10/01/2015 16:01	WG818917
Isopropylbenzene	118		25.0	25	10/01/2015 16:01	WG818917
Naphthalene	348		125	25	10/01/2015 16:01	WG818917
n-Propylbenzene	269		25.0	25	10/01/2015 16:01	WG818917
Toluene	188		125	25	10/01/2015 16:01	WG818917
1,2,4-Trimethylbenzene	1990		25.0	25	10/01/2015 16:01	WG818917
1,3,5-Trimethylbenzene	536		25.0	25	10/01/2015 16:01	WG818917
Xylenes, Total	7080		75.0	25	10/01/2015 16:01	WG818917
Di-isopropyl ether	28.8		25.0	25	10/01/2015 16:01	WG818917
Ethyl tert-butyl ether	ND		25.0	25	10/01/2015 16:01	WG818917
Methyl tert-butyl ether	63.2		25.0	25	10/01/2015 16:01	WG818917
t-Amyl Alcohol	ND		1250	25	10/01/2015 16:01	WG818917
tert-Butyl alcohol	156		125	25	10/01/2015 16:01	WG818917
tert-Amyl Methyl Ether	ND		25.0	25	10/01/2015 16:01	WG818917
(S) Toluene-d8	*104*		*90.0-115*		*10/01/2015 16:01*	WG818917
(S) Dibromofluoromethane	*99.3*		*79.0-121*		*10/01/2015 16:01*	WG818917
(S) 4-Bromofluorobenzene	*102*		*80.1-120*		*10/01/2015 16:01*	WG818917

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	12300		500	5	09/24/2015 03:27	WG816496
(S) o-Terphenyl	*113*		*50.0-150*		*09/24/2015 03:27*	WG816496

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	11000		500	5	09/24/2015 06:52	WG816800
(S) α,α,α-Trifluorotoluene(FID)	*100*		*62.0-128*		*09/24/2015 06:52*	WG816800

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	117		5.00	5	10/01/2015 16:24	WG818917
Ethylbenzene	228		5.00	5	10/01/2015 16:24	WG818917
Isopropylbenzene	53.4		5.00	5	10/01/2015 16:24	WG818917
Naphthalene	72.9		25.0	5	10/01/2015 16:24	WG818917
n-Propylbenzene	145		5.00	5	10/01/2015 16:24	WG818917
Toluene	406		25.0	5	10/01/2015 16:24	WG818917
1,2,4-Trimethylbenzene	890		5.00	5	10/01/2015 16:24	WG818917
1,3,5-Trimethylbenzene	273		5.00	5	10/01/2015 16:24	WG818917
Xylenes, Total	1200		15.0	5	10/01/2015 16:24	WG818917
Di-isopropyl ether	9.01		5.00	5	10/01/2015 16:24	WG818917
Ethyl tert-butyl ether	ND		5.00	5	10/01/2015 16:24	WG818917
Methyl tert-butyl ether	15.7		5.00	5	10/01/2015 16:24	WG818917
t-Amyl Alcohol	ND		250	5	10/01/2015 16:24	WG818917
tert-Butyl alcohol	ND		25.0	5	10/01/2015 16:24	WG818917
tert-Amyl Methyl Ether	ND		5.00	5	10/01/2015 16:24	WG818917
(S) Toluene-d8	*104*		*90.0-115*		*10/01/2015 16:24*	WG818917
(S) Dibromofluoromethane	*98.8*		*79.0-121*		*10/01/2015 16:24*	WG818917
(S) 4-Bromofluorobenzene	*99.7*		*80.1-120*		*10/01/2015 16:24*	WG818917

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	10400		500	5	09/24/2015 03:47	WG816496
(S) o-Terphenyl	*114*		*50.0-150*		*09/24/2015 03:47*	WG816496

Method Blank (MB)

(MB) 09/23/15 23:02

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
TPH (GC/FID) Low Fraction	ND		0.100
(S) a,a,a-Trifluorotoluene(FID)	*99.9*		*62.0-128*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/23/15 21:56 • (LCSD) 09/23/15 22:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	4.90	5.05	89.1	91.8	67.0-132			2.92	20
(S) a,a,a-Trifluorotoluene(FID)				*98.2*	*96.9*	*62.0-128*				

L789665-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/24/15 01:20 • (MS) 09/24/15 03:55 • (MSD) 09/24/15 04:17

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.10	112	108	96.8	93.7	20	50.0-143			3.06	20
(S) a,a,a-Trifluorotoluene(FID)					*101*	*97.2*		*62.0-128*				

Method Blank (MB)

(MB) 10/01/15 09:30

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Benzene	ND		0.00100
Di-isopropyl ether	ND		0.00100
Ethylbenzene	ND		0.00100
Methyl tert-butyl ether	ND		0.00100
Naphthalene	ND		0.00500
Toluene	ND		0.00500
Xylenes, Total	ND		0.00300
tert-Amyl Methyl Ether	ND		0.00100
Ethyl tert-butyl ether	ND		0.00100
tert-Butyl alcohol	ND		0.00500
(S) Toluene-d8	*105*		*90.0-115*
(S) Dibromofluoromethane	*98.9*		*79.0-121*
(S) 4-Bromofluorobenzene	*102*		*80.1-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/01/15 07:00 • (LCSD) 10/01/15 07:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0247	0.0248	98.9	99.3	73.0-122			0.360	20
Di-isopropyl ether	0.0250	0.0238	0.0239	95.4	95.5	65.1-135			0.180	20
Ethylbenzene	0.0250	0.0253	0.0256	101	102	80.9-121			0.950	20
Methyl tert-butyl ether	0.0250	0.0241	0.0241	96.5	96.5	70.1-125			0.0600	20
Naphthalene	0.0250	0.0246	0.0246	98.4	98.4	69.7-134			0.0600	20
Toluene	0.0250	0.0245	0.0249	98.1	99.5	77.9-116			1.47	20
Xylenes, Total	0.0750	0.0758	0.0750	101	100	79.2-122			1.12	20
(S) Toluene-d8				*105*	*105*	*90.0-115*				
(S) Dibromofluoromethane				*98.7*	*98.8*	*79.0-121*				
(S) 4-Bromofluorobenzene				*104*	*104*	*80.1-120*				

L790555-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/01/15 11:40 • (MS) 10/01/15 12:03 • (MSD) 10/01/15 12:25

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	ND	0.0246	0.0240	98.3	96.0	1	58.6-133			2.38	20

L790555-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/01/15 11:40 • (MS) 10/01/15 12:03 • (MSD) 10/01/15 12:25

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Di-isopropyl ether	0.0250	ND	0.0241	0.0231	96.6	92.6	1	59.9-140			4.22	20
Ethylbenzene	0.0250	0.000355	0.0254	0.0247	100	97.4	1	62.7-136			2.65	20
Isopropylbenzene	0.0250	0.00723	0.0315	0.0303	96.9	92.4	1	67.4-136			3.68	20
Methyl tert-butyl ether	0.0250	0.0662	0.0888	0.0854	90.6	77.1	1	61.4-136			3.86	20
Naphthalene	0.0250	0.00335	0.0276	0.0276	97.0	97.0	1	61.8-143			0.0400	20
n-Propylbenzene	0.0250	0.00609	0.0307	0.0300	98.5	95.5	1	63.2-139			2.51	20
Toluene	0.0250	0.000525	0.0251	0.0244	98.1	95.7	1	67.8-124			2.47	20
1,2,4-Trimethylbenzene	0.0250	0.00312	0.0270	0.0265	95.5	93.4	1	60.5-137			2.02	20
1,3,5-Trimethylbenzene	0.0250	0.00104	0.0253	0.0247	97.0	94.6	1	67.9-134			2.38	20
Xylenes, Total	0.0750	0.00376	0.0775	0.0761	98.4	96.4	1	65.6-133			1.88	20
(S) Toluene-d8					*105*	*106*		*90.0-115*				
(S) Dibromofluoromethane					*99.7*	*99.4*		*79.0-121*				
(S) 4-Bromofluorobenzene					*104*	*104*		*80.1-120*				

Method Blank (MB)

(MB) 09/21/15 12:14

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
TPH (GC/FID) High Fraction	ND		0.100
(S) o-Terphenyl	*95.8*		*50.0-150*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/21/15 12:54 • (LCSD) 09/21/15 13:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	1.50	1.40	1.51	93.3	100	50.0-150			7.25	20
(S) o-Terphenyl				*103*	*98.9*	*50.0-150*				

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

State Accreditations

Alabama	40660
Alaska	UST-080
Arizona	AZ0612
Arkansas	88-0469
California	01157CA
Colorado	TN00003
Conneticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia [1]	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
Iowa	364
Kansas	E-10277
Kentucky [1]	90010
Kentucky [2]	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina [1]	DW21704
North Carolina [2]	41
North Dakota	R-140
Ohio–VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee [1 4]	2006
Texas	T 104704245-07-TX
Texas [5]	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

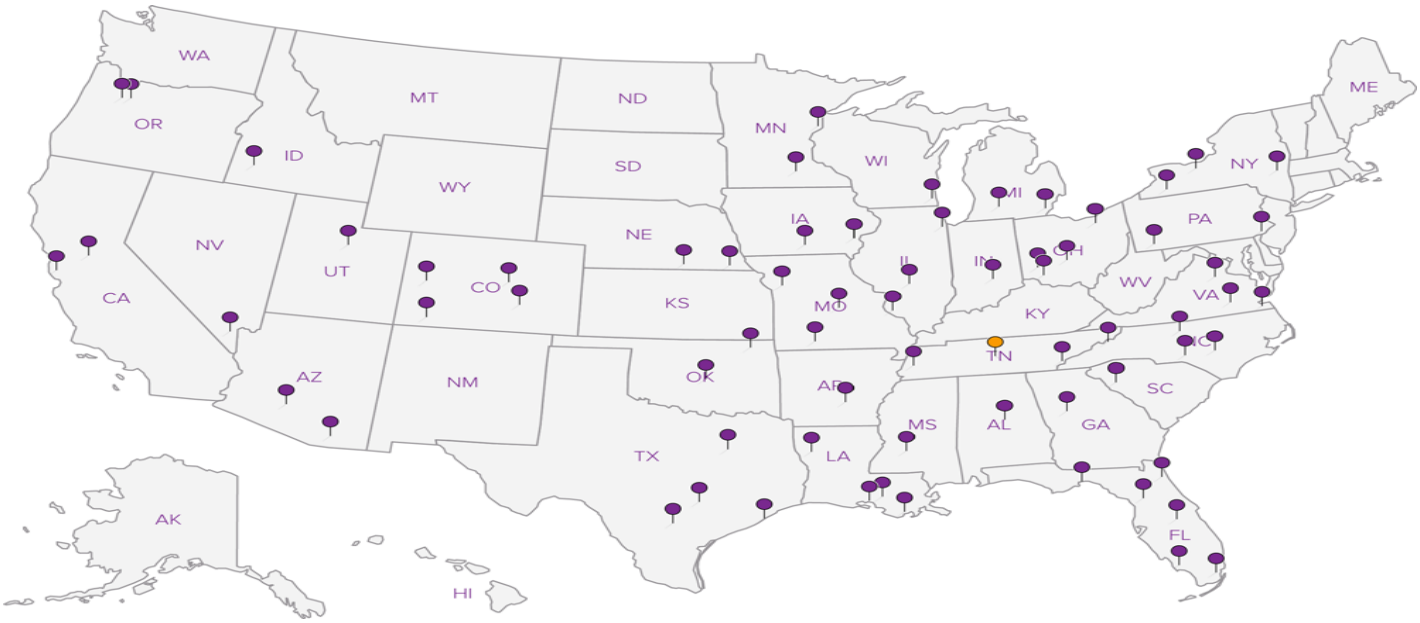
[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01
Canada	1461.01
EPA–Crypto	TN00003
AIHA	100789
DOD	1461.01
USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



BP Environmental

8615 Commerce Drive, Unit One
Easton, MD 21601

Billing Information:
Accounts Payable
8615 Commerce Drive, Unit One
Easton, MD 21601

Report to: GARY LASAKO

Email To: ADMINE@BPENVIRONMONITOR.NET

Project Description: QUARTERLY GROUNDWATER MONITORING

City/State Collected: GAMBRILLS, MD

Phone: 410-819-0919
Fax:

Client Project # HFJ-101-01

Lab Project #

Collected by (print): GARY LASAKO

Site/Facility ID #

P.O. # HFJ-101-01

Collected by (signature): Gary K [signature]
Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No ___Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

ESC LAB SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 789666

Table #

Acctnum: BPENV
Template:
Prelogin:
TSR: 034 - Craig Cothron
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOCs + OXY + NAPH 8260B 40mL AMB HCl	GRO VIA 8015 40mL AMB HCl	DRO VIA 8015 40mL AMB HCl								Rem./Contaminant	Sample # (lab only)
TFMP-01	G	GW	—	16 SEPT 15	1440	7	X	X	X									01
TFMP-02	G	GW	—	16 SEPT 15	1415	7	X	X	X									02
TRIP BLANK-COOLER #002	—	OT	—	—	—	1											HOLD	

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other LAB-SUPPLIED LEAN'D

Remarks:
COOLER #0002

pH ___ Temp ___
Flow ___ Other ___

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Gary K [signature]	18 SEPT 2015	1245	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			[signature]

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ ___

Temp: 3.1 °C Bottles Received: 14

Date: 9/19/15 Time: 900

Condition: (lab use only) ok JW7

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF:

ANALYTICAL REPORT

October 26, 2015

BP Environmental

Sample Delivery Group:	L795715
Samples Received:	10/21/2015
Project Number:	H&J-101-01
Description:	H&J-101-01 Quarterly GW Monitoring
Site:	H&J-101-01
Report To:	Ms. Lou Ann Parson 8615 Commerce Drive, Unit One Easton, MD 21601

Entire Report Reviewed By:

Craig Cothron
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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TFMP-01 L795715-01 GW

Collected by	Collected date/time	Received date/time
Jonathan Parson	10/19/15 14:00	10/21/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG824038	1	10/24/15 08:38	10/24/15 08:38	MEG
Volatile Organic Compounds (GC/MS) by Method 8260B	WG824397	200	10/25/15 22:07	10/25/15 22:07	MEG

TFMP-02 L795715-02 GW

Collected by	Collected date/time	Received date/time
Jonathan Parson	10/19/15 13:10	10/21/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG824038	1	10/24/15 08:56	10/24/15 08:56	MEG
Volatile Organic Compounds (GC/MS) by Method 8260B	WG824397	25	10/25/15 22:27	10/25/15 22:27	MEG

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Craig Cothron
Technical Service Representative

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		50.0	1	10/24/2015 08:38	WG824038
Acrolein	ND		50.0	1	10/24/2015 08:38	WG824038
Acrylonitrile	ND		10.0	1	10/24/2015 08:38	WG824038
Benzene	404		200	200	10/25/2015 22:07	WG824397
Bromobenzene	ND		1.00	1	10/24/2015 08:38	WG824038
Bromodichloromethane	ND		1.00	1	10/24/2015 08:38	WG824038
Bromoform	ND		1.00	1	10/24/2015 08:38	WG824038
Bromomethane	ND		5.00	1	10/24/2015 08:38	WG824038
n-Butylbenzene	10.2		1.00	1	10/24/2015 08:38	WG824038
sec-Butylbenzene	11.4		1.00	1	10/24/2015 08:38	WG824038
tert-Butylbenzene	ND		1.00	1	10/24/2015 08:38	WG824038
Carbon disulfide	ND		1.00	1	10/24/2015 08:38	WG824038
Carbon tetrachloride	ND		1.00	1	10/24/2015 08:38	WG824038
Chlorobenzene	ND		1.00	1	10/24/2015 08:38	WG824038
Chlorodibromomethane	ND		1.00	1	10/24/2015 08:38	WG824038
Chloroethane	ND		5.00	1	10/24/2015 08:38	WG824038
2-Chloroethyl vinyl ether	ND		50.0	1	10/24/2015 08:38	WG824038
Chloroform	ND		5.00	1	10/24/2015 08:38	WG824038
Chloromethane	ND		2.50	1	10/24/2015 08:38	WG824038
2-Chlorotoluene	ND		1.00	1	10/24/2015 08:38	WG824038
4-Chlorotoluene	ND		1.00	1	10/24/2015 08:38	WG824038
1,2-Dibromo-3-Chloropropane	ND		5.00	1	10/24/2015 08:38	WG824038
1,2-Dibromoethane	ND		1.00	1	10/24/2015 08:38	WG824038
Dibromomethane	ND		1.00	1	10/24/2015 08:38	WG824038
1,2-Dichlorobenzene	ND		1.00	1	10/24/2015 08:38	WG824038
1,3-Dichlorobenzene	ND		1.00	1	10/24/2015 08:38	WG824038
1,4-Dichlorobenzene	ND		1.00	1	10/24/2015 08:38	WG824038
Dichlorodifluoromethane	ND		5.00	1	10/24/2015 08:38	WG824038
1,1-Dichloroethane	ND		1.00	1	10/24/2015 08:38	WG824038
1,2-Dichloroethane	ND		1.00	1	10/24/2015 08:38	WG824038
1,1-Dichloroethene	ND		1.00	1	10/24/2015 08:38	WG824038
cis-1,2-Dichloroethene	ND		1.00	1	10/24/2015 08:38	WG824038
trans-1,2-Dichloroethene	ND		1.00	1	10/24/2015 08:38	WG824038
1,2-Dichloropropane	ND		1.00	1	10/24/2015 08:38	WG824038
1,1-Dichloropropene	ND		1.00	1	10/24/2015 08:38	WG824038
1,3-Dichloropropane	ND		1.00	1	10/24/2015 08:38	WG824038
cis-1,3-Dichloropropene	ND		1.00	1	10/24/2015 08:38	WG824038
trans-1,3-Dichloropropene	ND		1.00	1	10/24/2015 08:38	WG824038
2,2-Dichloropropane	ND		1.00	1	10/24/2015 08:38	WG824038
Ethylbenzene	1430		200	200	10/25/2015 22:07	WG824397
Hexachloro-1,3-butadiene	ND		1.00	1	10/24/2015 08:38	WG824038
Isopropylbenzene	131		1.00	1	10/24/2015 08:38	WG824038
p-Isopropyltoluene	27.4		1.00	1	10/24/2015 08:38	WG824038
2-Butanone (MEK)	ND		10.0	1	10/24/2015 08:38	WG824038
Methylene Chloride	ND		5.00	1	10/24/2015 08:38	WG824038
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	10/24/2015 08:38	WG824038
Naphthalene	ND		1000	200	10/25/2015 22:07	WG824397
n-Propylbenzene	269		200	200	10/25/2015 22:07	WG824397
Styrene	ND		1.00	1	10/24/2015 08:38	WG824038
1,1,1,2-Tetrachloroethane	ND		1.00	1	10/24/2015 08:38	WG824038
1,1,2,2-Tetrachloroethane	ND		1.00	1	10/24/2015 08:38	WG824038
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	10/24/2015 08:38	WG824038
Tetrachloroethene	ND		1.00	1	10/24/2015 08:38	WG824038
Toluene	183		5.00	1	10/24/2015 08:38	WG824038
1,2,3-Trichlorobenzene	ND		1.00	1	10/24/2015 08:38	WG824038
1,2,4-Trichlorobenzene	ND		1.00	1	10/24/2015 08:38	WG824038

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		1.00	1	10/24/2015 08:38	WG824038
1,1,2-Trichloroethane	ND		1.00	1	10/24/2015 08:38	WG824038
Trichloroethene	ND		1.00	1	10/24/2015 08:38	WG824038
Trichlorofluoromethane	ND		5.00	1	10/24/2015 08:38	WG824038
1,2,3-Trichloropropane	ND		2.50	1	10/24/2015 08:38	WG824038
1,2,4-Trimethylbenzene	2250		200	200	10/25/2015 22:07	WG824397
1,2,3-Trimethylbenzene	724		200	200	10/25/2015 22:07	WG824397
1,3,5-Trimethylbenzene	575		200	200	10/25/2015 22:07	WG824397
Vinyl chloride	ND		1.00	1	10/24/2015 08:38	WG824038
Xylenes, Total	7450		600	200	10/25/2015 22:07	WG824397
Di-isopropyl ether	21.0		1.00	1	10/24/2015 08:38	WG824038
Ethanol	ND		100	1	10/24/2015 08:38	WG824038
Ethyl tert-butyl ether	ND		1.00	1	10/24/2015 08:38	WG824038
Methyl tert-butyl ether	47.6		1.00	1	10/24/2015 08:38	WG824038
t-Amyl Alcohol	ND		10000	200	10/25/2015 22:07	WG824397
tert-Butyl alcohol	ND		1000	200	10/25/2015 22:07	WG824397
tert-Amyl Methyl Ether	1.45		1.00	1	10/24/2015 08:38	WG824038
(S) Toluene-d8	*102*		*90.0-115*		*10/24/2015 08:38*	WG824038
(S) Dibromofluoromethane	*90.9*		*79.0-121*		*10/24/2015 08:38*	WG824038
(S) 4-Bromofluorobenzene	*110*		*80.1-120*		*10/24/2015 08:38*	WG824038

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		50.0	1	10/24/2015 08:56	WG824038
Acrolein	ND		50.0	1	10/24/2015 08:56	WG824038
Acrylonitrile	ND		10.0	1	10/24/2015 08:56	WG824038
Benzene	119		1.00	1	10/24/2015 08:56	WG824038
Bromobenzene	ND		1.00	1	10/24/2015 08:56	WG824038
Bromodichloromethane	ND		1.00	1	10/24/2015 08:56	WG824038
Bromoform	ND		1.00	1	10/24/2015 08:56	WG824038
Bromomethane	ND		5.00	1	10/24/2015 08:56	WG824038
n-Butylbenzene	11.5		1.00	1	10/24/2015 08:56	WG824038
sec-Butylbenzene	9.49		1.00	1	10/24/2015 08:56	WG824038
tert-Butylbenzene	ND		1.00	1	10/24/2015 08:56	WG824038
Carbon disulfide	ND		1.00	1	10/24/2015 08:56	WG824038
Carbon tetrachloride	ND		1.00	1	10/24/2015 08:56	WG824038
Chlorobenzene	ND		1.00	1	10/24/2015 08:56	WG824038
Chlorodibromomethane	ND		1.00	1	10/24/2015 08:56	WG824038
Chloroethane	ND		5.00	1	10/24/2015 08:56	WG824038
2-Chloroethyl vinyl ether	ND		50.0	1	10/24/2015 08:56	WG824038
Chloroform	ND		5.00	1	10/24/2015 08:56	WG824038
Chloromethane	ND		2.50	1	10/24/2015 08:56	WG824038
2-Chlorotoluene	ND		1.00	1	10/24/2015 08:56	WG824038
4-Chlorotoluene	ND		1.00	1	10/24/2015 08:56	WG824038
1,2-Dibromo-3-Chloropropane	ND		5.00	1	10/24/2015 08:56	WG824038
1,2-Dibromoethane	ND		1.00	1	10/24/2015 08:56	WG824038
Dibromomethane	ND		1.00	1	10/24/2015 08:56	WG824038
1,2-Dichlorobenzene	ND		1.00	1	10/24/2015 08:56	WG824038
1,3-Dichlorobenzene	ND		1.00	1	10/24/2015 08:56	WG824038
1,4-Dichlorobenzene	ND		1.00	1	10/24/2015 08:56	WG824038
Dichlorodifluoromethane	ND		5.00	1	10/24/2015 08:56	WG824038
1,1-Dichloroethane	ND		1.00	1	10/24/2015 08:56	WG824038
1,2-Dichloroethane	ND		1.00	1	10/24/2015 08:56	WG824038
1,1-Dichloroethene	ND		1.00	1	10/24/2015 08:56	WG824038
cis-1,2-Dichloroethene	ND		1.00	1	10/24/2015 08:56	WG824038
trans-1,2-Dichloroethene	ND		1.00	1	10/24/2015 08:56	WG824038
1,2-Dichloropropane	ND		1.00	1	10/24/2015 08:56	WG824038
1,1-Dichloropropene	ND		1.00	1	10/24/2015 08:56	WG824038
1,3-Dichloropropane	ND		1.00	1	10/24/2015 08:56	WG824038
cis-1,3-Dichloropropene	ND		1.00	1	10/24/2015 08:56	WG824038
trans-1,3-Dichloropropene	ND		1.00	1	10/24/2015 08:56	WG824038
2,2-Dichloropropane	ND		1.00	1	10/24/2015 08:56	WG824038
Ethylbenzene	340		25.0	25	10/25/2015 22:27	WG824397
Hexachloro-1,3-butadiene	ND		1.00	1	10/24/2015 08:56	WG824038
Isopropylbenzene	56.7		1.00	1	10/24/2015 08:56	WG824038
p-Isopropyltoluene	20.5		1.00	1	10/24/2015 08:56	WG824038
2-Butanone (MEK)	ND		10.0	1	10/24/2015 08:56	WG824038
Methylene Chloride	ND		5.00	1	10/24/2015 08:56	WG824038
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	10/24/2015 08:56	WG824038
Naphthalene	116		5.00	1	10/24/2015 08:56	WG824038
n-Propylbenzene	152		1.00	1	10/24/2015 08:56	WG824038
Styrene	ND		1.00	1	10/24/2015 08:56	WG824038
1,1,1,2-Tetrachloroethane	ND		1.00	1	10/24/2015 08:56	WG824038
1,1,2,2-Tetrachloroethane	ND		1.00	1	10/24/2015 08:56	WG824038
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	10/24/2015 08:56	WG824038
Tetrachloroethene	ND		1.00	1	10/24/2015 08:56	WG824038
Toluene	509		125	25	10/25/2015 22:27	WG824397
1,2,3-Trichlorobenzene	ND		1.00	1	10/24/2015 08:56	WG824038
1,2,4-Trichlorobenzene	ND		1.00	1	10/24/2015 08:56	WG824038

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		1.00	1	10/24/2015 08:56	WG824038
1,1,2-Trichloroethane	ND		1.00	1	10/24/2015 08:56	WG824038
Trichloroethene	ND		1.00	1	10/24/2015 08:56	WG824038
Trichlorofluoromethane	ND		5.00	1	10/24/2015 08:56	WG824038
1,2,3-Trichloropropane	ND		2.50	1	10/24/2015 08:56	WG824038
1,2,4-Trimethylbenzene	1230		25.0	25	10/25/2015 22:27	WG824397
1,2,3-Trimethylbenzene	303		25.0	25	10/25/2015 22:27	WG824397
1,3,5-Trimethylbenzene	328		25.0	25	10/25/2015 22:27	WG824397
Vinyl chloride	ND		1.00	1	10/24/2015 08:56	WG824038
Xylenes, Total	1850		75.0	25	10/25/2015 22:27	WG824397
Di-isopropyl ether	12.1		1.00	1	10/24/2015 08:56	WG824038
Ethanol	ND		100	1	10/24/2015 08:56	WG824038
Ethyl tert-butyl ether	ND		1.00	1	10/24/2015 08:56	WG824038
Methyl tert-butyl ether	18.9		1.00	1	10/24/2015 08:56	WG824038
t-Amyl Alcohol	ND		1250	25	10/25/2015 22:27	WG824397
tert-Butyl alcohol	ND		125	25	10/25/2015 22:27	WG824397
tert-Amyl Methyl Ether	ND		1.00	1	10/24/2015 08:56	WG824038
(S) Toluene-d8	*106*		*90.0-115*		*10/24/2015 08:56*	WG824038
(S) Dibromofluoromethane	*94.7*		*79.0-121*		*10/24/2015 08:56*	WG824038
(S) 4-Bromofluorobenzene	*103*		*80.1-120*		*10/24/2015 08:56*	WG824038

Method Blank (MB)

(MB) 10/24/15 02:32

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Acetone	ND		0.0500
Acrolein	ND		0.0500
Acrylonitrile	ND		0.0100
Benzene	ND		0.00100
Bromobenzene	ND		0.00100
Bromodichloromethane	ND		0.00100
Bromoform	ND		0.00100
Bromomethane	ND		0.00500
n-Butylbenzene	ND		0.00100
sec-Butylbenzene	ND		0.00100
tert-Butylbenzene	ND		0.00100
Carbon disulfide	ND		0.00100
Carbon tetrachloride	ND		0.00100
Chlorobenzene	ND		0.00100
Chlorodibromomethane	ND		0.00100
Chloroethane	ND		0.00500
2-Chloroethyl vinyl ether	ND		0.0500
Chloroform	ND		0.00500
Chloromethane	ND		0.00250
2-Chlorotoluene	ND		0.00100
4-Chlorotoluene	ND		0.00100
1,2-Dibromo-3-Chloropropane	ND		0.00500
1,2-Dibromoethane	ND		0.00100
Dibromomethane	ND		0.00100
1,2-Dichlorobenzene	ND		0.00100
1,3-Dichlorobenzene	ND		0.00100
1,4-Dichlorobenzene	ND		0.00100
Dichlorodifluoromethane	ND		0.00500
1,1-Dichloroethane	ND		0.00100
1,2-Dichloroethane	ND		0.00100
1,1-Dichloroethene	ND		0.00100
cis-1,2-Dichloroethene	ND		0.00100
trans-1,2-Dichloroethene	ND		0.00100
1,2-Dichloropropane	ND		0.00100
1,1-Dichloropropene	ND		0.00100
1,3-Dichloropropane	ND		0.00100

Method Blank (MB)

(MB) 10/24/15 02:32

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
cis-1,3-Dichloropropene	ND		0.00100
trans-1,3-Dichloropropene	ND		0.00100
2,2-Dichloropropane	ND		0.00100
Di-isopropyl ether	ND		0.00100
Ethanol	ND		0.100
Hexachloro-1,3-butadiene	ND		0.00100
Isopropylbenzene	ND		0.00100
p-Isopropyltoluene	ND		0.00100
2-Butanone (MEK)	ND		0.0100
Methylene Chloride	ND		0.00500
4-Methyl-2-pentanone (MIBK)	ND		0.0100
Methyl tert-butyl ether	ND		0.00100
Naphthalene	ND		0.00500
n-Propylbenzene	ND		0.00100
Styrene	ND		0.00100
1,1,1,2-Tetrachloroethane	ND		0.00100
1,1,2,2-Tetrachloroethane	ND		0.00100
Tetrachloroethene	ND		0.00100
Toluene	ND		0.00500
1,1,2-Trichlorotrifluoroethane	ND		0.00100
1,2,3-Trichlorobenzene	ND		0.00100
1,2,4-Trichlorobenzene	ND		0.00100
1,1,1-Trichloroethane	ND		0.00100
1,1,2-Trichloroethane	ND		0.00100
Trichloroethene	ND		0.00100
Trichlorofluoromethane	ND		0.00500
1,2,3-Trichloropropane	ND		0.00250
Vinyl chloride	ND		0.00100
tert-Amyl Methyl Ether	ND		0.00100
Ethyl tert-butyl ether	ND		0.00100
(S) Toluene-d8	*107*		*90.0-115*
(S) Dibromofluoromethane	*98.6*		*79.0-121*
(S) 4-Bromofluorobenzene	*105*		*80.1-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/24/15 00:43 • (LCSD) 10/24/15 01:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	0.177	0.159	141	127	28.7-175			10.4	20.9
Acrolein	0.125	0.113	0.110	90.4	88.1	40.4-172			2.62	20
Acrylonitrile	0.125	0.108	0.104	86.5	83.4	58.2-145			3.69	20
Benzene	0.0250	0.0191	0.0201	76.5	80.4	73.0-122			5.05	20
Bromobenzene	0.0250	0.0253	0.0249	101	99.5	81.5-115			1.84	20
Bromodichloromethane	0.0250	0.0273	0.0267	109	107	75.5-121			2.22	20
Bromoform	0.0250	0.0291	0.0284	116	114	71.5-131			2.56	20
Bromomethane	0.0250	0.0244	0.0235	97.6	93.9	22.4-187			3.91	20
n-Butylbenzene	0.0250	0.0245	0.0257	98.0	103	75.9-134			4.91	20
sec-Butylbenzene	0.0250	0.0277	0.0261	111	104	80.6-126			6.10	20
tert-Butylbenzene	0.0250	0.0271	0.0259	108	104	79.3-127			4.53	20
Carbon disulfide	0.0250	0.0200	0.0203	79.8	81.0	53.0-134			1.55	20
Carbon tetrachloride	0.0250	0.0258	0.0255	103	102	70.9-129			0.880	20
Chlorobenzene	0.0250	0.0252	0.0246	101	98.4	79.7-122			2.21	20
Chlorodibromomethane	0.0250	0.0283	0.0272	113	109	78.2-124			3.83	20
Chloroethane	0.0250	0.0236	0.0234	94.2	93.8	41.2-153			0.480	20
2-Chloroethyl vinyl ether	0.125	0.126	0.125	101	99.6	23.4-162			1.31	23.5
Chloroform	0.0250	0.0240	0.0238	95.9	95.3	73.2-125			0.620	20
Chloromethane	0.0250	0.0187	0.0184	74.8	73.5	55.8-134			1.81	20
2-Chlorotoluene	0.0250	0.0263	0.0250	105	100	76.4-125			5.12	20
4-Chlorotoluene	0.0250	0.0264	0.0256	106	103	81.5-121			2.90	20
1,2-Dibromo-3-Chloropropane	0.0250	0.0270	0.0288	108	115	64.8-131			6.37	20
1,2-Dibromoethane	0.0250	0.0261	0.0246	104	98.4	79.8-122			5.80	20
Dibromomethane	0.0250	0.0256	0.0255	102	102	79.5-118			0.410	20
1,2-Dichlorobenzene	0.0250	0.0236	0.0247	94.5	98.7	84.7-118			4.35	20
1,3-Dichlorobenzene	0.0250	0.0290	0.0269	116	108	77.6-127			7.73	20
1,4-Dichlorobenzene	0.0250	0.0230	0.0232	92.1	92.6	82.2-114			0.500	20
Dichlorodifluoromethane	0.0250	0.0244	0.0237	97.8	94.6	56.0-134			3.25	20
1,1-Dichloroethane	0.0250	0.0216	0.0213	86.4	85.2	71.7-127			1.33	20
1,2-Dichloroethane	0.0250	0.0270	0.0261	108	105	65.3-126			3.23	20
1,1-Dichloroethene	0.0250	0.0246	0.0244	98.2	97.7	59.9-137			0.560	20
cis-1,2-Dichloroethene	0.0250	0.0212	0.0216	84.9	86.5	77.3-122			1.91	20
trans-1,2-Dichloroethene	0.0250	0.0205	0.0202	82.1	80.9	72.6-125			1.49	20
1,2-Dichloropropane	0.0250	0.0224	0.0221	89.5	88.6	77.4-125			1.08	20
1,1-Dichloropropene	0.0250	0.0215	0.0222	86.0	88.7	72.5-127			3.18	20
1,3-Dichloropropane	0.0250	0.0240	0.0234	96.1	93.4	80.6-115			2.88	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/24/15 00:43 • (LCSD) 10/24/15 01:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
cis-1,3-Dichloropropene	0.0250	0.0240	0.0243	96.1	97.1	77.7-124			1.09	20
trans-1,3-Dichloropropene	0.0250	0.0260	0.0262	104	105	73.5-127			0.760	20
2,2-Dichloropropane	0.0250	0.0250	0.0245	99.9	98.0	61.3-134			1.92	20
Di-isopropyl ether	0.0250	0.0187	0.0195	74.9	78.0	65.1-135			4.06	20
Hexachloro-1,3-butadiene	0.0250	0.0268	0.0276	107	111	73.7-133			3.08	20
Isopropylbenzene	0.0250	0.0257	0.0241	103	96.6	81.6-124			6.40	20
p-Isopropyltoluene	0.0250	0.0286	0.0277	114	111	77.6-129			3.26	20
2-Butanone (MEK)	0.125	0.121	0.122	96.7	97.9	46.4-155			1.23	20
Methylene Chloride	0.0250	0.0196	0.0194	78.3	77.8	69.5-120			0.690	20
4-Methyl-2-pentanone (MIBK)	0.125	0.119	0.118	95.4	94.4	63.3-138			1.07	20
Methyl tert-butyl ether	0.0250	0.0212	0.0212	84.7	84.8	70.1-125			0.190	20
Naphthalene	0.0250	0.0263	0.0269	105	108	69.7-134			2.29	20
n-Propylbenzene	0.0250	0.0258	0.0254	103	102	81.9-122			1.37	20
Styrene	0.0250	0.0251	0.0254	100	101	79.9-124			1.12	20
1,1,1,2-Tetrachloroethane	0.0250	0.0272	0.0263	109	105	78.5-125			3.68	20
1,1,2,2-Tetrachloroethane	0.0250	0.0266	0.0244	107	97.7	79.3-123			8.68	20
Tetrachloroethene	0.0250	0.0254	0.0246	102	98.4	73.5-130			3.18	20
Toluene	0.0250	0.0225	0.0225	90.1	90.1	77.9-116			0.0800	20
1,1,2-Trichlorotrifluoroethane	0.0250	0.0234	0.0246	93.8	98.6	62.0-141			4.99	20
1,2,3-Trichlorobenzene	0.0250	0.0277	0.0271	111	108	75.7-134			2.29	20
1,2,4-Trichlorobenzene	0.0250	0.0269	0.0270	108	108	76.1-136			0.620	20
1,1,1-Trichloroethane	0.0250	0.0254	0.0247	101	98.6	71.1-129			2.81	20
1,1,2-Trichloroethane	0.0250	0.0254	0.0244	102	97.8	81.6-120			3.84	20
Trichloroethene	0.0250	0.0236	0.0242	94.3	97.0	79.5-121			2.79	20
Trichlorofluoromethane	0.0250	0.0279	0.0273	112	109	49.1-157			2.34	20
1,2,3-Trichloropropane	0.0250	0.0299	0.0288	120	115	74.9-124			3.86	20
Vinyl chloride	0.0250	0.0227	0.0227	90.8	90.7	61.5-134			0.120	20
(S) Toluene-d8				*106*	*103*	*90.0-115*				
(S) Dibromofluoromethane				*101*	*97.0*	*79.0-121*				
(S) 4-Bromofluorobenzene				*108*	*103*	*80.1-120*				

L795211-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/24/15 03:45 • (MS) 10/24/15 02:51 • (MSD) 10/24/15 03:09

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %

L795211-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/24/15 03:45 • (MS) 10/24/15 02:51 • (MSD) 10/24/15 03:09

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	0.00159	0.0719	0.0724	56.3	56.6	1	25.0-156			0.650	21.5
Acrolein	0.125	ND	0.114	0.125	91.5	99.7	1	34.0-194			8.61	21.5
Acrylonitrile	0.125	ND	0.101	0.107	80.8	85.4	1	55.9-161			5.53	20
Benzene	0.0250	ND	0.0196	0.0198	78.3	79.1	1	58.6-133			1.00	20
Bromobenzene	0.0250	ND	0.0260	0.0253	104	101	1	70.6-125			2.64	20
Bromodichloromethane	0.0250	ND	0.0268	0.0260	107	104	1	69.2-127			3.04	20
Bromoform	0.0250	ND	0.0290	0.0286	116	114	1	66.3-140			1.63	20
Bromomethane	0.0250	ND	0.0219	0.0226	87.5	90.3	1	16.6-183			3.21	20.5
n-Butylbenzene	0.0250	ND	0.0264	0.0259	106	103	1	64.8-145			2.14	20
sec-Butylbenzene	0.0250	ND	0.0288	0.0277	115	111	1	66.8-139			3.88	20
tert-Butylbenzene	0.0250	ND	0.0290	0.0274	116	110	1	67.1-138			5.49	20
Carbon disulfide	0.0250	ND	0.0186	0.0199	74.5	79.4	1	34.9-138			6.39	20
Carbon tetrachloride	0.0250	ND	0.0266	0.0245	106	97.8	1	60.6-139			8.35	20
Chlorobenzene	0.0250	ND	0.0248	0.0243	99.3	97.3	1	70.1-130			2.11	20
Chlorodibromomethane	0.0250	ND	0.0277	0.0278	111	111	1	71.6-132			0.410	20
Chloroethane	0.0250	ND	0.0225	0.0237	89.8	94.7	1	33.3-155			5.35	20
2-Chloroethyl vinyl ether	0.125	ND	0.0360	0.0207	28.8	16.6	1	5.00-149		J3	54.0	40
Chloroform	0.0250	ND	0.0236	0.0231	94.5	92.6	1	66.1-133			2.08	20
Chloromethane	0.0250	ND	0.0171	0.0179	68.4	71.7	1	40.7-139			4.76	20
2-Chlorotoluene	0.0250	ND	0.0271	0.0261	108	105	1	66.9-134			3.44	20
4-Chlorotoluene	0.0250	ND	0.0263	0.0249	105	99.8	1	66.8-134			5.14	20
1,2-Dibromo-3-Chloropropane	0.0250	ND	0.0266	0.0267	106	107	1	63.9-142			0.440	20.2
1,2-Dibromoethane	0.0250	ND	0.0243	0.0242	97.3	96.6	1	73.8-131			0.700	20
Dibromomethane	0.0250	ND	0.0255	0.0245	102	98.2	1	72.8-127			3.82	20
1,2-Dichlorobenzene	0.0250	ND	0.0249	0.0232	99.7	93.0	1	77.4-127			6.99	20
1,3-Dichlorobenzene	0.0250	ND	0.0279	0.0276	112	110	1	67.9-136			1.12	20
1,4-Dichlorobenzene	0.0250	ND	0.0240	0.0229	96.1	91.4	1	74.4-123			4.95	20
Dichlorodifluoromethane	0.0250	ND	0.0244	0.0237	97.5	94.9	1	42.2-146			2.75	20
1,1-Dichloroethane	0.0250	ND	0.0210	0.0215	83.9	85.9	1	64.0-134			2.35	20
1,2-Dichloroethane	0.0250	ND	0.0254	0.0252	102	101	1	60.7-132			1.04	20
1,1-Dichloroethene	0.0250	ND	0.0242	0.0252	96.6	101	1	48.8-144			4.25	20
cis-1,2-Dichloroethene	0.0250	ND	0.0209	0.0212	83.7	84.9	1	60.6-136			1.38	20
trans-1,2-Dichloroethene	0.0250	ND	0.0205	0.0209	81.8	83.6	1	61.0-132			2.23	20
1,2-Dichloropropane	0.0250	ND	0.0220	0.0215	88.0	86.2	1	69.7-130			2.06	20
1,1-Dichloropropene	0.0250	ND	0.0220	0.0218	88.2	87.4	1	61.5-136			0.960	20
1,3-Dichloropropane	0.0250	ND	0.0238	0.0239	95.1	95.5	1	74.3-123			0.480	20

L795211-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/24/15 03:45 • (MS) 10/24/15 02:51 • (MSD) 10/24/15 03:09

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
cis-1,3-Dichloropropene	0.0250	ND	0.0239	0.0239	95.4	95.7	1	71.1-129			0.320	20
trans-1,3-Dichloropropene	0.0250	ND	0.0259	0.0254	104	102	1	66.3-136			2.06	20
2,2-Dichloropropane	0.0250	ND	0.0246	0.0246	98.3	98.3	1	54.9-142			0.0200	20
Di-isopropyl ether	0.0250	ND	0.0189	0.0192	75.7	76.6	1	59.9-140			1.27	20
Hexachloro-1,3-butadiene	0.0250	ND	0.0280	0.0276	112	110	1	61.1-144			1.25	20.1
Isopropylbenzene	0.0250	ND	0.0267	0.0256	107	102	1	67.4-136			4.17	20
p-Isopropyltoluene	0.0250	ND	0.0289	0.0283	116	113	1	62.8-143			2.12	20
2-Butanone (MEK)	0.125	ND	0.0797	0.0831	63.8	66.5	1	45.0-156			4.12	20.8
Methylene Chloride	0.0250	ND	0.0189	0.0191	75.7	76.4	1	61.5-125			0.840	20
4-Methyl-2-pentanone (MIBK)	0.125	ND	0.116	0.116	92.7	92.5	1	60.7-150			0.280	20
Methyl tert-butyl ether	0.0250	0.00141	0.0219	0.0226	81.8	84.8	1	61.4-136			3.34	20
Naphthalene	0.0250	ND	0.0260	0.0259	104	104	1	61.8-143			0.450	20
n-Propylbenzene	0.0250	ND	0.0275	0.0263	110	105	1	63.2-139			4.46	20
Styrene	0.0250	ND	0.0250	0.0250	99.8	100	1	68.2-133			0.230	20
1,1,1,2-Tetrachloroethane	0.0250	ND	0.0265	0.0266	106	106	1	70.5-132			0.560	20
1,1,2,2-Tetrachloroethane	0.0250	ND	0.0270	0.0261	108	104	1	64.9-145			3.41	20
Tetrachloroethene	0.0250	ND	0.0260	0.0258	104	103	1	57.4-141			0.840	20
Toluene	0.0250	ND	0.0221	0.0220	88.6	87.9	1	67.8-124			0.710	20
1,1,2-Trichlorotrifluoroethane	0.0250	ND	0.0242	0.0248	97.0	99.2	1	53.7-150			2.30	20
1,2,3-Trichlorobenzene	0.0250	ND	0.0273	0.0271	109	109	1	65.7-143			0.700	20
1,2,4-Trichlorobenzene	0.0250	ND	0.0280	0.0273	112	109	1	67.0-146			2.35	20
1,1,1-Trichloroethane	0.0250	ND	0.0263	0.0251	105	100	1	58.7-134			4.91	20
1,1,2-Trichloroethane	0.0250	ND	0.0255	0.0247	102	98.9	1	74.1-130			3.27	20
Trichloroethene	0.0250	ND	0.0244	0.0233	97.7	93.2	1	48.9-148			4.71	20
Trichlorofluoromethane	0.0250	ND	0.0266	0.0282	107	113	1	39.9-165			5.53	20
1,2,3-Trichloropropane	0.0250	ND	0.0294	0.0298	118	119	1	71.5-134			1.40	20
Vinyl chloride	0.0250	ND	0.0214	0.0226	85.5	90.3	1	44.3-143			5.54	20
(S) Toluene-d8					*104*	*102*		*90.0-115*				
(S) Dibromofluoromethane					*101*	*96.1*		*79.0-121*				
(S) 4-Bromofluorobenzene					*113*	*108*		*80.1-120*				

Method Blank (MB)

(MB) 10/25/15 18:43

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Benzene	ND		0.00100
Ethylbenzene	ND		0.00100
Naphthalene	ND		0.00500
n-Propylbenzene	ND		0.00100
Toluene	ND		0.00500
1,2,3-Trimethylbenzene	ND		0.00100
1,2,4-Trimethylbenzene	ND		0.00100
1,3,5-Trimethylbenzene	ND		0.00100
Xylenes, Total	ND		0.00300
tert-Butyl alcohol	ND		0.00500

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/25/15 17:04 • (LCSD) 10/25/15 17:24

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0238	0.0237	95.2	94.9	73.0-122			0.330	20
Ethylbenzene	0.0250	0.0252	0.0250	101	99.8	80.9-121			1.09	20
Naphthalene	0.0250	0.0259	0.0271	104	108	69.7-134			4.32	20
n-Propylbenzene	0.0250	0.0256	0.0252	102	101	81.9-122			1.43	20
Toluene	0.0250	0.0245	0.0243	98.0	97.2	77.9-116			0.810	20
1,2,3-Trimethylbenzene	0.0250	0.0252	0.0254	101	102	79.9-118			0.970	20
1,2,4-Trimethylbenzene	0.0250	0.0263	0.0260	105	104	79.0-122			0.920	20
1,3,5-Trimethylbenzene	0.0250	0.0258	0.0256	103	102	81.0-123			0.920	20
Xylenes, Total	0.0750	0.0748	0.0738	99.7	98.3	79.2-122			1.43	20

L796362-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/25/15 21:07 • (MS) 10/25/15 19:29 • (MSD) 10/25/15 19:48

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	ND	0.0244	0.0249	97.6	99.6	1	58.6-133			2.12	20
Ethylbenzene	0.0250	ND	0.0240	0.0251	95.9	100	1	62.7-136			4.67	20
Naphthalene	0.0250	ND	0.0261	0.0280	104	112	1	61.8-143			7.15	20
n-Propylbenzene	0.0250	ND	0.0245	0.0256	98.1	102	1	63.2-139			4.13	20

L796362-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/25/15 21:07 • (MS) 10/25/15 19:29 • (MSD) 10/25/15 19:48

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Toluene	0.0250	ND	0.0241	0.0248	96.5	99.4	1	67.8-124			2.90	20
1,2,3-Trimethylbenzene	0.0250	ND	0.0249	0.0260	99.5	104	1	62.7-133			4.30	20
1,2,4-Trimethylbenzene	0.0250	ND	0.0252	0.0261	101	104	1	60.5-137			3.76	20
1,3,5-Trimethylbenzene	0.0250	ND	0.0246	0.0253	98.5	101	1	67.9-134			2.75	20
Xylenes, Total	0.0750	ND	0.0712	0.0734	94.9	97.8	1	65.6-133			3.05	20

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

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New Mexico	TN00003
New York	11742
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North Carolina [1]	DW21704
North Carolina [2]	41
North Dakota	R-140
Ohio–VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee [1 4]	2006
Texas	T 104704245-07-TX
Texas [5]	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

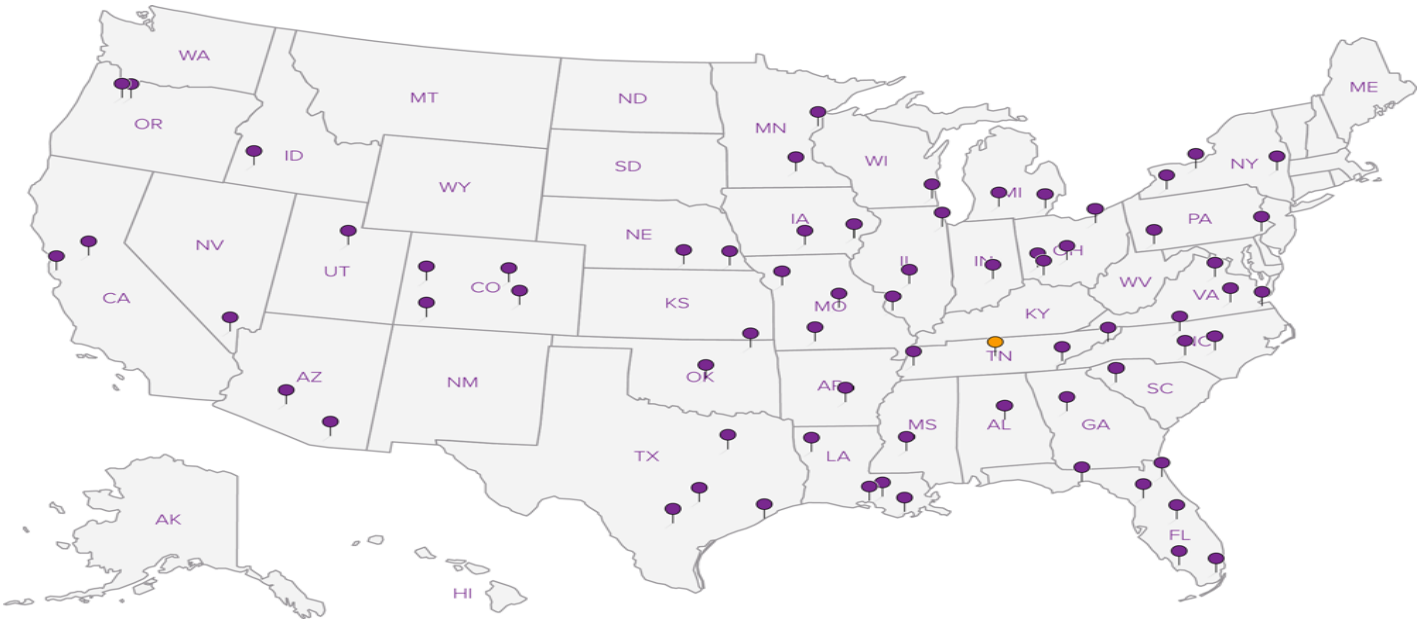
[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01
Canada	1461.01
EPA–Crypto	TN00003
AIHA	100789
DOD	1461.01
USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:
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8615 Commerce Drive unit one
Easton, MD 21601

Billing Information:
Accounts Payable
8615 Commerce Drive, Unit One
Easton, MD 21601

Report to: **Ms. Lou Ann Parson**

Email To: **admin@bpenvironmental.net**

Project Description: **H&J-101-01** Quarterly GW monitoring

City/State Collected: **Gambrills MD**

Phone: **4108190919**
Fax:

Client Project # **H&J-101-01**

Lab Project # **BPENV-HJ-101-01**

Collected by (print): jonathan parson

Site/Facility ID # **H&J-101-01**

P.O. # **HJ-101-01**

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No X Yes
FAX? ___No ___Yes

Analysis / Container / Preservative: ~~V5240W 40mlAmb-AscAcid+HCl~~ JP 10/20/15 VOC 2-60 OXY 40 mlAmb + HCl

Chain of Custody Page 1 of 1

ESC LAB SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L795715

F014

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V5240W 40mlAmb-AscAcid+HCl	Rem./Contaminant	Sample # (lab only)
TFMP-01	Grab	GW		10/19/15	1400	2	✓		-01
TFMP-02	Grab	GW			1310	2	✓		-02

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	10/20/15	10 00	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature) 6194 4956 2226
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____
Temp: 3.2 °C Bottles Received: 4 = VP
Date: 10-21-15 Time: 900

Hold #
Condition: (lab use only) GOOD OK
COC Seal Intact: ___Y ___N ✓ NA
pH Checked: NCF:

APPENDIX B

ANALYTICAL REPORT

September 30, 2015

BP Environmental

Sample Delivery Group:	L789664
Samples Received:	09/19/2015
Project Number:	H &J-101-01
Description:	Quarterly GW Monitoring
Site:	H&J Amoco, Inc.
Report To:	Ms. Lou Ann Parson 8615 Commerce Drive, Unit One Easton, MD 21601

Entire Report Reviewed By:

Craig Cothron
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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MW-01 L789664-01 GW

Collected by: Jonathan Parson | Collected date/time: 09/17/15 13:00 | Received date/time: 09/19/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG816429	1	09/21/15 23:17	09/22/15 20:37	JNS
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG816799	1	09/23/15 12:11	09/23/15 12:11	MCB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG817589	1	09/25/15 11:42	09/25/15 11:42	KLO

MW-02 L789664-02 GW

Collected by: Jonathan Parson | Collected date/time: 09/17/15 11:40 | Received date/time: 09/19/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG816429	1	09/21/15 23:17	09/22/15 20:55	JNS
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG817602	1	09/25/15 10:54	09/25/15 10:54	KLO
Volatile Organic Compounds (GC/MS) by Method 8260B	WG817589	25	09/25/15 12:01	09/25/15 12:01	KLO

MW-03 L789664-03 GW

Collected by: Jonathan Parson | Collected date/time: 09/17/15 14:30 | Received date/time: 09/19/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG816429	1	09/21/15 23:17	09/22/15 21:12	JNS
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG816799	1	09/23/15 14:52	09/23/15 14:52	MCB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG817589	1	09/25/15 12:21	09/25/15 12:21	KLO

MW-04 L789664-04 GW

Collected by: Jonathan Parson | Collected date/time: 09/16/15 16:30 | Received date/time: 09/19/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG816429	1	09/21/15 23:17	09/22/15 21:30	JNS
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG816799	1	09/23/15 15:15	09/23/15 15:15	MCB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG817589	1	09/25/15 12:40	09/25/15 12:40	KLO

MW-05 L789664-05 GW

Collected by: Jonathan Parson | Collected date/time: 09/17/15 10:15 | Received date/time: 09/19/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG816429	1	09/21/15 23:17	09/22/15 21:48	JNS
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG816799	1	09/23/15 15:38	09/23/15 15:38	MCB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG817589	1	09/25/15 12:59	09/25/15 12:59	KLO

MW-06 L789664-06 GW

Collected by: Jonathan Parson | Collected date/time: 09/16/15 14:30 | Received date/time: 09/19/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG816429	1	09/21/15 23:17	09/22/15 22:06	JNS
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG816799	1	09/23/15 16:01	09/23/15 16:01	MCB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG817589	50	09/25/15 13:18	09/25/15 13:18	KLO

MW-07 L789664-07 GW

Collected by: Jonathan Parson
Collected date/time: 09/16/15 10:45
Received date/time: 09/19/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG816429	1	09/21/15 23:17	09/22/15 22:23	JNS
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG816799	1	09/23/15 16:25	09/23/15 16:25	MCB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG817589	1	09/25/15 13:38	09/25/15 13:38	KLO

MW-08 L789664-08 GW

Collected by: Jonathan Parson
Collected date/time: 09/16/15 12:00
Received date/time: 09/19/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG816429	1	09/21/15 23:17	09/22/15 22:41	JNS
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG816799	1	09/23/15 16:48	09/23/15 16:48	MCB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG817589	1	09/25/15 13:57	09/25/15 13:57	KLO

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Craig Cothron
Technical Service Representative

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND	J3	100	1	09/23/2015 12:11	WG816799
(S) α,α,α-Trifluorotoluene(FID)	*99.5*		*62.0-128*		*09/23/2015 12:11*	WG816799

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/25/2015 11:42	WG817589
Ethylbenzene	ND		1.00	1	09/25/2015 11:42	WG817589
Isopropylbenzene	ND		1.00	1	09/25/2015 11:42	WG817589
Naphthalene	ND		5.00	1	09/25/2015 11:42	WG817589
n-Propylbenzene	ND		1.00	1	09/25/2015 11:42	WG817589
Toluene	ND		5.00	1	09/25/2015 11:42	WG817589
1,2,4-Trimethylbenzene	ND		1.00	1	09/25/2015 11:42	WG817589
1,3,5-Trimethylbenzene	ND		1.00	1	09/25/2015 11:42	WG817589
Xylenes, Total	ND		3.00	1	09/25/2015 11:42	WG817589
Di-isopropyl ether	ND		1.00	1	09/25/2015 11:42	WG817589
Ethyl tert-butyl ether	ND		1.00	1	09/25/2015 11:42	WG817589
Methyl tert-butyl ether	ND		1.00	1	09/25/2015 11:42	WG817589
t-Amyl Alcohol	ND		50.0	1	09/25/2015 11:42	WG817589
tert-Butyl alcohol	ND		5.00	1	09/25/2015 11:42	WG817589
tert-Amyl Methyl Ether	ND		1.00	1	09/25/2015 11:42	WG817589
(S) Toluene-d8	*104*		*90.0-115*		*09/25/2015 11:42*	WG817589
(S) Dibromofluoromethane	*101*		*79.0-121*		*09/25/2015 11:42*	WG817589
(S) 4-Bromofluorobenzene	*105*		*80.1-120*		*09/25/2015 11:42*	WG817589

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		100	1	09/22/2015 20:37	WG816429
(S) o-Terphenyl	*98.5*		*50.0-150*		*09/22/2015 20:37*	WG816429

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	728		100	1	09/25/2015 10:54	WG817602
(S) α,α,α-Trifluorotoluene(FID)	*75.5*		*62.0-128*		*09/25/2015 10:54*	WG817602

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		25.0	25	09/25/2015 12:01	WG817589
Ethylbenzene	ND		25.0	25	09/25/2015 12:01	WG817589
Isopropylbenzene	ND		25.0	25	09/25/2015 12:01	WG817589
Naphthalene	ND		125	25	09/25/2015 12:01	WG817589
n-Propylbenzene	ND		25.0	25	09/25/2015 12:01	WG817589
Toluene	ND		125	25	09/25/2015 12:01	WG817589
1,2,4-Trimethylbenzene	ND		25.0	25	09/25/2015 12:01	WG817589
1,3,5-Trimethylbenzene	ND		25.0	25	09/25/2015 12:01	WG817589
Xylenes, Total	ND		75.0	25	09/25/2015 12:01	WG817589
Di-isopropyl ether	57.2		25.0	25	09/25/2015 12:01	WG817589
Ethyl tert-butyl ether	ND		25.0	25	09/25/2015 12:01	WG817589
Methyl tert-butyl ether	2340		25.0	25	09/25/2015 12:01	WG817589
t-Amyl Alcohol	ND		1250	25	09/25/2015 12:01	WG817589
tert-Butyl alcohol	ND		125	25	09/25/2015 12:01	WG817589
tert-Amyl Methyl Ether	56.9		25.0	25	09/25/2015 12:01	WG817589
(S) Toluene-d8	*104*		*90.0-115*		*09/25/2015 12:01*	WG817589
(S) Dibromofluoromethane	*101*		*79.0-121*		*09/25/2015 12:01*	WG817589
(S) 4-Bromofluorobenzene	*102*		*80.1-120*		*09/25/2015 12:01*	WG817589

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	161		100	1	09/22/2015 20:55	WG816429
(S) o-Terphenyl	*104*		*50.0-150*		*09/22/2015 20:55*	WG816429

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		100	1	09/23/2015 14:52	WG816799
(S) α,α,α-Trifluorotoluene(FID)	*99.3*		*62.0-128*		*09/23/2015 14:52*	WG816799

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/25/2015 12:21	WG817589
Ethylbenzene	ND		1.00	1	09/25/2015 12:21	WG817589
Isopropylbenzene	ND		1.00	1	09/25/2015 12:21	WG817589
Naphthalene	ND		5.00	1	09/25/2015 12:21	WG817589
n-Propylbenzene	ND		1.00	1	09/25/2015 12:21	WG817589
Toluene	ND		5.00	1	09/25/2015 12:21	WG817589
1,2,4-Trimethylbenzene	ND		1.00	1	09/25/2015 12:21	WG817589
1,3,5-Trimethylbenzene	ND		1.00	1	09/25/2015 12:21	WG817589
Xylenes, Total	ND		3.00	1	09/25/2015 12:21	WG817589
Di-isopropyl ether	ND		1.00	1	09/25/2015 12:21	WG817589
Ethyl tert-butyl ether	ND		1.00	1	09/25/2015 12:21	WG817589
Methyl tert-butyl ether	23.1		1.00	1	09/25/2015 12:21	WG817589
t-Amyl Alcohol	ND		50.0	1	09/25/2015 12:21	WG817589
tert-Butyl alcohol	ND		5.00	1	09/25/2015 12:21	WG817589
tert-Amyl Methyl Ether	ND		1.00	1	09/25/2015 12:21	WG817589
(S) Toluene-d8	*105*		*90.0-115*		*09/25/2015 12:21*	WG817589
(S) Dibromofluoromethane	*102*		*79.0-121*		*09/25/2015 12:21*	WG817589
(S) 4-Bromofluorobenzene	*102*		*80.1-120*		*09/25/2015 12:21*	WG817589

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		100	1	09/22/2015 21:12	WG816429
(S) o-Terphenyl	*97.3*		*50.0-150*		*09/22/2015 21:12*	WG816429

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		100	1	09/23/2015 15:15	WG816799
(S) α,α,α-Trifluorotoluene(FID)	*99.3*		*62.0-128*		*09/23/2015 15:15*	WG816799

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/25/2015 12:40	WG817589
Ethylbenzene	ND		1.00	1	09/25/2015 12:40	WG817589
Isopropylbenzene	ND		1.00	1	09/25/2015 12:40	WG817589
Naphthalene	ND		5.00	1	09/25/2015 12:40	WG817589
n-Propylbenzene	ND		1.00	1	09/25/2015 12:40	WG817589
Toluene	ND		5.00	1	09/25/2015 12:40	WG817589
1,2,4-Trimethylbenzene	ND		1.00	1	09/25/2015 12:40	WG817589
1,3,5-Trimethylbenzene	ND		1.00	1	09/25/2015 12:40	WG817589
Xylenes, Total	ND		3.00	1	09/25/2015 12:40	WG817589
Di-isopropyl ether	ND		1.00	1	09/25/2015 12:40	WG817589
Ethyl tert-butyl ether	ND		1.00	1	09/25/2015 12:40	WG817589
Methyl tert-butyl ether	17.0		1.00	1	09/25/2015 12:40	WG817589
t-Amyl Alcohol	ND		50.0	1	09/25/2015 12:40	WG817589
tert-Butyl alcohol	ND		5.00	1	09/25/2015 12:40	WG817589
tert-Amyl Methyl Ether	ND		1.00	1	09/25/2015 12:40	WG817589
(S) Toluene-d8	*104*		*90.0-115*		*09/25/2015 12:40*	WG817589
(S) Dibromofluoromethane	*102*		*79.0-121*		*09/25/2015 12:40*	WG817589
(S) 4-Bromofluorobenzene	*102*		*80.1-120*		*09/25/2015 12:40*	WG817589

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		100	1	09/22/2015 21:30	WG816429
(S) o-Terphenyl	*97.8*		*50.0-150*		*09/22/2015 21:30*	WG816429

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		100	1	09/23/2015 15:38	WG816799
(S) α,α,α-Trifluorotoluene(FID)	*99.6*		*62.0-128*		*09/23/2015 15:38*	WG816799

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/25/2015 12:59	WG817589
Ethylbenzene	ND		1.00	1	09/25/2015 12:59	WG817589
Isopropylbenzene	ND		1.00	1	09/25/2015 12:59	WG817589
Naphthalene	ND		5.00	1	09/25/2015 12:59	WG817589
n-Propylbenzene	ND		1.00	1	09/25/2015 12:59	WG817589
Toluene	ND		5.00	1	09/25/2015 12:59	WG817589
1,2,4-Trimethylbenzene	ND		1.00	1	09/25/2015 12:59	WG817589
1,3,5-Trimethylbenzene	ND		1.00	1	09/25/2015 12:59	WG817589
Xylenes, Total	ND		3.00	1	09/25/2015 12:59	WG817589
Di-isopropyl ether	ND		1.00	1	09/25/2015 12:59	WG817589
Ethyl tert-butyl ether	ND		1.00	1	09/25/2015 12:59	WG817589
Methyl tert-butyl ether	ND		1.00	1	09/25/2015 12:59	WG817589
t-Amyl Alcohol	ND		50.0	1	09/25/2015 12:59	WG817589
tert-Butyl alcohol	ND		5.00	1	09/25/2015 12:59	WG817589
tert-Amyl Methyl Ether	ND		1.00	1	09/25/2015 12:59	WG817589
(S) Toluene-d8	*104*		*90.0-115*		*09/25/2015 12:59*	WG817589
(S) Dibromofluoromethane	*101*		*79.0-121*		*09/25/2015 12:59*	WG817589
(S) 4-Bromofluorobenzene	*102*		*80.1-120*		*09/25/2015 12:59*	WG817589

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		100	1	09/22/2015 21:48	WG816429
(S) o-Terphenyl	*98.1*		*50.0-150*		*09/22/2015 21:48*	WG816429

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	1750		100	1	09/23/2015 16:01	WG816799
(S) α,α,α-Trifluorotoluene(FID)	*76.2*		*62.0-128*		*09/23/2015 16:01*	WG816799

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		50.0	50	09/25/2015 13:18	WG817589
Ethylbenzene	ND		50.0	50	09/25/2015 13:18	WG817589
Isopropylbenzene	ND		50.0	50	09/25/2015 13:18	WG817589
Naphthalene	ND		250	50	09/25/2015 13:18	WG817589
n-Propylbenzene	ND		50.0	50	09/25/2015 13:18	WG817589
Toluene	ND		250	50	09/25/2015 13:18	WG817589
1,2,4-Trimethylbenzene	ND		50.0	50	09/25/2015 13:18	WG817589
1,3,5-Trimethylbenzene	ND		50.0	50	09/25/2015 13:18	WG817589
Xylenes, Total	ND		150	50	09/25/2015 13:18	WG817589
Di-isopropyl ether	70.0		50.0	50	09/25/2015 13:18	WG817589
Ethyl tert-butyl ether	ND		50.0	50	09/25/2015 13:18	WG817589
Methyl tert-butyl ether	2980		50.0	50	09/25/2015 13:18	WG817589
t-Amyl Alcohol	ND		2500	50	09/25/2015 13:18	WG817589
tert-Butyl alcohol	ND		250	50	09/25/2015 13:18	WG817589
tert-Amyl Methyl Ether	69.4		50.0	50	09/25/2015 13:18	WG817589
(S) Toluene-d8	*104*		*90.0-115*		*09/25/2015 13:18*	WG817589
(S) Dibromofluoromethane	*101*		*79.0-121*		*09/25/2015 13:18*	WG817589
(S) 4-Bromofluorobenzene	*103*		*80.1-120*		*09/25/2015 13:18*	WG817589

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	405		100	1	09/22/2015 22:06	WG816429
(S) o-Terphenyl	*105*		*50.0-150*		*09/22/2015 22:06*	WG816429

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		100	1	09/23/2015 16:25	WG816799
(S) α,α,α-Trifluorotoluene(FID)	*98.8*		*62.0-128*		*09/23/2015 16:25*	WG816799

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/25/2015 13:38	WG817589
Ethylbenzene	ND		1.00	1	09/25/2015 13:38	WG817589
Isopropylbenzene	ND		1.00	1	09/25/2015 13:38	WG817589
Naphthalene	ND		5.00	1	09/25/2015 13:38	WG817589
n-Propylbenzene	ND		1.00	1	09/25/2015 13:38	WG817589
Toluene	ND		5.00	1	09/25/2015 13:38	WG817589
1,2,4-Trimethylbenzene	ND		1.00	1	09/25/2015 13:38	WG817589
1,3,5-Trimethylbenzene	ND		1.00	1	09/25/2015 13:38	WG817589
Xylenes, Total	ND		3.00	1	09/25/2015 13:38	WG817589
Di-isopropyl ether	ND		1.00	1	09/25/2015 13:38	WG817589
Ethyl tert-butyl ether	ND		1.00	1	09/25/2015 13:38	WG817589
Methyl tert-butyl ether	5.53		1.00	1	09/25/2015 13:38	WG817589
t-Amyl Alcohol	ND		50.0	1	09/25/2015 13:38	WG817589
tert-Butyl alcohol	ND		5.00	1	09/25/2015 13:38	WG817589
tert-Amyl Methyl Ether	ND		1.00	1	09/25/2015 13:38	WG817589
(S) Toluene-d8	*105*		*90.0-115*		*09/25/2015 13:38*	WG817589
(S) Dibromofluoromethane	*102*		*79.0-121*		*09/25/2015 13:38*	WG817589
(S) 4-Bromofluorobenzene	*104*		*80.1-120*		*09/25/2015 13:38*	WG817589

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		100	1	09/22/2015 22:23	WG816429
(S) o-Terphenyl	*101*		*50.0-150*		*09/22/2015 22:23*	WG816429

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		100	1	09/23/2015 16:48	WG816799
(S) α,α,α-Trifluorotoluene(FID)	*99.7*		*62.0-128*		*09/23/2015 16:48*	WG816799

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	09/25/2015 13:57	WG817589
Ethylbenzene	ND		1.00	1	09/25/2015 13:57	WG817589
Isopropylbenzene	ND		1.00	1	09/25/2015 13:57	WG817589
Naphthalene	ND		5.00	1	09/25/2015 13:57	WG817589
n-Propylbenzene	ND		1.00	1	09/25/2015 13:57	WG817589
Toluene	ND		5.00	1	09/25/2015 13:57	WG817589
1,2,4-Trimethylbenzene	ND		1.00	1	09/25/2015 13:57	WG817589
1,3,5-Trimethylbenzene	ND		1.00	1	09/25/2015 13:57	WG817589
Xylenes, Total	ND		3.00	1	09/25/2015 13:57	WG817589
Di-isopropyl ether	ND		1.00	1	09/25/2015 13:57	WG817589
Ethyl tert-butyl ether	ND		1.00	1	09/25/2015 13:57	WG817589
Methyl tert-butyl ether	45.7		1.00	1	09/25/2015 13:57	WG817589
t-Amyl Alcohol	ND		50.0	1	09/25/2015 13:57	WG817589
tert-Butyl alcohol	ND		5.00	1	09/25/2015 13:57	WG817589
tert-Amyl Methyl Ether	ND		1.00	1	09/25/2015 13:57	WG817589
(S) Toluene-d8	*104*		*90.0-115*		*09/25/2015 13:57*	WG817589
(S) Dibromofluoromethane	*101*		*79.0-121*		*09/25/2015 13:57*	WG817589
(S) 4-Bromofluorobenzene	*103*		*80.1-120*		*09/25/2015 13:57*	WG817589

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		100	1	09/22/2015 22:41	WG816429
(S) o-Terphenyl	*99.4*		*50.0-150*		*09/22/2015 22:41*	WG816429

QUALITY CONTROL SUMMARY

L789664-01,03,04,05,06,07,08

Method Blank (MB)

(MB) 09/23/15 09:42

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
TPH (GC/FID) Low Fraction	ND		0.100
(S) a,a,a-Trifluorotoluene(FID)	*100*		*62.0-128*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/23/15 08:33 • (LCSD) 09/23/15 08:56

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	4.81	5.59	87.4	102	67.0-132			15.1	20
(S) a,a,a-Trifluorotoluene(FID)				*98.9*	*97.1*	*62.0-128*				

L789664-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/23/15 12:11 • (MS) 09/23/15 11:02 • (MSD) 09/23/15 11:25

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	ND	4.73	6.92	86.0	126	1	50.0-143		J3	37.7	20
(S) a,a,a-Trifluorotoluene(FID)					*97.7*	*95.8*		*62.0-128*				

Method Blank (MB)

(MB) 09/24/15 20:34

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
TPH (GC/FID) Low Fraction	ND		0.100
(S) a,a,a-Trifluorotoluene(FID)	*93.8*		*62.0-128*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/24/15 19:27 • (LCSD) 09/24/15 19:49

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.23	6.05	95.2	110	67.0-132			14.5	20
(S) a,a,a-Trifluorotoluene(FID)				*101*	*102*	*62.0-128*				

L790604-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/25/15 12:23 • (MS) 09/25/15 06:12 • (MSD) 09/25/15 06:35

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	ND	5.53	6.10	101	111	1	50.0-143			9.74	20
(S) a,a,a-Trifluorotoluene(FID)					*102*	*102*		*62.0-128*				

Method Blank (MB)

(MB) 09/25/15 07:17

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Benzene	ND		0.00100
Di-isopropyl ether	ND		0.00100
Ethylbenzene	ND		0.00100
Isopropylbenzene	ND		0.00100
Methyl tert-butyl ether	ND		0.00100
Naphthalene	ND		0.00500
n-Propylbenzene	ND		0.00100
Toluene	ND		0.00500
1,2,4-Trimethylbenzene	ND		0.00100
1,3,5-Trimethylbenzene	ND		0.00100
Xylenes, Total	ND		0.00300
tert-Amyl Methyl Ether	ND		0.00100
Ethyl tert-butyl ether	ND		0.00100
tert-Butyl alcohol	ND		0.00500
(S) Toluene-d8	*104*		*90.0-115*
(S) Dibromofluoromethane	*98.8*		*79.0-121*
(S) 4-Bromofluorobenzene	*97.9*		*80.1-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/25/15 05:06 • (LCSD) 09/25/15 05:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0237	0.0248	94.8	99.1	73.0-122			4.41	20
Di-isopropyl ether	0.0250	0.0261	0.0275	104	110	65.1-135			4.97	20
Ethylbenzene	0.0250	0.0249	0.0271	99.7	108	80.9-121			8.39	20
Isopropylbenzene	0.0250	0.0241	0.0258	96.4	103	81.6-124			6.83	20
Methyl tert-butyl ether	0.0250	0.0258	0.0275	103	110	70.1-125			6.25	20
Naphthalene	0.0250	0.0266	0.0277	106	111	69.7-134			4.13	20
n-Propylbenzene	0.0250	0.0251	0.0270	100	108	81.9-122			7.10	20
Toluene	0.0250	0.0239	0.0253	95.8	101	77.9-116			5.55	20
1,2,4-Trimethylbenzene	0.0250	0.0242	0.0264	96.9	106	79.0-122			8.49	20
1,3,5-Trimethylbenzene	0.0250	0.0241	0.0260	96.3	104	81.0-123			7.53	20
Xylenes, Total	0.0750	0.0725	0.0778	96.6	104	79.2-122			7.08	20
(S) Toluene-d8				*104*	*103*	*90.0-115*				
(S) Dibromofluoromethane				*101*	*100*	*79.0-121*				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/25/15 05:06 • (LCSD) 09/25/15 05:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
(S) 4-Bromofluorobenzene				*103*	*105*	*80.1-120*				

L789531-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/25/15 08:29 • (MS) 09/25/15 08:49 • (MSD) 09/25/15 09:08

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	ND	0.0248	0.0241	99.1	96.6	1	58.6-133			2.56	20
Di-isopropyl ether	0.0250	ND	0.0272	0.0267	109	107	1	59.9-140			1.74	20
Ethylbenzene	0.0250	ND	0.0258	0.0254	103	102	1	62.7-136			1.48	20
Isopropylbenzene	0.0250	ND	0.0251	0.0244	100	97.4	1	67.4-136			2.94	20
Methyl tert-butyl ether	0.0250	ND	0.0273	0.0269	109	108	1	61.4-136			1.53	20
Naphthalene	0.0250	ND	0.0276	0.0278	110	111	1	61.8-143			0.740	20
n-Propylbenzene	0.0250	ND	0.0265	0.0258	106	103	1	63.2-139			2.85	20
Toluene	0.0250	0.000484	0.0248	0.0246	97.5	96.3	1	67.8-124			1.19	20
1,2,4-Trimethylbenzene	0.0250	ND	0.0253	0.0250	101	100	1	60.5-137			1.15	20
1,3,5-Trimethylbenzene	0.0250	ND	0.0252	0.0247	101	98.7	1	67.9-134			1.89	20
Xylenes, Total	0.0750	ND	0.0757	0.0735	101	98.0	1	65.6-133			2.94	20
(S) Toluene-d8					*104*	*105*		*90.0-115*				
(S) Dibromofluoromethane					*102*	*102*		*79.0-121*				
(S) 4-Bromofluorobenzene					*102*	*101*		*80.1-120*				

Method Blank (MB)

(MB) 09/22/15 18:33

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
TPH (GC/FID) High Fraction	ND		0.100
(S) o-Terphenyl	*99.4*		*50.0-150*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/22/15 18:51 • (LCSD) 09/22/15 19:09

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	1.50	1.34	1.35	89.1	90.3	50.0-150			1.29	20
(S) o-Terphenyl				*107*	*108*	*50.0-150*				

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

State Accreditations

Alabama	40660
Alaska	UST-080
Arizona	AZ0612
Arkansas	88-0469
California	01157CA
Colorado	TN00003
Conneticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia [1]	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
Iowa	364
Kansas	E-10277
Kentucky [1]	90010
Kentucky [2]	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina [1]	DW21704
North Carolina [2]	41
North Dakota	R-140
Ohio–VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee [1 4]	2006
Texas	T 104704245-07-TX
Texas [5]	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

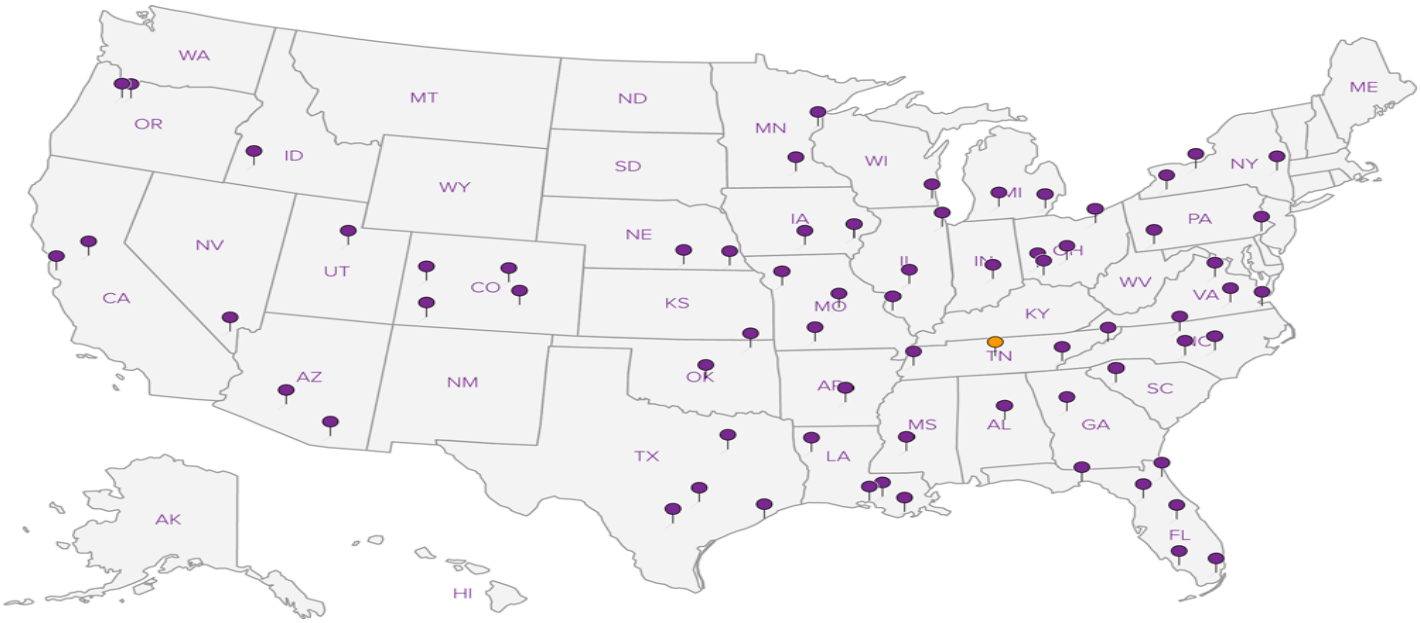
[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01
Canada	1461.01
EPA–Crypto	TN00003
AIHA	100789
DOD	1461.01
USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



BP Environmental

8615 Commerce Drive, Unit One
Easton, MD 21601

Billing information:
Accounts Payable
8615 Commerce Drive, Unit One
Easton, MD 21601

Report to: Ms. Lou Ann Parson

Email To: laparson@bpenvironmental.net

Project Description: H&J-101-01 Quarterly GW monitoring

City/State Collected: Gambrills MD

Phone: 410-819-0919
Fax:

Client Project #: H&J-101-01

Lab Project #: BPENV-H&J-101-01

Collected by (print): Jonathan Parson

Site/Facility ID #: H&J Amoco, Inc.

P.O. #: H&J-101-01

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No ✓Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

ESC LAB SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 785664

B114

Acctnum: BPENV
Template:
Prelogin:
TSR: 034 - Craig Cothron
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	DRO 40ml Amb-HCl 8015	GRO 40ml Amb-HCl 8015	VOC + OXY 40ml Amb-HCl ~~A-60~~ 8260 pH<2 12 SEPT 15 0315	Rem./Contaminant	Sample # (lab only)
MW-01	Grab	GW	-	9/17/15	1:00	7	X	X	X		01
MW-02			-	9/17/15	11:40		X	X	X		02
MW-03			-	9/17/15	2:30		X	X	X		03
MW-04			-	9/16/15	4:30		X	X	X		04
MW-05			-	9/17/15	10:15		X	X	X		05
MW-06			-	9/16/15	2:30		X	X	X		06
MW-07			-	9/16/15	10:45		X	X	X		07
MW-08			-	9/16/15	12:00		X	X	X		08
TRIP BLANK - COLLER COOL	—	OT	-	—	—	2				HOLD	

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other LAB-SUPPLIED LIQUID

Remarks: 8029240050550

pH ___ Temp ___
Flow ___ Other ___

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Gary K [illegible]	18 SEPT 2015	1245	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			[illegible]

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ ___

Temp 3.1 °C Bottles Received: 14 57

Date: 9/19/15 Time: 900

Condition: (lab use only) [illegible] JW

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF:

APPENDIX C

ANALYTICAL REPORT

September 28, 2015

BP Environmental

Sample Delivery Group:	L789661
Samples Received:	09/19/2015
Project Number:	H&J-101-01
Description:	Site Supply Well Sampling
Site:	H&J Amoco, Inc.
Report To:	Ms. Lou Ann Parson 8615 Commerce Drive, Unit One Easton, MD 21601

Entire Report Reviewed By:

Craig Cothron
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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AA-94-0521 L789661-01 GW

Collected by	Collected date/time	Received date/time
Gary Lasako	09/16/15 11:25	09/19/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (GC/MS) by Method 524.2	WG816519	1	09/21/15 12:53	09/21/15 12:53	JAH

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Craig Cothron
Technical Service Representative

Volatile Organic Compounds (GC/MS) by Method 524.2

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.500	1	09/21/2015 12:53	WG816519
Carbon tetrachloride	ND		0.500	1	09/21/2015 12:53	WG816519
1,4-Dichlorobenzene	ND		0.500	1	09/21/2015 12:53	WG816519
1,2-Dichloroethane	ND		0.500	1	09/21/2015 12:53	WG816519
1,1-Dichloroethene	ND		0.500	1	09/21/2015 12:53	WG816519
1,1,1-Trichloroethane	ND		0.500	1	09/21/2015 12:53	WG816519
Trichloroethene	ND		0.500	1	09/21/2015 12:53	WG816519
Vinyl chloride	ND		0.500	1	09/21/2015 12:53	WG816519
1,2,4-Trichlorobenzene	ND		0.500	1	09/21/2015 12:53	WG816519
cis-1,2-Dichloroethene	ND		0.500	1	09/21/2015 12:53	WG816519
Xylenes, Total	ND		0.500	1	09/21/2015 12:53	WG816519
Methylene chloride	ND		0.500	1	09/21/2015 12:53	WG816519
1,2-Dichlorobenzene	ND		0.500	1	09/21/2015 12:53	WG816519
trans-1,2-Dichloroethene	ND		0.500	1	09/21/2015 12:53	WG816519
1,2-Dichloropropane	ND		0.500	1	09/21/2015 12:53	WG816519
1,1,2-Trichloroethane	ND		0.500	1	09/21/2015 12:53	WG816519
Tetrachloroethene	ND		0.500	1	09/21/2015 12:53	WG816519
Chlorobenzene	ND		0.500	1	09/21/2015 12:53	WG816519
Toluene	ND		0.500	1	09/21/2015 12:53	WG816519
Ethylbenzene	ND		0.500	1	09/21/2015 12:53	WG816519
Styrene	ND		0.500	1	09/21/2015 12:53	WG816519
Bromobenzene	ND		0.500	1	09/21/2015 12:53	WG816519
Bromodichloromethane	ND		0.500	1	09/21/2015 12:53	WG816519
Bromoform	ND		0.500	1	09/21/2015 12:53	WG816519
Bromomethane	ND		0.500	1	09/21/2015 12:53	WG816519
Chlorodibromomethane	ND		0.500	1	09/21/2015 12:53	WG816519
Chloroethane	ND		0.500	1	09/21/2015 12:53	WG816519
Chloroform	ND		0.500	1	09/21/2015 12:53	WG816519
Chloromethane	ND		0.500	1	09/21/2015 12:53	WG816519
2-Chlorotoluene	ND		0.500	1	09/21/2015 12:53	WG816519
4-Chlorotoluene	ND		0.500	1	09/21/2015 12:53	WG816519
Dibromomethane	ND		0.500	1	09/21/2015 12:53	WG816519
Methyl tert-butyl ether	ND		0.500	1	09/21/2015 12:53	WG816519
1,3-Dichlorobenzene	ND		0.500	1	09/21/2015 12:53	WG816519
1,1-Dichloroethane	ND		0.500	1	09/21/2015 12:53	WG816519
1,3-Dichloropropane	ND		0.500	1	09/21/2015 12:53	WG816519
2,2-Dichloropropane	ND		0.500	1	09/21/2015 12:53	WG816519
1,1-Dichloropropene	ND		0.500	1	09/21/2015 12:53	WG816519
1,3-Dichloropropene	ND		0.500	1	09/21/2015 12:53	WG816519
1,1,1,2-Tetrachloroethane	ND		0.500	1	09/21/2015 12:53	WG816519
1,1,2,2-Tetrachloroethane	ND		0.500	1	09/21/2015 12:53	WG816519
1,2,3-Trichloropropane	ND		0.500	1	09/21/2015 12:53	WG816519
Naphthalene	ND		5.00	1	09/21/2015 12:53	WG816519
(S) 4-Bromofluorobenzene	*93.2*		*70.0-130*		*09/21/2015 12:53*	WG816519
(S) 1,2-Dichlorobenzene-d4	*98.4*		*70.0-130*		*09/21/2015 12:53*	WG816519

Method Blank (MB)

(MB) 09/21/15 11:22

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Benzene	ND		0.000500
Carbon tetrachloride	ND		0.000500
1,4-Dichlorobenzene	ND		0.000500
1,2-Dichloroethane	ND		0.000500
1,1-Dichloroethene	ND		0.000500
1,1,1-Trichloroethane	ND		0.000500
Trichloroethene	ND		0.000500
Vinyl chloride	ND		0.000500
1,2,4-Trichlorobenzene	ND		0.000500
cis-1,2-Dichloroethene	ND		0.000500
Xylenes, Total	ND		0.000500
Methylene chloride	ND		0.000500
1,2-Dichlorobenzene	ND		0.000500
trans-1,2-Dichloroethene	ND		0.000500
1,2-Dichloropropane	ND		0.000500
1,1,2-Trichloroethane	ND		0.000500
Tetrachloroethene	ND		0.000500
Chlorobenzene	ND		0.000500
Toluene	ND		0.000500
Ethylbenzene	ND		0.000500
Styrene	ND		0.000500
Bromobenzene	ND		0.000500
Bromodichloromethane	ND		0.000500
Bromoform	ND		0.000500
Bromomethane	ND		0.000500
Chlorodibromomethane	ND		0.000500
Chloroethane	ND		0.000500
Chloroform	ND		0.000500
Chloromethane	ND		0.000500
2-Chlorotoluene	ND		0.000500
4-Chlorotoluene	ND		0.000500
Dibromomethane	ND		0.000500
Methyl tert-butyl ether	ND		0.000500
1,3-Dichlorobenzene	ND		0.000500
1,1-Dichloroethane	ND		0.000500
1,3-Dichloropropane	ND		0.000500

Method Blank (MB)

(MB) 09/21/15 11:22

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
2,2-Dichloropropane	ND		0.000500
1,1-Dichloropropene	ND		0.000500
1,3-Dichloropropene	ND		0.000500
1,1,1,2-Tetrachloroethane	ND		0.000500
1,1,2,2-Tetrachloroethane	ND		0.000500
1,2,3-Trichloropropane	ND		0.000500
Naphthalene	ND		0.00500
(S) 4-Bromofluorobenzene	*97.4*		*70.0-130*
(S) 1,2-Dichlorobenzene-d4	*104*		*70.0-130*

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

State Accreditations

Alabama	40660
Alaska	UST-080
Arizona	AZ0612
Arkansas	88-0469
California	01157CA
Colorado	TN00003
Conneticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia [1]	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
Iowa	364
Kansas	E-10277
Kentucky [1]	90010
Kentucky [2]	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina [1]	DW21704
North Carolina [2]	41
North Dakota	R-140
Ohio–VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee [1 4]	2006
Texas	T 104704245-07-TX
Texas [5]	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

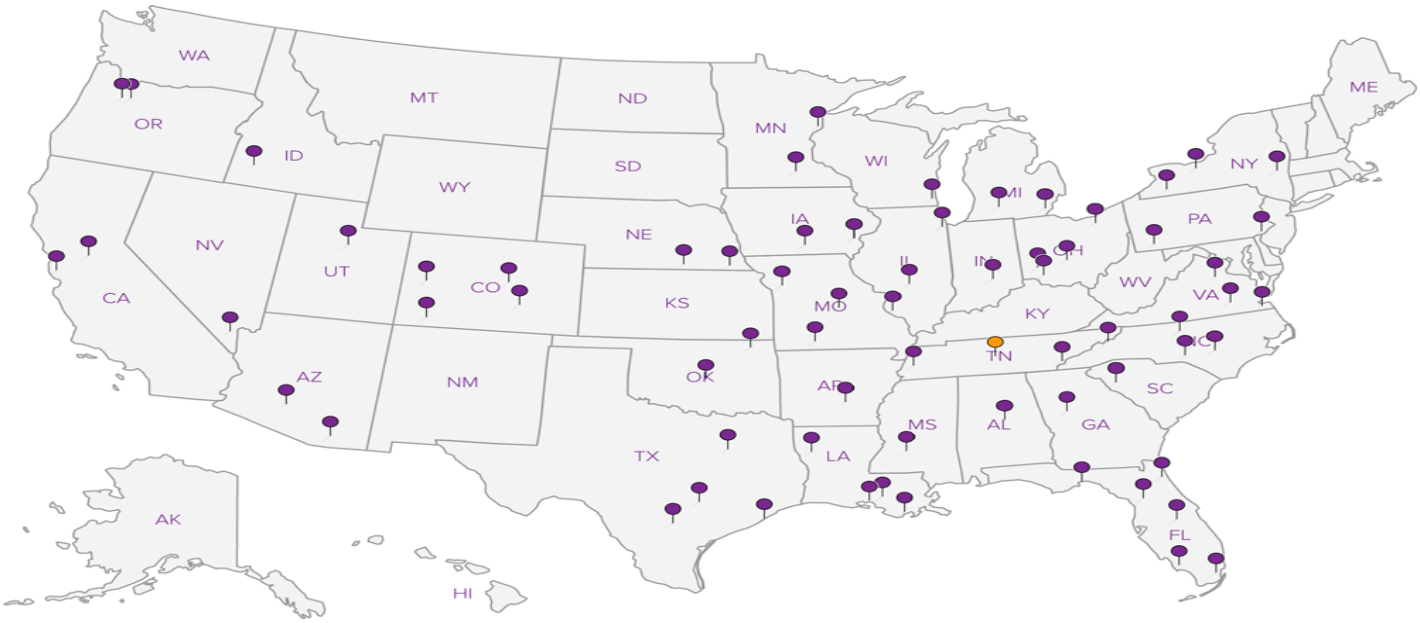
[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01
Canada	1461.01
EPA–Crypto	TN00003
AIHA	100789
DOD	1461.01
USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



BP Environmental

8615 Commerce Drive, Unit One
Easton, MD 21601

Billing Information:
Accounts Payable
8615 Commerce Drive, Unit One
Easton, MD 21601

Report to: GARY LASAKO

Email To: ADMIN@BPENVIRONMENTAL.NET

Project Description: SITE SUPPLY WELL SAMPLING

City/State Collected: GAMBRILLS, MD

Phone: 410-819-0919
Fax:

Client Project #: H+J-101-01

Lab Project #: H+J-101-01

Collected by (print): Gary Lasako

Site/Facility ID #:

P.O. #: H+J-101-01

Collected by (signature): Gary K Lasako

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No ___Yes
FAX? ___No ___Yes

Analysis / Container / Preservative: 40mL Amb HCl Ascorbic Acid; VOCs + OXY + MTBE via 524.2

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOCs + OXY + MTBE via 524.2	Rem./Contaminant	Sample # (lab only)
AA-94-0501	G	DW	—	16 SEPT 15	1125	5	X		01
TRIP BLANK - COOLER 0001	—	OT	—	—	—	1		HOLD	

*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other LAB-SUPPLIED LIQUID

Remarks:
COOLER ID # 0001

pH ___ Temp ___
Flow ___ Other ___

5851472 2172

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Gary K Lasako	18 SEPT 2015	1245	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			Bill Le

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ ___

Temp: 3.1 °C Bottles Received: 5

Date: 9-19-15 Time: 0900

Condition: (lab use only) a JW7

COC Seal Intact: ✓ ___Y ___N ___NA

pH Checked: NCF:

Chain of Custody Page 1 of 1

ESC LAB SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 78961

K061

Acctnum: BPENV
Template:
Prelogin:
TSR: 034 - Craig Cothron
PB:
Shipped Via:

APPENDIX D

ANALYTICAL REPORT

September 28, 2015

BP Environmental

Sample Delivery Group:	L789658
Samples Received:	09/19/2015
Project Number:	H&J-101-01
Description:	Off-Side Groundwater Sampling
Site:	11762
Report To:	Gary Lasako 8615 Commerce Drive, Unit One Easton, MD 21601

Entire Report Reviewed By:

Craig Cothron
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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738 B ROUTE 3 N L789658-01 GW

Collected by: Gary Lasako
Collected date/time: 09/16/15 12:05
Received date/time: 09/19/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (GC/MS) by Method 524.2	WG816519	1	09/21/15 11:45	09/21/15 11:45	JAH

745 MO ROUTE 3 N L789658-02 GW

Collected by: Gary Lasako
Collected date/time: 09/16/15 12:35
Received date/time: 09/19/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (GC/MS) by Method 524.2	WG816519	1	09/21/15 12:08	09/21/15 12:08	JAH

AA-94-7975 L789658-03 GW

Collected by: Gary Lasako
Collected date/time: 09/16/15 13:05
Received date/time: 09/19/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (GC/MS) by Method 524.2	WG816519	1	09/21/15 12:31	09/21/15 12:31	JAH

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Craig Cothron
Technical Service Representative

Volatile Organic Compounds (GC/MS) by Method 524.2

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.500	1	09/21/2015 11:45	WG816519
Carbon tetrachloride	ND		0.500	1	09/21/2015 11:45	WG816519
1,4-Dichlorobenzene	ND		0.500	1	09/21/2015 11:45	WG816519
1,2-Dichloroethane	ND		0.500	1	09/21/2015 11:45	WG816519
1,1-Dichloroethene	ND		0.500	1	09/21/2015 11:45	WG816519
1,1,1-Trichloroethane	ND		0.500	1	09/21/2015 11:45	WG816519
Trichloroethene	ND		0.500	1	09/21/2015 11:45	WG816519
Vinyl chloride	ND		0.500	1	09/21/2015 11:45	WG816519
1,2,4-Trichlorobenzene	ND		0.500	1	09/21/2015 11:45	WG816519
cis-1,2-Dichloroethene	ND		0.500	1	09/21/2015 11:45	WG816519
Xylenes, Total	ND		0.500	1	09/21/2015 11:45	WG816519
Methylene chloride	ND		0.500	1	09/21/2015 11:45	WG816519
1,2-Dichlorobenzene	ND		0.500	1	09/21/2015 11:45	WG816519
trans-1,2-Dichloroethene	ND		0.500	1	09/21/2015 11:45	WG816519
1,2-Dichloropropane	ND		0.500	1	09/21/2015 11:45	WG816519
1,1,2-Trichloroethane	ND		0.500	1	09/21/2015 11:45	WG816519
Tetrachloroethene	ND		0.500	1	09/21/2015 11:45	WG816519
Chlorobenzene	ND		0.500	1	09/21/2015 11:45	WG816519
Toluene	ND		0.500	1	09/21/2015 11:45	WG816519
Ethylbenzene	ND		0.500	1	09/21/2015 11:45	WG816519
Styrene	ND		0.500	1	09/21/2015 11:45	WG816519
Bromobenzene	ND		0.500	1	09/21/2015 11:45	WG816519
Bromodichloromethane	ND		0.500	1	09/21/2015 11:45	WG816519
Bromoform	ND		0.500	1	09/21/2015 11:45	WG816519
Bromomethane	ND		0.500	1	09/21/2015 11:45	WG816519
Chlorodibromomethane	ND		0.500	1	09/21/2015 11:45	WG816519
Chloroethane	ND		0.500	1	09/21/2015 11:45	WG816519
Chloroform	ND		0.500	1	09/21/2015 11:45	WG816519
Chloromethane	ND		0.500	1	09/21/2015 11:45	WG816519
2-Chlorotoluene	ND		0.500	1	09/21/2015 11:45	WG816519
4-Chlorotoluene	ND		0.500	1	09/21/2015 11:45	WG816519
Dibromomethane	ND		0.500	1	09/21/2015 11:45	WG816519
Methyl tert-butyl ether	ND		0.500	1	09/21/2015 11:45	WG816519
1,3-Dichlorobenzene	ND		0.500	1	09/21/2015 11:45	WG816519
1,1-Dichloroethane	ND		0.500	1	09/21/2015 11:45	WG816519
1,3-Dichloropropane	ND		0.500	1	09/21/2015 11:45	WG816519
2,2-Dichloropropane	ND		0.500	1	09/21/2015 11:45	WG816519
1,1-Dichloropropene	ND		0.500	1	09/21/2015 11:45	WG816519
1,3-Dichloropropene	ND		0.500	1	09/21/2015 11:45	WG816519
1,1,1,2-Tetrachloroethane	ND		0.500	1	09/21/2015 11:45	WG816519
1,1,2,2-Tetrachloroethane	ND		0.500	1	09/21/2015 11:45	WG816519
1,2,3-Trichloropropane	ND		0.500	1	09/21/2015 11:45	WG816519
Naphthalene	ND		5.00	1	09/21/2015 11:45	WG816519
(S) 4-Bromofluorobenzene	*97.4*		*70.0-130*		*09/21/2015 11:45*	WG816519
(S) 1,2-Dichlorobenzene-d4	*100*		*70.0-130*		*09/21/2015 11:45*	WG816519

Volatile Organic Compounds (GC/MS) by Method 524.2

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.500	1	09/21/2015 12:08	WG816519
Carbon tetrachloride	ND		0.500	1	09/21/2015 12:08	WG816519
1,4-Dichlorobenzene	ND		0.500	1	09/21/2015 12:08	WG816519
1,2-Dichloroethane	ND		0.500	1	09/21/2015 12:08	WG816519
1,1-Dichloroethene	ND		0.500	1	09/21/2015 12:08	WG816519
1,1,1-Trichloroethane	ND		0.500	1	09/21/2015 12:08	WG816519
Trichloroethene	ND		0.500	1	09/21/2015 12:08	WG816519
Vinyl chloride	ND		0.500	1	09/21/2015 12:08	WG816519
1,2,4-Trichlorobenzene	ND		0.500	1	09/21/2015 12:08	WG816519
cis-1,2-Dichloroethene	ND		0.500	1	09/21/2015 12:08	WG816519
Xylenes, Total	ND		0.500	1	09/21/2015 12:08	WG816519
Methylene chloride	ND		0.500	1	09/21/2015 12:08	WG816519
1,2-Dichlorobenzene	ND		0.500	1	09/21/2015 12:08	WG816519
trans-1,2-Dichloroethene	ND		0.500	1	09/21/2015 12:08	WG816519
1,2-Dichloropropane	ND		0.500	1	09/21/2015 12:08	WG816519
1,1,2-Trichloroethane	ND		0.500	1	09/21/2015 12:08	WG816519
Tetrachloroethene	ND		0.500	1	09/21/2015 12:08	WG816519
Chlorobenzene	ND		0.500	1	09/21/2015 12:08	WG816519
Toluene	ND		0.500	1	09/21/2015 12:08	WG816519
Ethylbenzene	ND		0.500	1	09/21/2015 12:08	WG816519
Styrene	ND		0.500	1	09/21/2015 12:08	WG816519
Bromobenzene	ND		0.500	1	09/21/2015 12:08	WG816519
Bromodichloromethane	ND		0.500	1	09/21/2015 12:08	WG816519
Bromoform	ND		0.500	1	09/21/2015 12:08	WG816519
Bromomethane	ND		0.500	1	09/21/2015 12:08	WG816519
Chlorodibromomethane	ND		0.500	1	09/21/2015 12:08	WG816519
Chloroethane	ND		0.500	1	09/21/2015 12:08	WG816519
Chloroform	ND		0.500	1	09/21/2015 12:08	WG816519
Chloromethane	ND		0.500	1	09/21/2015 12:08	WG816519
2-Chlorotoluene	ND		0.500	1	09/21/2015 12:08	WG816519
4-Chlorotoluene	ND		0.500	1	09/21/2015 12:08	WG816519
Dibromomethane	ND		0.500	1	09/21/2015 12:08	WG816519
Methyl tert-butyl ether	ND		0.500	1	09/21/2015 12:08	WG816519
1,3-Dichlorobenzene	ND		0.500	1	09/21/2015 12:08	WG816519
1,1-Dichloroethane	ND		0.500	1	09/21/2015 12:08	WG816519
1,3-Dichloropropane	ND		0.500	1	09/21/2015 12:08	WG816519
2,2-Dichloropropane	ND		0.500	1	09/21/2015 12:08	WG816519
1,1-Dichloropropene	ND		0.500	1	09/21/2015 12:08	WG816519
1,3-Dichloropropene	ND		0.500	1	09/21/2015 12:08	WG816519
1,1,1,2-Tetrachloroethane	ND		0.500	1	09/21/2015 12:08	WG816519
1,1,2,2-Tetrachloroethane	ND		0.500	1	09/21/2015 12:08	WG816519
1,2,3-Trichloropropane	ND		0.500	1	09/21/2015 12:08	WG816519
Naphthalene	ND		5.00	1	09/21/2015 12:08	WG816519
(S) 4-Bromofluorobenzene	*99.1*		*70.0-130*		*09/21/2015 12:08*	WG816519
(S) 1,2-Dichlorobenzene-d4	*101*		*70.0-130*		*09/21/2015 12:08*	WG816519

Volatile Organic Compounds (GC/MS) by Method 524.2

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.500	1	09/21/2015 12:31	WG816519
Carbon tetrachloride	ND		0.500	1	09/21/2015 12:31	WG816519
1,4-Dichlorobenzene	ND		0.500	1	09/21/2015 12:31	WG816519
1,2-Dichloroethane	ND		0.500	1	09/21/2015 12:31	WG816519
1,1-Dichloroethene	ND		0.500	1	09/21/2015 12:31	WG816519
1,1,1-Trichloroethane	ND		0.500	1	09/21/2015 12:31	WG816519
Trichloroethene	ND		0.500	1	09/21/2015 12:31	WG816519
Vinyl chloride	ND		0.500	1	09/21/2015 12:31	WG816519
1,2,4-Trichlorobenzene	ND		0.500	1	09/21/2015 12:31	WG816519
cis-1,2-Dichloroethene	ND		0.500	1	09/21/2015 12:31	WG816519
Xylenes, Total	ND		0.500	1	09/21/2015 12:31	WG816519
Methylene chloride	ND		0.500	1	09/21/2015 12:31	WG816519
1,2-Dichlorobenzene	ND		0.500	1	09/21/2015 12:31	WG816519
trans-1,2-Dichloroethene	ND		0.500	1	09/21/2015 12:31	WG816519
1,2-Dichloropropane	ND		0.500	1	09/21/2015 12:31	WG816519
1,1,2-Trichloroethane	ND		0.500	1	09/21/2015 12:31	WG816519
Tetrachloroethene	ND		0.500	1	09/21/2015 12:31	WG816519
Chlorobenzene	ND		0.500	1	09/21/2015 12:31	WG816519
Toluene	ND		0.500	1	09/21/2015 12:31	WG816519
Ethylbenzene	ND		0.500	1	09/21/2015 12:31	WG816519
Styrene	ND		0.500	1	09/21/2015 12:31	WG816519
Bromobenzene	ND		0.500	1	09/21/2015 12:31	WG816519
Bromodichloromethane	ND		0.500	1	09/21/2015 12:31	WG816519
Bromoform	ND		0.500	1	09/21/2015 12:31	WG816519
Bromomethane	ND		0.500	1	09/21/2015 12:31	WG816519
Chlorodibromomethane	ND		0.500	1	09/21/2015 12:31	WG816519
Chloroethane	ND		0.500	1	09/21/2015 12:31	WG816519
Chloroform	ND		0.500	1	09/21/2015 12:31	WG816519
Chloromethane	ND		0.500	1	09/21/2015 12:31	WG816519
2-Chlorotoluene	ND		0.500	1	09/21/2015 12:31	WG816519
4-Chlorotoluene	ND		0.500	1	09/21/2015 12:31	WG816519
Dibromomethane	ND		0.500	1	09/21/2015 12:31	WG816519
Methyl tert-butyl ether	ND		0.500	1	09/21/2015 12:31	WG816519
1,3-Dichlorobenzene	ND		0.500	1	09/21/2015 12:31	WG816519
1,1-Dichloroethane	ND		0.500	1	09/21/2015 12:31	WG816519
1,3-Dichloropropane	ND		0.500	1	09/21/2015 12:31	WG816519
2,2-Dichloropropane	ND		0.500	1	09/21/2015 12:31	WG816519
1,1-Dichloropropene	ND		0.500	1	09/21/2015 12:31	WG816519
1,3-Dichloropropene	ND		0.500	1	09/21/2015 12:31	WG816519
1,1,1,2-Tetrachloroethane	ND		0.500	1	09/21/2015 12:31	WG816519
1,1,2,2-Tetrachloroethane	ND		0.500	1	09/21/2015 12:31	WG816519
1,2,3-Trichloropropane	ND		0.500	1	09/21/2015 12:31	WG816519
Naphthalene	ND		5.00	1	09/21/2015 12:31	WG816519
(S) 4-Bromofluorobenzene	*97.1*		*70.0-130*		*09/21/2015 12:31*	WG816519
(S) 1,2-Dichlorobenzene-d4	*103*		*70.0-130*		*09/21/2015 12:31*	WG816519

Method Blank (MB)

(MB) 09/21/15 11:22

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Benzene	ND		0.000500
Carbon tetrachloride	ND		0.000500
1,4-Dichlorobenzene	ND		0.000500
1,2-Dichloroethane	ND		0.000500
1,1-Dichloroethene	ND		0.000500
1,1,1-Trichloroethane	ND		0.000500
Trichloroethene	ND		0.000500
Vinyl chloride	ND		0.000500
1,2,4-Trichlorobenzene	ND		0.000500
cis-1,2-Dichloroethene	ND		0.000500
Xylenes, Total	ND		0.000500
Methylene chloride	ND		0.000500
1,2-Dichlorobenzene	ND		0.000500
trans-1,2-Dichloroethene	ND		0.000500
1,2-Dichloropropane	ND		0.000500
1,1,2-Trichloroethane	ND		0.000500
Tetrachloroethene	ND		0.000500
Chlorobenzene	ND		0.000500
Toluene	ND		0.000500
Ethylbenzene	ND		0.000500
Styrene	ND		0.000500
Bromobenzene	ND		0.000500
Bromodichloromethane	ND		0.000500
Bromoform	ND		0.000500
Bromomethane	ND		0.000500
Chlorodibromomethane	ND		0.000500
Chloroethane	ND		0.000500
Chloroform	ND		0.000500
Chloromethane	ND		0.000500
2-Chlorotoluene	ND		0.000500
4-Chlorotoluene	ND		0.000500
Dibromomethane	ND		0.000500
Methyl tert-butyl ether	ND		0.000500
1,3-Dichlorobenzene	ND		0.000500
1,1-Dichloroethane	ND		0.000500
1,3-Dichloropropane	ND		0.000500

Method Blank (MB)

(MB) 09/21/15 11:22

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
2,2-Dichloropropane	ND		0.000500
1,1-Dichloropropene	ND		0.000500
1,3-Dichloropropene	ND		0.000500
1,1,1,2-Tetrachloroethane	ND		0.000500
1,1,2,2-Tetrachloroethane	ND		0.000500
1,2,3-Trichloropropane	ND		0.000500
Naphthalene	ND		0.00500
(S) 4-Bromofluorobenzene	*97.4*		*70.0-130*
(S) 1,2-Dichlorobenzene-d4	*104*		*70.0-130*

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

State Accreditations

Alabama	40660
Alaska	UST-080
Arizona	AZ0612
Arkansas	88-0469
California	01157CA
Colorado	TN00003
Conneticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia [1]	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
Iowa	364
Kansas	E-10277
Kentucky [1]	90010
Kentucky [2]	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina [1]	DW21704
North Carolina [2]	41
North Dakota	R-140
Ohio–VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee [1 4]	2006
Texas	T 104704245-07-TX
Texas [5]	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

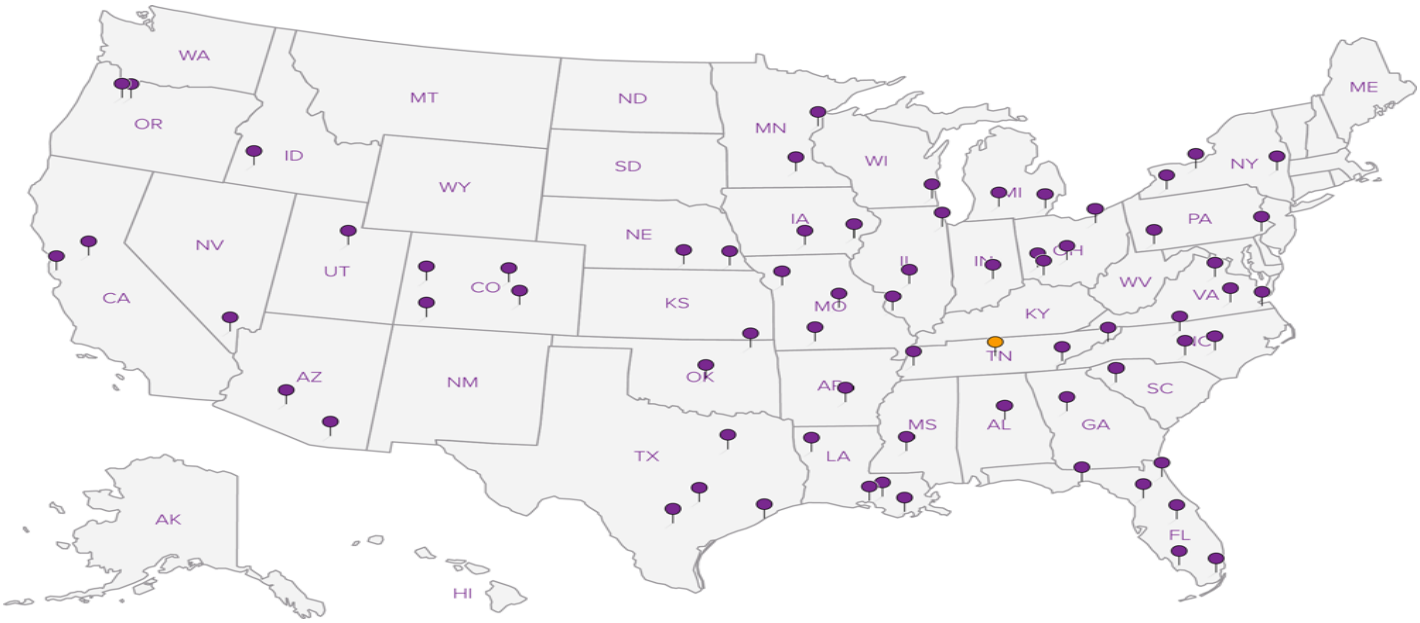
[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01
Canada	1461.01
EPA–Crypto	TN00003
AIHA	100789
DOD	1461.01
USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



BP Environmental

8615 Commerce Drive, Unit One
Easton, MD 21601

Billing Information:
Accounts Payable
8615 Commerce Drive, Unit One
Easton, MD 21601

Report to: GARY LASARO

Email To: ADMIN@BPENVIRONMONITOR.NET

Project Description: OFF-SITE GROUNDWATER SAMPLING

City/State Collected: GAITHERSBURG, MD

Phone: 410-819-0919
Fax:

Client Project #: H+J-101-01

Lab Project #

Collected by (print): GARY LASARO

Site/Facility ID #

P.O. #: H+J-101-01

Collected by (signature): [signature]

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No X Yes
FAX? ___No ___Yes

Analysis / Container / Preservative: VOCs + OXY + NAPH VIA 524.2 (4oz Amb HCl Ascorbic Acid)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOCs + OXY + NAPH VIA 524.2	Rem./Contaminant	Sample # (lab only)
738 B ROUTE 3 N	G	DW	—	16 SEPT 15	1205	5	X		01
745 MD ROUTE 3 N	|	|	|	|	1235	|	X		02
AA-94-7975	|	|	|	|	1305	|	X		03
TRIP BLANK-COOLER 0001		OT	—	—	—	1		HOLD	

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other LAB-SUPPLIED LIQUID

Remarks:
COOLER ID # 0001

pH _____ Temp _____
Flow _____ Other _____

5651 4721 2172

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
[signature]	18 SEPT 2015	1245	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			[signature]

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____

Temp: 3.1 °C Bottles Received: 10

Date: 9-19-15 Time: 0910

Hold #

Condition: (lab use only) OK JW7

COC Seal Intact: ✓ Y ___N ___NA

pH Checked: NCF:

Chain of Custody Page 1 of 1

ESC LAB SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 789658
K062

Acctnum: BPENV
Template:
Prelogin:
TSR: 034 - Craig Cothron
PB:
Shipped Via:

ESC LAB SCIENCES
YOUR LAB OF CHOICE

ANALYTICAL REPORT

October 28, 2015

myESC
REAL TIME DATA ACCESS

BP Environmental

Sample Delivery Group:	L795714
Samples Received:	10/21/2015
Project Number:	H&J-101-01
Description:	H&J-101-01
Site:	H&J-101-01
Report To:	Ms. Lou Ann Parson 8615 Commerce Drive, Unit One Easton, MD 21601

Entire Report Reviewed By:

Craig Cothron
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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743RTE3N L795714-01 GW

Collected by	Collected date/time	Received date/time
Jonathan Parson	10/19/15 15:42	10/21/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (GC/MS) by Method 524.2	WG824770	1	10/27/15 12:07	10/27/15 12:07	JAH

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Craig Cothron
Technical Service Representative

Volatile Organic Compounds (GC/MS) by Method 524.2

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.500	1	10/27/2015 12:07	WG824770
Carbon tetrachloride	ND		0.500	1	10/27/2015 12:07	WG824770
1,4-Dichlorobenzene	ND		0.500	1	10/27/2015 12:07	WG824770
1,2-Dichloroethane	ND		0.500	1	10/27/2015 12:07	WG824770
1,1-Dichloroethene	ND		0.500	1	10/27/2015 12:07	WG824770
1,1,1-Trichloroethane	ND		0.500	1	10/27/2015 12:07	WG824770
Trichloroethene	ND		0.500	1	10/27/2015 12:07	WG824770
Vinyl chloride	ND		0.500	1	10/27/2015 12:07	WG824770
1,2,4-Trichlorobenzene	ND		0.500	1	10/27/2015 12:07	WG824770
cis-1,2-Dichloroethene	ND		0.500	1	10/27/2015 12:07	WG824770
Xylenes, Total	ND		0.500	1	10/27/2015 12:07	WG824770
Methylene chloride	ND		0.500	1	10/27/2015 12:07	WG824770
1,2-Dichlorobenzene	ND		0.500	1	10/27/2015 12:07	WG824770
trans-1,2-Dichloroethene	ND		0.500	1	10/27/2015 12:07	WG824770
1,2-Dichloropropane	ND		0.500	1	10/27/2015 12:07	WG824770
1,1,2-Trichloroethane	ND		0.500	1	10/27/2015 12:07	WG824770
Tetrachloroethene	ND		0.500	1	10/27/2015 12:07	WG824770
Chlorobenzene	ND		0.500	1	10/27/2015 12:07	WG824770
Toluene	ND		0.500	1	10/27/2015 12:07	WG824770
Ethylbenzene	ND		0.500	1	10/27/2015 12:07	WG824770
Styrene	ND		0.500	1	10/27/2015 12:07	WG824770
Bromobenzene	ND		0.500	1	10/27/2015 12:07	WG824770
Bromodichloromethane	ND		0.500	1	10/27/2015 12:07	WG824770
Bromoform	ND		0.500	1	10/27/2015 12:07	WG824770
Bromomethane	ND		0.500	1	10/27/2015 12:07	WG824770
Chlorodibromomethane	ND		0.500	1	10/27/2015 12:07	WG824770
Chloroethane	ND		0.500	1	10/27/2015 12:07	WG824770
Chloroform	ND		0.500	1	10/27/2015 12:07	WG824770
Chloromethane	ND		0.500	1	10/27/2015 12:07	WG824770
2-Chlorotoluene	ND		0.500	1	10/27/2015 12:07	WG824770
4-Chlorotoluene	ND		0.500	1	10/27/2015 12:07	WG824770
Dibromomethane	ND		0.500	1	10/27/2015 12:07	WG824770
Methyl tert-butyl ether	ND		0.500	1	10/27/2015 12:07	WG824770
1,3-Dichlorobenzene	ND		0.500	1	10/27/2015 12:07	WG824770
1,1-Dichloroethane	ND		0.500	1	10/27/2015 12:07	WG824770
1,3-Dichloropropane	ND		0.500	1	10/27/2015 12:07	WG824770
2,2-Dichloropropane	ND		0.500	1	10/27/2015 12:07	WG824770
1,1-Dichloropropene	ND		0.500	1	10/27/2015 12:07	WG824770
1,3-Dichloropropene	ND		0.500	1	10/27/2015 12:07	WG824770
1,1,1,2-Tetrachloroethane	ND		0.500	1	10/27/2015 12:07	WG824770
1,1,2,2-Tetrachloroethane	ND		0.500	1	10/27/2015 12:07	WG824770
1,2,3-Trichloropropane	ND		0.500	1	10/27/2015 12:07	WG824770
Naphthalene	ND		5.00	1	10/27/2015 12:07	WG824770
(S) 4-Bromofluorobenzene	*86.4*		*70.0-130*		*10/27/2015 12:07*	WG824770
(S) 1,2-Dichlorobenzene-d4	*81.5*		*70.0-130*		*10/27/2015 12:07*	WG824770

Method Blank (MB)

(MB) 10/27/15 10:49

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Benzene	ND		0.000500
Carbon tetrachloride	ND		0.000500
1,4-Dichlorobenzene	ND		0.000500
1,2-Dichloroethane	ND		0.000500
1,1-Dichloroethene	ND		0.000500
1,1,1-Trichloroethane	ND		0.000500
Trichloroethene	ND		0.000500
Vinyl chloride	ND		0.000500
1,2,4-Trichlorobenzene	ND		0.000500
cis-1,2-Dichloroethene	ND		0.000500
Xylenes, Total	ND		0.000500
Methylene chloride	ND		0.000500
1,2-Dichlorobenzene	ND		0.000500
trans-1,2-Dichloroethene	ND		0.000500
1,2-Dichloropropane	ND		0.000500
1,1,2-Trichloroethane	ND		0.000500
Tetrachloroethene	ND		0.000500
Chlorobenzene	ND		0.000500
Toluene	ND		0.000500
Ethylbenzene	ND		0.000500
Styrene	ND		0.000500
Bromobenzene	ND		0.000500
Bromodichloromethane	ND		0.000500
Bromoform	ND		0.000500
Bromomethane	ND		0.000500
Chlorodibromomethane	ND		0.000500
Chloroethane	ND		0.000500
Chloroform	ND		0.000500
Chloromethane	ND		0.000500
2-Chlorotoluene	ND		0.000500
4-Chlorotoluene	ND		0.000500
Dibromomethane	ND		0.000500
Methyl tert-butyl ether	ND		0.000500
1,3-Dichlorobenzene	ND		0.000500
1,1-Dichloroethane	ND		0.000500
1,3-Dichloropropane	ND		0.000500

Method Blank (MB)

(MB) 10/27/15 10:49

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
2,2-Dichloropropane	ND		0.000500
1,1-Dichloropropene	ND		0.000500
1,3-Dichloropropene	ND		0.000500
1,1,1,2-Tetrachloroethane	ND		0.000500
1,1,2,2-Tetrachloroethane	ND		0.000500
1,2,3-Trichloropropane	ND		0.000500
Naphthalene	ND		0.00500
(S) 4-Bromofluorobenzene	*92.8*		*70.0-130*
(S) 1,2-Dichlorobenzene-d4	*88.3*		*70.0-130*

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

State Accreditations

Alabama	40660
Alaska	UST-080
Arizona	AZ0612
Arkansas	88-0469
California	01157CA
Colorado	TN00003
Conneticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia [1]	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
Iowa	364
Kansas	E-10277
Kentucky [1]	90010
Kentucky [2]	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina [1]	DW21704
North Carolina [2]	41
North Dakota	R-140
Ohio–VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee [1 4]	2006
Texas	T 104704245-07-TX
Texas [5]	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

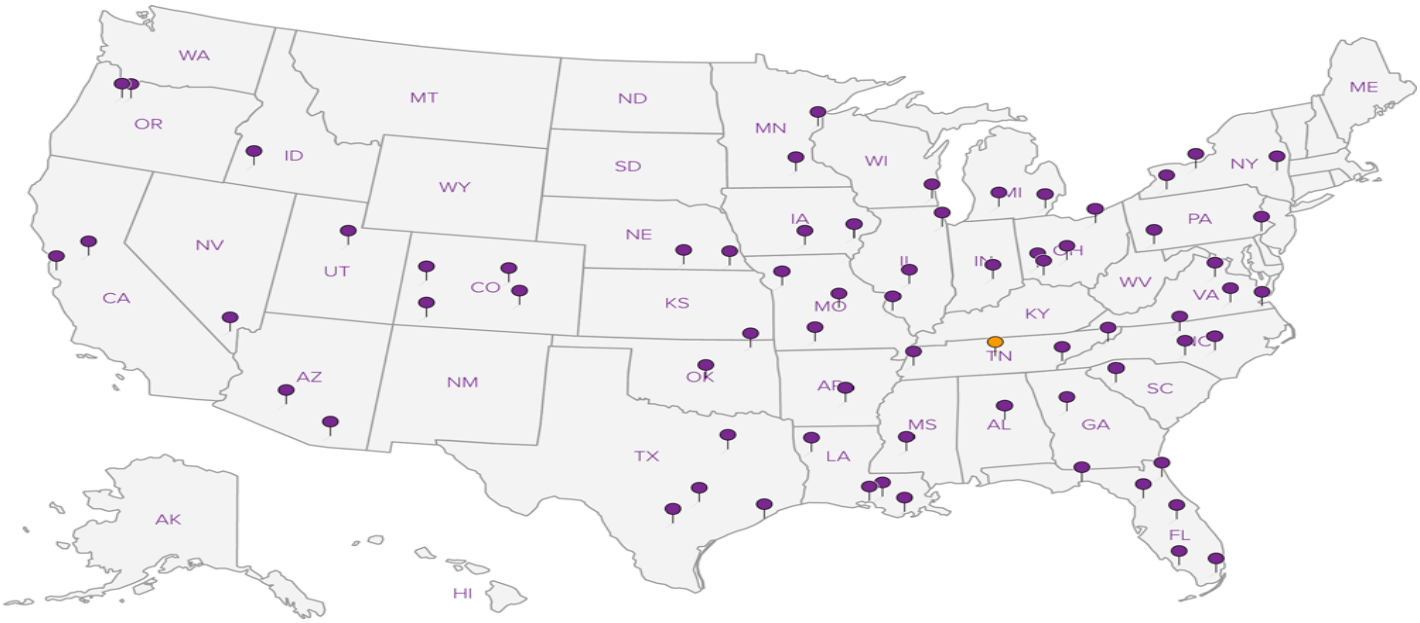
[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01
Canada	1461.01
EPA–Crypto	TN00003
AIHA	100789
DOD	1461.01
USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:
BP Environmental
8615 Commerce Drive, Unit One
Easton, MD 21601

Billing Information:
Accounts Payable
8615 Commerce Drive, Unit One
Easton, MD 21601

Report to: **Ms. Lou Ann Parson**

Email To: **admin@bpenvironmental.net**

Project Description: **H&J-101-01**

City/State Collected: **Gambrills MD**

Phone: **4108190919**
Fax:

Client Project # **H&J-101-01**

Lab Project # **BPENV-HJ-101-01**

Collected by (print): jonathan parson

Site/Facility ID # **H&J-101-01**

P.O. # **HJ-101-01**

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No X Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

ESC LAB SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # L795714

F013

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V524GW 40mlAmb-AscAcid+HCl	Rem./Contaminant	Sample # (lab only)
743 RHE 3N	Grab	GW		10/14/15	1542	3	X		
Trip Blank-GW	1	1		1	1	1	X	HOLD	-01

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	10/20/15	10 00	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature) 6194 4956 2226
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ _____

Temp: 3.2 °C Bottles Received: 4 = VP

Date: 10-21-15 Time: 900

Hold #

Condition: (lab use only) GOOD OK

COC Seal Intact: ___Y ___N ✓ NA

pH Checked: NCF:

APPENDIX E

BPEnvironmental, Inc.

8615 Commerce Drive, Unit One
Easton, MD 21601
Phone (410) 819-0919
Fax (410) 819-6555

300 High Street, Suite 3
Seaford, DE 19970
Phone (302) 629-6505
Fax (302) 629-6722

www.bpenvironmental.net

April 15, 2015

Brian O'Meara
Baldwin Investors
2410 Evergreen Road, Suite 104
Gambrills, MD 21054

VIA CERTIFIED MAIL
#7014 1820 0001 7237 2290

RE: Off-Site Access for Subsurface Investigation
743 MD Route 3 N
Gambrills, MD 21054
MDE-OCP Case No. 2012-0677-AA
BPE Project#: H&J-101-01

Dear Mr. O'Meara:

The Maryland Department of the Environment (MDE) – Oil Control Program (OCP) is overseeing the investigation of a release of petroleum at the property known as H&J BP Subway, located at 738 MD Route 3 N, Gambrills, MD 21054 (SITE). BP Environmental, Inc. (BPE) has performed subsurface investigation at the SITE since 2012. To date, the results of the subsurface investigation indicate that groundwater beneath the SITE is impacted by low levels of petroleum-related compounds. Groundwater in the uppermost water-bearing zone beneath the SITE appears to be generally flowing to the southeast. The Baldwin Investors-owned property located 743 MD Route 3 N, Gambrills, MD 21054 (Premises) lies southeast and adjacent to the SITE. Accordingly, BPE recommended to MDE-OCP that two (2) monitoring wells be installed, developed, and periodically sampled on the Premises to evaluate groundwater impact, if any, further downgradient of the release. MDE-OCP concurred with this recommendation and approved the proposed scope of work pertaining to the Premises in a letter dated December 29, 2014. A copy of the December 29, 2014 MDE-OCP letter is enclosed.

BPE, on behalf of the SITE Owner, respectfully requests access to the Premises to install two monitoring wells. Enclosed please find an Access Agreement for this task. In addition, BPE has enclosed a map depicting the proposed locations of the monitoring wells on the Premises. The monitoring wells will be completed with flush-mount manways set in a 2′ x 2′ concrete pad at the ground surface. Following installation and development, the wells will be gauged and sampled at periodic intervals, as required by MDE-OCP. Following completion of the required investigative activity, the monitoring well will be permanently abandoned in accordance with the applicable Maryland and Anne Arundel County regulations.

Feel free to contact us with any questions or concerns regarding the agreement and activities to be performed at the Premises. Once the access agreement has been reviewed, please sign and return.

Sincerely,
BP Environmental, Inc.

Gary K Lasako

Gary Lasako
Geologist

Enclosures: December 29, 2014 MDE Letter
Access Agreement
Proposed Monitoring Well Location Map

cc: H&J Amoco, Inc.
Mike Edillon, Maryland Department of the Environment (USPS Certified Mail # 7014 2120 0002 2813 3688)
BPE files

MDE

MARYLAND DEPARTMENT OF THE ENVIRONMENT

Oil Control Program, Suite 620, 1800 Washington Blvd., Baltimore MD 21230-1719
410-537-3442 410-537-3092 (fax) 1-800-633-6101, ext. 3442

Martin O'Malley
Governor

Anthony G. Brown
Lieutenant Governor

Robert M. Summers, Ph.D.
Secretary

RECEIVED
12/31/14

December 29, 2014

Ms. Pushpinder Sandhu
13007 Twelve Hills Road
Clarksville MD 21029

RE: WORK PLAN APPROVAL
Case No. 2012-0677-AA
H&J BP Subway
738 MD Route 3 North, Gambrills
Anne Arundel County, Maryland
Facility I.D. 11762

Dear Ms. Sandhu:

The Oil Control Program recently completed a review of the case file for the above-referenced property, including the *Step-Out Delineation Work Plan - November 17, 2014.* The *Work Plan* proposes to install two 2-inch diameter down-gradient monitoring wells in off-site locations at 743 Route 3 North. The monitoring wells will be installed using hollow stem auger technology to a depth of approximately 10 feet below the first groundwater encountered using 20 feet of well screen. The collection of split spoons was proposed between 55 feet below grade to the final depth of the borehole. The Department hereby approves the *Step-Out Delineation Work Plan - November 17, 2014* contingent upon the following modifications:

1) An off-site access agreement must be in place prior to conducting utility mark-out and drilling work. Contact the case manager to schedule a well mark-out meeting once the access agreement is in place, utilities have been marked out, and prior to conducting the work.

2) Due to the potential for unknown off-site petroleum sources, split spoon sampling must be performed at 5-foot intervals from the ground surface to 55 feet below ground surface (bgs) and then continuously below 55 feet bgs to the terminal depth of the borehole.

3) Soil samples must be collected from each boring and analyzed for full-suite volatile organic compounds (VOCs), including fuel oxygenates and naphthalene, using EPA Method 8260 and for total petroleum hydrocarbons – diesel and gasoline range organics (TPH-DRO and GRO) using EPA Method 8015. All soil samples collected for volatile analysis must be collected and field preserved in accordance with EPA Method 5035. At a minimum, one soil sample must be collected for laboratory analysis from each boring at the depth that corresponds to the highest photo-ionization detector (PID) readings. If all PID readings are zero, collect the soil sample from the interval groundwater is encountered.

4) Baseline groundwater samples must be collected from the new monitoring wells. The samples must be analyzed for full-suite VOCs, including fuel oxygenates and naphthalene, using EPA Method 8260 and for TPH-DRO and GRO using EPA Method 8015. After baseline sampling, the sampling of MW-09 and MW-10 may conform to the monitoring well sampling schedule approved in the Oil Control Program's *Request for Step-Out Delineation Work Plan - October 16, 2014* letter (copy enclosed).

5) All soil and groundwater waste generated for this site must be properly containerized for off-site disposal.

6) The well construction *Report of Results* must be submitted to the Oil Control Program **no later than April 15, 2015**. The report must include a detailed description of the work conducted, a site map, soil and groundwater sampling results, lab sheets, boring logs including PID readings, and disposal receipts.

7) Future reports must include site maps that show off-site monitoring wells and area drinking water supply well locations.

All documentation submitted to the Oil Control Program must include three hard copies and a digital copy on a labeled compact disc (CD). If you have any questions, please contact the case manager, Mr. Michael Edillon, at 410-537-4151 (email: michael.edillon@maryland.gov) or me at 410-537-3482 (email: ellen.jackson@maryland.gov).

Sincerely,

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

ME/nln

Enclosure: Request for Step-Out Delineation Work Plan – October 16, 2014

cc: Mr. Baldev Singh (Station Operator)
Mr. Gary Lasako (BP Environmental, Inc.)
Baldwin Investors (743 MD Route 3 North)
Mr. Brian Chew (Anne Arundel County Health Dept.)
Ms. Ginger D. Klingelhoefer-Ellis (Anne Arundel County DPW)
Mr. Andrew B. Miller
Mr. Christopher H. Ralston
Mr. Horacio Tablada

MARYLAND DEPARTMENT OF THE ENVIRONMENT

Oil Control Program, Suite 620, 1800 Washington Blvd., Baltimore MD 21230-1719
410-537-3442 410-537-3092 (fax) 1-800-633-6101, ext. 3442

Martin O'Malley
Governor

Anthony G. Brown
Lieutenant Governor

Robert M. Summers, Ph.D.
Secretary

October 16, 2014

Ms. Pushpinder Sandhu
13007 Twelve Hills Road
Clarksville MD 21029

RE: REQUEST FOR STEP-OUT DELINEATION WORK PLAN
Case No. 2012-0677-AA
H&J BP Subway
738 MD Route 3 North, Gambrills
Anne Arundel County, Maryland
Facility I.D. No. 11762

Dear Ms. Sandhu:

The Oil Control Program recently completed a review of the case file for the above-referenced property, including the *2nd Quarter 2014 Progress Report - July 31, 2014.* Liquid phase hydrocarbons (LPH) have not been detected at the site since enhanced fluid recovery was conducted from the tank field monitoring pipes in October 2012. Dissolved phase petroleum hydrocarbons have been detected in on-site monitoring wells and tank field monitoring pipes at elevated levels; however, on-site and off-site drinking water supply well sampling has been non-detect for petroleum constituents. The report included recommendations for reduction in the frequency of gauging, the frequency of site potable well sampling, groundwater sampling parameters, and the installation of two additional monitoring wells. The Department hereby provides the following comments and requirements:

1) The Oil Control Program approves the recommendation to reduce the frequency of monitoring well and tank field monitoring pipe gauging from monthly to quarterly (every three months). If LPH are detected, the Oil Control Program must be notified within 24 hours and monthly gauging must continue.

2) The Oil Control Program approves the recommendation to reduce the sampling frequency for the on-site drinking water supply well from quarterly to semi-annually (twice a year). The supply well must be sampled in the 2nd and 4th quarters. Sample collected must be analyzed for full- suite volatile organic compounds (VOCs), including fuel oxygenates and naphthalene, using EPA Method 524.2.

3) The Oil Control Program approves the recommendation to decrease sample analytical parameters as proposed, however, during every 4th quarter all monitoring wells must be sampled and analyzed for full- suite VOCs, including fuel oxygenates and naphthalene, using EPA Method 8260.

4) Any new monitoring wells installed must be initially sampled for full-suite VOCs, including fuel oxygenates and naphthalene, using EPA Method 8260 to establish a baseline. After baseline sampling, sample analysis may switch to the decreased analytical sampling schedule.

5) The Oil Control Program approves the recommendation for installation of two additional monitoring wells. A *Work Plan* must be submitted for review and approval **no later than November 18, 2014**. The *Work Plan* must detail the locations of the wells (on a site map), well construction plans, and methods. Please note all future recommendations (i.e., proposals for delineation, remediation) must be submitted separately as stand-alone documents and not in quarterly reports.

6) The gauging and sampling results data tables are difficult to read in the current quarterly report layout. Adjust the tables so they conform to the example tables displayed in the Department's *Maryland Environmental Assessment Technology* (MEAT) *for Leaking Underground Storage Tanks* guidance document, Appendices H and I. At a minimum the "parameter" column headings should display benzene, toluene, ethylbenzene, xylene, naphthalene, methyl tertiary-butyl ether (MTBE), and other analyte detections. A copy of the MEAT document can be obtained here: http://www.mde.state.md.us/assets/document/MEAT_Guidance.pdf

7) When the new sample results table is constructed, include well construction information (total depth, well diameter, screen interval) beneath the well ID in the "Well No." column.

All documentation submitted to the Oil Control Program must include three hard copies and one digital copy on a labeled compact disc (CD). If you have any questions, please contact the case manager, Mr. Michael Edillon, at 410-537-4151 (email: michael.edillon@maryland.gov) or me at 410-537-3482 (email: ellen.jackson@maryland.gov).

Sincerely,

Andrew B. Miller for

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

ME/nln

cc: Mr. Baldev Singh (Station Operator)
Mr. Gary Lasako (BP Environmental, Inc.)
Mr. Brian Chew (Anne Arundel County Health Dept.)
Ms. Ginger D. Klingelhoefer-Ellis (Anne Arundel County DPW)
Mr. Andrew B. Miller
Mr. Christopher H. Ralston
Mr. Horacio Tablada

ACCESS AGREEMENT

This access agreement is entered into between H&J Amoco, Inc. (H&J Amoco) and the undersigned Owner. Owner is the current owner of the referenced property (Property) located at 743 MD Route 3 N, Gambrills, Anne Arundel County, MD 21054 (Anne Arundel Co. Tax Map 0037, Grid 0003, Parcel 0045).

For good and valuable consideration which the parties hereby acknowledge the receipt and sufficiency thereof, the undersigned (Owner) hereby agrees to grant H&J Amoco, and/or its environmental consultants or subcontractors, access to the Property, in order to perform certain environmental activities which H&J Amoco at its sole discretion chooses to perform. Such activities may include sampling, assessment, inspection, monitoring, installation of equipment, operation and maintenance of equipment, and remediation activities (Activities). Owner will provide H&J Amoco information regarding the location of subsurface utilities in the area of the proposed Activities to the extent Owner is aware of such information.

H&J Amoco will perform this work at no cost to Owner.

H&J Amoco shall use reasonable efforts during its Activities to minimize interruption to the business or use of the Property. H&J Amoco will repair any damage to the Property that may occur as a result of its Activities at the Property, including but not limited to restoration of the surface areas of the Property to their pre-drilling conditions, removal of equipment, and proper well closure.

Upon written request by Owner, H&J Amoco agrees to provide the results of analytical testing performed by H&J Amoco regarding its Activities at the Property and copies of all reports submitted to the appropriate State Agency. H&J Amoco shall provide this information as a courtesy only. Use of any of the information contained in these documents is at Owner's sole risk. H&J Amoco shall not be deemed to have made any representation or warranty, expressed or implied, as to the condition of the Property or the accuracy of the documents.

H&J Amoco will indemnify Owner from third party claims that arise out of H&J Amoco's negligence associated with the Activities performed by H&J Amoco on the Property.

It is hereby agreed that the neither this Access Agreement nor the Activities on the Property are an admission against H&J Amoco's interests or an assumption of liability or waiver of any rights by H&J Amoco.

This Access Agreement will terminate once H&J Amoco removes all of its soil borings and monitoring wells located on the Property and receives a No Further Action letter or similar Closure Letter from the appropriate State Agency.

Baldev Singh
H&J Amoco, Inc.

Baldev Singh
Signature

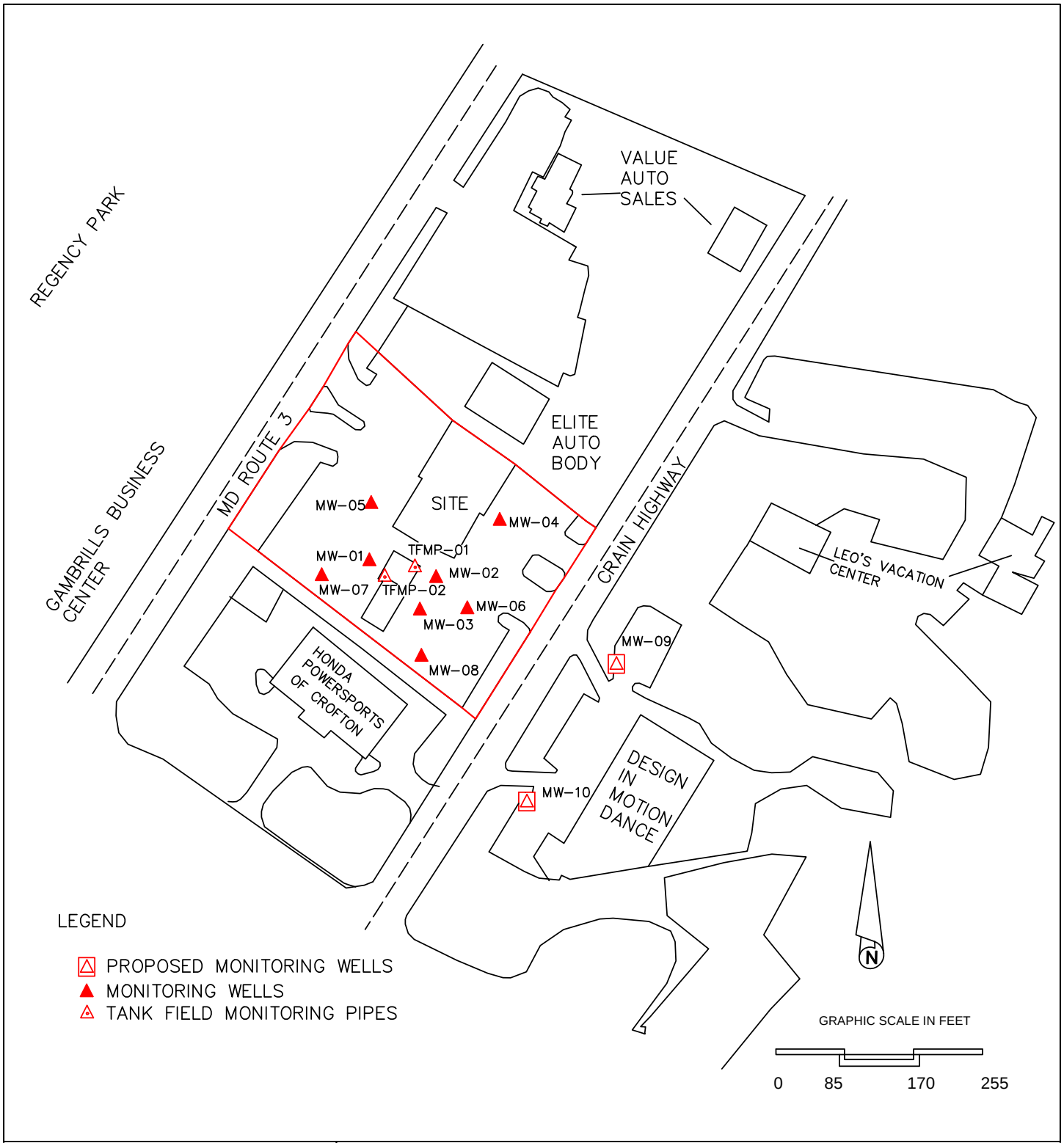
Gary Lasako (410) 819-0919
Consultant Contact Person / Telephone Number

Property Owner Signature / Title

Printed Name of Owner

Date of Authorization

J:\Archive\H&J-101 - Gambrills, MD\01-LSI\FR\4.2015_Off-Site_Access_Agreement\Report\4.15.15_Access_Agreement_743_MD_Rte_3_N.doc



Prepared For:
H&J AMOCO, INC.
738 CRAIN HIGHWAY
GAMBRILLS, MD

BP Environmental, Inc.
8615 Commerce Drive, Unit One
Easton, Maryland 21601

Site:
H&J BP SUBWAY
738 CRAIN HIGHWAY
GAMBRILLS, MD

Date:07/17/12
Revision Date:10/17/14
Project:H&J-101-01
Drafted by:JP

FIGURE 1 - SITE MAP WITH PROPOSED OFFSITE MONITORING WELL LOCATIONS
SCALE 1" = 170 FT