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June 26, 2020

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Mr. Jeffrey E. Mendenhall
South Carolina Department of Health and Environmental Control
Assessment Section, UST Management Division
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Subject: **2020 Annual Monitoring Report (April 2019 through March 2020)**
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693, "Kinder Morgan Belton Pipeline Release"

Dear Mr. Mendenhall,

On behalf of Plantation Pipe Line Company (Plantation), enclosed is the 2020 Annual Monitoring Report for the Lewis Drive Remediation Site in Belton, South Carolina. This report summarizes the work performed at the site between April 1, 2019, and March 31, 2020. If you have any questions or concerns, please call me at 919.859.5789 or Mr. Jerry Aycock/Plantation at 770.751.4165.

Regards,

William M. Waldron, P.E.
Program Manager

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File

Enclosure: 2020 Annual Monitoring Report (April 2019 through March 2020)

Lewis Drive Remediation Site
Belton, South Carolina
Site ID Number 18693
"Kinder Morgan Belton Pipeline Release"

2020 Annual Monitoring Report (April 2019 through March 2020)

Final

June 26, 2020

Plantation Pipe Line Company

Lewis Drive Remediation Site

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Certification

The material and data presented in this report were prepared consistent with current and generally accepted consulting principles and practices. This work was supervised by the following Jacobs licensed professional.

Jonathan Grimes, P.G.
South Carolina Registered Professional Geologist No. 2235

June 26, 2020
Date

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Acronyms and Abbreviations

µg/L	microgram(s) per liter
amp	ampere(s)
AS	air sparging
BCPZ	Browns Creek Protection Zone
BTEX	benzene, toluene, ethylbenzene, and xylenes
CAP	Corrective Action Plan
CCPZ	Cupboard Creek Protection Zone
CH2M	CH2M HILL Engineers, Inc. (now Jacobs)
COC	chain-of-custody
DHEC	South Carolina Department of Health and Environmental Control
DO	dissolved oxygen
DOT	Department of Transportation
EPA	U.S. Environmental Protection Agency
HAS	horizontal air sparging
ID	identification
Jacobs	Jacobs Engineering Group Inc.
MTBE	methyl tertiary butyl ether
O&M	operation and maintenance
PID	photoionization detector
Plantation	Plantation Pipe Line Company
QAPP	Quality Assurance Project Plan
RBSL	risk-based screening level
RDW	remediation-derived waste
SBZ	shallow bedrock zone
scfm	standard cubic feet per minute
scfm/ft	standard cubic feet per minute per foot
TSL	Target Screening Level
UIC	Underground Injection Control
UST	underground storage tank
VAS	vertical air sparging

1. Introduction

On behalf of Plantation Pipe Line Company (Plantation), Jacobs Engineering Group Inc. (Jacobs) is submitting this 2020 Annual Monitoring Report for the Lewis Drive Remediation Site in Belton, South Carolina. This report summarizes the work performed at the site between April 1, 2019, and March 31, 2020.

On December 8, 2014, a release of an estimated 8,800 barrels (369,600 gallons) of gasoline and a small amount of diesel fuel was discovered from a sleeve on Plantation's 26-inch product pipeline near Lewis Drive, Belton, South Carolina (Plantation, 2015). The release point is located on the pipeline right-of-way between Lewis Drive, a rural two-lane undivided asphalt road to the south, and a hayfield to the north. The release location and site features (including the location of monitoring wells, recovery sumps, temporary wells [piezometers], recovery trenches, recovery wells, vertical air sparging [VAS] wells, and horizontal air sparging [HAS] wells) are shown on Figure 1.

This site has been designated by the South Carolina Department of Health and Environmental Control (DHEC) as Site Number 18693 "Kinder Morgan Belton Pipeline Release." This Annual Monitoring Report was prepared in accordance with the Corrective Action Plan (CAP) Addendum, Revision 2 (CH2M[1], 2017), Free-Product Recovery Plan – Revision 4 (CH2M-Jacobs, 2018a), Quality Assurance Project Plan (QAPP), Revision 4 (CH2M-Jacobs, 2018b), and Table 1 of the Monitoring, Reporting, and Product Recovery Plan submitted on May 30, 2019 (Jacobs, 2019a) that was approved by DHEC on August 20, 2019 (DHEC, 2019).

Key correspondence from Plantation during this reporting period is summarized below.

- April 26, 2019 – Plantation submitted the First Quarter 2019 Supplemental Data Transmittal (Jacobs, 2019b).
- May 30, 2019 – Plantation submitted the Monitoring, Reporting, and Product Recovery Plan (April 1, 2019 through March 31, 2020) (Jacobs, 2019a).
- June 3, 2019 – Plantation submitted the UIC Permit Application for Direct-Push Injections (Jacobs, 2019c).
- June 27, 2019 – Plantation submitted the 2019 Annual Monitoring Report (Jacobs, 2019d).
- July 2, 2019 – Plantation submitted the Response to Comments in DHEC's Letter titled "Review of Monitoring Data and Response to Comments" dated May 3, 2019 (Jacobs, 2019e).
- July 26, 2019 – Plantation submitted the Request for Updated Monitoring Well Survey Map (Jacobs, 2019f).
- August 20, 2019 – Plantation submitted the June 2019 Well Water Analytical Results (Jacobs, 2019g).
- September 30, 2019 – Plantation submitted the Second Quarter 2019 Monitoring Report (Jacobs, 2019h).
- October 28, 2019 – Plantation submitted the Third Quarter 2019 Draft Data Transmittal (Jacobs, 2019i).
- November 25, 2019 – Plantation submitted the Application to convert vertical sparge wells (VSB-01 through VSB-03) to monitoring wells (Jacobs, 2019j).
- January 10, 2020 – Plantation submitted the Request for Well Permit to Install Additional Monitoring Wells (Jacobs, 2020a).
- January 10, 2020 – Plantation submitted the Request for Modification of Product Recovery Activities (Jacobs, 2020b).

[1] CH2M is now Jacobs. On December 15, 2017, CH2M HILL Companies Ltd., including CH2M HILL Engineers, Inc., became part of Jacobs. CH2M is now a wholly owned direct subsidiary of Jacobs.

- January 13, 2020 – Plantation submitted the Fourth Quarter 2019 Draft Data Transmittal (Jacobs, 2020c).
- January 20, 2020 – Plantation submitted the Third Quarter 2019 Monitoring Report (Jacobs, 2020d).
- January 28, 2020 – Plantation submitted the Lewis Drive Revised Pumping Plan (Jacobs, 2020e).
- February 4, 2020 – Plantation submitted the Potential Air Sparge System Expansion Concepts Letter (Jacobs, 2020f).
- February 7, 2020 – Plantation submitted the December 2019 Well Water Analytical Results (Jacobs, 2020g).
- March 26, 2020 – Plantation submitted the Fourth Quarter 2019 Monitoring Report (Jacobs, 2020h).

2. Work Activities

The following remediation-related activities were performed during this annual reporting period (April 2019 through March 2020) in accordance with the CAP Addendum, Revision 2 (CH2M, 2017), Free-Product Recovery Plan – Revision 4 (CH2M-Jacobs, 2018a), QAPP, Revision 4 (CH2M-Jacobs, 2018b), and Table 1 of the Monitoring, Reporting, and Product Recovery Plan as agreed upon by DHEC on August 20, 2019 (DHEC, 2019):

- Performed continuous free product recovery from canisters and petroleum-absorbent socks in 18 wells at the site. Canisters were emptied monthly from April to June 2019 and then quarterly for the remainder of this reporting period. During each recovery event, the volume of product collected from each well was recorded and the absorbent socks were replaced as needed depending on visual inspection by the field team. Product recovered from the absorbent socks was determined by weighing the absorbent socks before and after placement in each well.
- Conducted 10 groundwater sampling events and 12 surface water sampling events.
- Conducted two sampling events of the two agricultural wells on the property owned by Mr. Patrick O'Dell.
- Conducted soil sampling in the vicinity of MW-34 and SW-12 to assess the potential presence of free-phase petroleum.
- Conducted oxidant injections in the area of MW-46, MW-56, and MW-57 in the Cupboard Creek Protection Zone (CCPZ) and MW-38 in the Browns Creek Protection Zone (BCPZ). This interim action was performed to address the increased dissolved hydrocarbon concentrations located outside the direct influence of the air sparging (AS) system in the areas upgradient from Cupboard Creek and Browns Creek. Injection field summary report detailing this work was submitted in the 2019 fourth quarter monitoring report (Jacobs, 2019h)
- Operated expanded VAS wells in the areas of Browns Creek and Cupboard Creek Protection Zones (Figure 1).
- Operated stream aerators in Browns Creek, except during collection of surface water samples.
- Operated three HAS wells in the Hayfield Zone (Figure 1).
- Performed routine operation and maintenance (O&M) on the AS system.
- Activated the 13 additional VAS wells in the CCPZ and BCPZ on April 9, 2019, after receiving the modified underground injection control permit.
- Removed absorbent socks from recovery features RS-08, RT-2K, RT-1A, RT-1B, and RT-1C during the November 2019 event due to lack of product remaining at these locations.
- Transported and disposed of petroleum-contaminated water from onsite storage tanks and soil cuttings generated during the AS system expansion activities to permitted facilities.
- Performed routine inspections of surface water features at Browns Creek and Cupboard Creek.
- Met with DHEC on April 5, 2019; May 17, 2019; August 12, 2019; and November 8, 2019 to discuss remediation progress and the focus of remediation activities.
- Notified DHEC prior to conducting environmental work.

3. Work Procedures

3.1 Gauging Events

Select monitoring wells, surface water locations, and recovery features (recovery sumps, trenches, and wells) were gauged every mid-quarter, and sitewide gauging was conducted quarterly based on correspondence with DHEC (Jacobs, 2019a). Two additional events of focused gauging and sampling were also conducted in April and July 2019. Gauging sheets for this reporting period are provided in Appendix A. Observations made during this reporting period are summarized in Table 1 and discussed in Section 3.3. Field notes for this reporting period are also provided in Appendix A.

3.2 Product Recovery

Product recovery was performed continuously in the BCPZ, CCPZ, Hayfield Zone, and Shallow Bedrock Zone (SBZ) in recovery wells, sumps, and trenches in accordance with the Free-Product Recovery Plan – Revision 4 (CH2M-Jacobs, 2018a). Product recovery canisters or absorbent socks have been installed in the respective features that contain product to optimize product recovery and quantification. Canisters were emptied monthly from April to June 2019 and then quarterly for the remainder of this reporting period according to Table 1 of the Monitoring, Reporting, and Product Recovery Plan (Jacobs, 2019a). During each product recovery event, the field team recorded the product collected from each canister or sock. The volume of product collected from the canisters was measured in a stainless-steel measuring cup, documented, and placed into onsite poly tanks for temporary storage, separation, and offsite disposal. The volume of product from the absorbent socks was measured by weighing the absorbent socks before and after deployment into the recovery feature. Used absorbent socks were placed in a Department of Transportation (DOT)-approved, 55-gallon steel drum for offsite disposal. Table 3 shows the dates and quantities of product that was recovered from each canister and sock.

3.3 Surface Water Sampling Events

Inspections of surface water features were performed monthly at the site during this reporting period. The inspection route of surface water features is presented in Figures 1, 2A, and 2B.

Surface water samples were scheduled to be collected from 14 locations. During this reporting period, several locations had insufficient water and were unable to be sampled. At Browns Creek, these locations included SW-03 in June 2019; SW-03 and SW-13 in September 2019; SW-01 and SW-09 in February 2020; and SW-07 in July, August, September, and November 2019. At Cupboard Creek, SW-05 was not sampled during 7 of 11 events.

Surface water samples were collected in accordance with the project QAPP, Revision 4 (CH2M-Jacobs, 2018b) and Table 1 of the Monitoring, Reporting, and Product Recovery Plan that was approved by DHEC on August 20, 2019 (DHEC, 2019). Surface water samples were collected monthly during this reporting period after stream aerators at Browns Creek were off for a 24-hour period. Samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), naphthalene, and methyl tertiary butyl ether (MTBE) using U.S. Environmental Protection Agency (EPA) Method 8260B and 8260D (see Tables 4A and 4B). The samples were packed in wet ice and transported by trackable, overnight delivery under standard chain-of-custody (COC) procedures to Pace Analytical Services in Mount Juliet, Tennessee. Field notes for this reporting period are provided in Appendix A. Laboratory reports for surface water samples and COC records for January through March 2020 are included in Appendix B. Previous laboratory reports and COC records were submitted in the quarterly reports (Jacobs, 2019h, 2020d, 2020h). Laboratory results are summarized in Tables 4A and 4B.

3.4 Groundwater Sampling Events

Ten groundwater sampling events were performed during this annual reporting period. The AS system, including the stream aerators, was operating during these monitoring events. A comprehensive round of groundwater gauging was conducted prior to the quarterly sampling events, and select wells were gauged during all other events using an oil-water interface probe to measure the depth to water and test for the presence and thickness (if present) of product. The oil-water interface probe was decontaminated before each use and after the final measurement. Decontamination was performed in accordance with the DHEC Programmatic QAPP, Revision 3.1 (DHEC UST Management Division, 2016) or project QAPP, Revision 4 (CH2M-Jacobs, 2018b) as applicable. Groundwater elevation and product thickness data are summarized in Table 2. Gauging sheets and field notes for this reporting period are provided in Appendix A. Figures 2A and 2B show groundwater elevations in the residuum and bedrock aquifers, respectively, while Figure 3 presents measurable product data for the site.

Monitoring wells without free product were sampled using either a HydraSleeve, a low-flow peristaltic pump, or a submersible pump. Sample logs are provided in Appendix A. The height of the water column in the well dictated whether a HydraSleeve or peristaltic pump was used according to the following:

- Water column greater than 3 feet: A HydraSleeve was used to collect an undisturbed groundwater sample from the well, in accordance with the project QAPP, Revision 4 (CH2M-Jacobs, 2018b). A HydraSleeve was installed to the midpoint of the screened interval and immediately recovered. The water in the HydraSleeve was then used to fill the sample containers.
- Water column less than 3 feet but greater than 0.5 foot: A peristaltic pump was used to purge the well, while field parameters (including dissolved oxygen [DO] concentrations) were measured using a YSI Pro DSS Multi-Parameter Water Quality Sonde meter to confirm stabilization of the groundwater, in accordance with the Programmatic QAPP (DHEC UST Management Division, 2016). After the water quality parameters stabilized, a sample was collected from the well using the straw method in accordance with the Programmatic QAPP. Upon stabilization, the field parameters were recorded on a separate purge log.
- Water column less than 0.5 foot: The well was reported and documented in the field logbook as insufficient water, was not sampled, and field parameters were not collected.

Samples were labeled, packed on wet ice, and transported by overnight delivery under standard COC procedures to Pace Analytical Services in Mount Juliet, Tennessee. Samples were analyzed for BTEX, 1,2-dichloroethane, MTBE, and naphthalene using EPA Method 8260B and 8260D. Field notes and purge logs for this reporting period are provided in Appendix A. Laboratory reports for groundwater samples and COC records for January through March 2020 are included in Appendix B. Previous laboratory reports and COC records were submitted in quarterly reports (Jacobs, 2019h, 2020d, 2020h). Laboratory results are summarized in Tables 5A and 5B.

3.5 Sparging System Operation and Maintenance

Routine O&M activities and inspections were performed during this reporting period. O&M logs for April 2019 through March 2020 are provided in Appendix C.

AS activities are summarized by remediation area below. When AS rates were increased in zones of the site, air monitoring was performed with a photoionization detector (PID) and visual observations were made in the areas where flow rates were adjusted.

- BCPZ: AS in the BCPZ was performed using 35 VAS wells screened from 13.0 to 71.5 feet below ground surface (bgs) The flow rates in these wells averaged 8.52 standard cubic feet per minute (scfm) per sparging well during the reporting period. Additionally, air was injected into two submersible diffusion aerators installed in Browns Creek at an average flow rate of 14.13 scfm each during this reporting period.

- CCPZ: AS in the CCPZ was performed using a curtain of 24 VAS wells screened from 9.5 to 31.2 feet bgs at an average flow rate of 8.46 scfm per sparging well during this reporting period.
- Hayfield Zone: AS in the Hayfield Zone was performed using three horizontal wells (HAS-01, HAS-02, and HAS-03), with screen lengths of approximately 752, 715, and 377 feet, respectively. The flow rates in each of the three horizontal wells were maintained at approximately 0.66 scfm per foot of screen (scfm/ft) during this reporting period, resulting in the following approximate flows: 498, 461, and 250 scfm per well, respectively.

3.6 Additional Activities

Additional activities for April 2019 through December 2019 were discussed in the quarterly reports (Jacobs, 2019h, 2020d, 2020h). Below is a summary of the additional activities performed during January 2020 through March 2020:

- Soil cuttings generated during installation of oxidant injection points IP05, IP04, IP47, IP51, and IP60 in August 2019 were placed in a DOT-approved, 55-gallon steel drum and temporarily stored onsite until transported for disposal by A&D Environmental on October 25, 2019, along with a separate DOT-approved, 55-gallon steel drum containing used booms and absorbent socks, to Giant Resource Recovery-Attalla in Attalla, Alabama. See Appendix D for the manifest and waste profile from Giant Resource Recovery-Attalla.
- Remediation-derived waste (RDW) liquid, consisting of purge water, petroleum-contaminated water recovered from canisters, and well-development water generated at the site, was temporarily stored in the two 1,500-gallon onsite poly tanks. The RDW liquids were pumped from these two poly tanks into a vac truck, and 19 DOT-approved steel drums of RDW water were transported and disposed on October 25, 2019, by A&D Environmental to Giant Resource Recovery-Attalla in Attalla, Alabama. On March 4, 2020, the two onsite poly tanks were emptied again by A&D Environmental, and these liquids were transported and disposed at the A&D Environmental Services, Inc. facility in Archdale, North Carolina. See Appendix D for the manifest and waste profile.

4. Discussion of Results

This period of record includes the first year that the AS system expansion was fully operated with activation of VAS-47 through VAS-59 initiated on April 9, 2019. The system continues to reduce dissolved hydrocarbon concentrations and free product in each of the treatment zones, while dissolved concentrations outside the treatment zones remain mostly stable. Of the 75 samples collected from residuum and bedrock wells during this most recent quarterly event (March 2020), 72 percent were nondetect or below Target Screening Levels (TSLs) for constituents analyzed. The number of gallons of product recovered from the site decreased by 83.4 percent since the last annual report. Continual adjustments will be made to the AS system to focus on those areas requiring higher flows for broader reduction of dissolved concerns. Oxidant injections were conducted in August 2019 in two areas of concern near monitoring wells MW-46 and MW-38. Since then, there have been decreasing hydrocarbon concentrations in MW-46 and a concentration rebound in MW-38. Additional monitoring well installations are planned for both of these areas during the next reporting period to further delineate petroleum concentrations in these areas. The Request for Well Permit to Install Additional Monitoring Wells was submitted on January 10, 2020 (Jacobs, 2020a) and was approved by DHEC on January 23, 2020 (DHEC, 2020).

4.1 Product Recovery

During this reporting period, approximately 1.52 gallons of product were recovered at the site compared to approximately 9.12 gallons during the previous reporting period. During this most recent quarterly event (January through March 2020), the amount of product recovered from the site was 0.002 gallon from RS-14. Product thicknesses continue to be minimal. In March 2020, measurable product thicknesses were observed at only 6 of 111 features monitored, ranging from 0.01 foot in RW-03 and RW-07 to 0.04 foot in RW-04. Most notably, no monitoring well locations within the BCPZ or the CCPZ contained measurable product; and only one recovery feature, RW-07, in the CCPZ contained product. Product thickness and well gauging data are presented in Table 2, while Table 3 presents the dates and quantities of recovered product. Figure 3 presents measurable product data at the site. Field notes for this reporting period are included in Appendix A. Hydrographs for select monitoring wells and recovery features representative of approximate product thickness trends are provided in Appendix E.

4.2 Surface Water

During this reporting period, BTEX and MTBE concentrations were detected at 8 of 14 surface water sampling locations: SW-01, SW-02, SW-04, SW-08, SW-09, SW-12, SW-13, and SW-14 (Table 4B). Benzene was the only constituent that exceeded the surface water standard for protection of human health for consumption of water and organisms of 2.2 micrograms per liter (µg/L) (DHEC, 2014). Isolated benzene exceedances were detected once during this reporting period from locations SW-04, SW-08, and SW-13, and twice from locations SW-01 and SW-12. These exceedances correlate with periods of unusually heavy rainfall. Approximately 16 inches of precipitation were recorded from January (6 inches) to February (10 inches) 2020 at the nearest weather station (NOAA, 2020). The only surface water location with consistent exceedances of benzene was at SW-02 in April and May 2019, and December 2019 through March 2020.

No signs of distressed vegetation or hydrocarbon sheens were observed during the surface water inspections for this reporting period. Surface water sample results are summarized in Table 4A; historical data for surface water samples are summarized in Table 4B. Trends for surface water sampling locations SW-01, SW-02, SW-04, SW-12, SW-13, and SW-14 are presented in Appendix F. Construction details for the stream gauges are presented in Table 7. Observations made during this reporting period are summarized in Table 1. Field notes for this reporting period are included in Appendix A. Analytical data sheets and COC records are included in Appendix B for the events in January through March 2020. Prior analytical data sheets and COC records were presented in quarterly reports (Jacobs, 2019h, 2020d, 2020h).

4.3 Groundwater Flow

Water levels from the March 2020 gauging event were used to create potentiometric surface maps for the site (Figures 2A and 2B). Groundwater flow in both the residuum (Figure 2A) and bedrock (Figure 2B) aquifers mimics the topography of the site and generally flows from topographic highs to topographic lows. Cupboard Creek flows intermittently, indicating the primary direction of groundwater flow is northeast toward Browns Creek. The March 2020 water table configurations and direction of groundwater flow are consistent with previous findings.

Stream elevations are tabulated in Table 2 and are presented with groundwater elevations on Figure 2A. Construction details for wells installed during this reporting period are presented in Table 6. Gauging sheets for this reporting period are included in Appendix A. Hydrographs for select monitoring wells and recovery features representative of general product thickness trends are presented in Appendix E.

4.4 Groundwater Monitoring Results

Groundwater monitoring results during this reporting period demonstrate continued decreases in dissolved concentrations with only a few localized areas showing increased concentrations during January 2020 through March 2020 in the areas of MW-13 (Hayfield Zone) and MW-38 and MW-40 (BCPZ). The Hayfield Zone and SBZ show stabilization of the extent of these dissolved concentrations, with the area of MW-46 (CCPZ) and the areas of MW-13 and MW-38 (BCPZ) requiring additional remediation to reduce concentrations. Most bedrock wells, which are outside the influence of VAS and HAS systems, and the SBZ have stable dissolved concentrations. An exception is MW-13B, which has shown an order of magnitude increase of dissolved concentrations since the previous quarter. MW-15B has also shown an increasing trend since the beginning of this reporting period through 2019 however has shown stable concentrations in 2020. Groundwater sample results are summarized in Table 5A; historical data for groundwater samples are summarized in Table 5B. Laboratory analytical reports for the sampling events in January through March 2020 are provided in Appendix B. Prior analytical data reports were presented in quarterly reports (Jacobs, 2019h, 2020d, 2020h).

Although site-specific groundwater cleanup targets have not been established, groundwater analytical results are screened against the risk-based screening levels (RBSLs) listed in the South Carolina Programmatic QAPP, Table D1 (DHEC UST Management Division, 2016), referred to as TSLs. RBSLs are listed at the top of Tables 5A and 5B. The March 2020 results are shown on Figures 4A and 4B and summarized in the following sections. Trend plots for select groundwater monitoring wells are included in Appendix G. Note that the gray shaded area on the trend charts indicates the operational period of the AS system for wells believed to be under the direct influence of the system, and monitoring wells that have been nondetect or below TSLs since March 2018 are not presented. Field notes and purge logs for this reporting period are included in Appendix A.

4.4.1 Browns Creek Protection Zone

Remediation in the BCPZ shows 13 of the 20 wells below TSLs or nondetect during this reporting period, and 4 of the 7 remaining wells show stable or decreasing trends; exceptions are MW-15B, MW-38, and MW-40.

- Dissolved concentrations in residuum and bedrock wells side-gradient of and within the AS system have decreased or remained stable with the exception of MW-15B. This location has had increasing results during this reporting period but has shown stable trends since the last quarterly event with exceedances of benzene, toluene, and MTBE. The upgradient expansion AS wells may now be influencing the presence of dissolved concentrations at MW-15B. The concentrations in MW-12B have fluctuated during this reporting period but show an overall decrease of 92.7 percent since March 2019. The remaining residuum monitoring wells have concentrations below TSLs or nondetect.

- BTEX concentrations showed a spike at monitoring well MW-28 in December 2019, with benzene exceeding its TSL; however, BTEX concentrations were nondetect as of March 2020.
- After oxidant injections were conducted in August 2019, downgradient monitoring well MW-38 showed decreasing trends, with benzene below its TSL in December 2019. Benzene has since rebounded at this location with increasing concentrations during 2020 sampling events; but still shows an overall decrease of 60 percent compared to pre-injection concentrations.
- At downgradient monitoring well MW-34, benzene concentrations have fluctuated during this reporting period but show an overall decrease of two orders of magnitude, with benzene below its TSL for the first time since December 2018. MTBE has shown stable concentrations and is the only constituent above its TSL. The residual levels in MW-34 may be due to its poor hydraulic connectivity as this well purges dry quickly and is slow to recharge. As a result, the residual levels in this well are not believed to be representative of the nearby groundwater.
- Downgradient monitoring well MW-39 has decreasing BTEX and stable MTBE concentrations since December 2019, with only MTBE currently above its TSL.
- Downgradient monitoring well MW-40 has shown an increase in BTEX concentrations since the last quarterly event, with benzene exceeding its TSL. This may be due to the heavy rainfall at the site but is being investigated further.

4.4.2 Cupboard Creek Protection Zone

Dissolved concentrations in the CCPZ have stabilized in four of eight residuum wells and have overall decreasing trends of BTEX in MW-46, MW-56, and MW-57. The only TSL exceedances in this zone are benzene and MTBE, with the exception of MW-20 and MW-19.

- MW-20 is within the influence of the AS system and has had product occurrence only twice during this reporting period as opposed to five times during the last annual reporting period. This well has shown stable BTEX concentrations during the first quarter of 2020, with benzene, ethylbenzene, and toluene exceeding their respective TSLs.
- MW-23 is downgradient of the AS system with increasing trends during the first half of this reporting period but decreasing concentrations since September 2019. There has been an 88.2 percent decrease in benzene concentrations and 59 percent decrease in MTBE concentrations since September 2019, with concentrations remaining stable during the first quarter of 2020. All other constituents are below their respective TSLs.
- Since the oxidant injections in August 2019, downgradient monitoring well MW-46 has continued to show decreasing trends for constituents analyzed, with benzene being nondetect for the first time since installation in December 2017. The only constituent currently above its respective TSL is MTBE.
- Prior to the oxidant injections, both MW-56 and MW-57 showed fluctuating concentrations of BTEX. Since oxidant injections, BTEX concentrations have continued to fluctuate but show an overall decrease, with stable concentrations for MTBE at both locations. Benzene concentrations have decreased by of 88.1 percent (MW-56) and 83.0 percent (MW-57) compared to concentrations before the injections in August 2019.
- Constituents in MW-19 (within the AS system influence) were below TSLs with the exception of a minor exceedance of naphthalene during the March 2020 event.
- Constituents were nondetect or below TSLs in downgradient monitoring wells MW-23B, MW-26, MW-26B, and MW-29.

4.4.3 Hayfield Zone

Measurable product was not detected within any of the Hayfield Zone monitoring wells during this reporting period, and 30 of the 37 Hayfield area monitoring wells were nondetect or below TSLs during the first quarter of 2020, demonstrating the effectiveness of the AS system. As of March 2020, only three residuum and four bedrock wells, all of which are outside the direct influence of the AS system, still show concentrations above TSLs.

- MW-07 (upgradient of the CCPZ AS system) showed stable benzene concentrations since March 2019 but has shown two orders of magnitude decrease since September 2019. Benzene concentrations have decreased 96.9 percent since the beginning of this reporting period, with only benzene and naphthalene exceeding their respective TSLs.
- MW-13 has not been sampled for the last two quarterly events (September and December 2019) due to insufficient water; however, it has had a dramatic increase in benzene since it was last sampled in June 2019. Benzene and MTBE are both above their respective TSLs.
- Downgradient monitoring well MW-36 showed a decrease in BTEX concentrations in 2019 with stable concentrations in 2020. Even though it is not within the direct influence of the AS, the benzene concentration has shown an order of magnitude decrease (79.3 percent) during this reporting period.
- Dissolved concentrations were above TSLs in 4 of the 10 bedrock wells that are outside the influence of the AS system, with benzene concentrations ranging from 12.8 µg/L in MW-14B to 6,600 µg/L in MW-17B during the March 2020 event. All other bedrock wells in the Hayfield Zone were nondetect or below TSLs during this reporting period.
    - MW-17B, which is upgradient of the Cupboard Creek AS curtain, has shown stable concentrations during this reporting period, with ethylbenzene, toluene, and MTBE exceeding the TSLs in addition to benzene.
    - BTEX concentrations fluctuated in MW-13B during 2019 but have shown an order of magnitude increase since the last quarterly event in December 2019, with benzene and toluene exceeding their respective TSLs.
    - Benzene has fluctuated at MW-14B during this reporting period, with a current concentration of 12.8 µg/L.
    - Only MTBE currently exceeded its TSL in MW-50B.

4.4.4 Shallow Bedrock Zone

Residuum and bedrock wells in the SBZ have been nondetect or below TSLs for constituents analyzed during this reporting period with the exception of MW-11 and MW-01B. MW-11 has a trend of increasing BTEX concentrations, though concentrations have been stable during the last quarter of this reporting period. MW-11 is in the area of the expanded AS system, which is expected to influence BTEX groundwater concentrations within the area of and downgradient to MW-11 (Figure 4A). Benzene concentrations showed a slight increase at location MW-01B and was detected above its TSL in March 2020.

4.5 Air Sparging System Operating Efficiency and Performance Data

Between April 2019 and March 2020, the AS system operated a total of approximately 15,925 hours, with an operating uptime of 85 percent. During this reporting period, the only downtime was due to routine maintenance visits and sampling, power outages, high-temperature shutdowns, and electrical breaker interruption causing compressor stoppages. During this reporting period, AS flow rates in the stream aerators, horizontal wells, and vertical wells were at 94 percent, 88 percent, and 57 percent of design flow capacity, respectively.

There were approximately 9 days of unscheduled system downtime associated with operation of the Browns Creek aerators due to damage of a beaver dam and associated lowering of the creek's surface water levels. Following the natural restoration of the beaver dam and associated increase of the creek's surface water elevation south of Lewis Drive, the creek aerators were reactivated.

There were approximately 25 days of scheduled downtime to accommodate surface water sampling at the site. Prior to conducting the sampling, the stream aerators at Browns Creek were off for a 24-hour period and then restarted once sampling was completed.

Approximately 64 days of unscheduled downtime occurred because one or both compressors failed due to a faulty electrical breaker. Troubleshooting of the system occurred to determine the cause of the faulty breaker. Initially, a fan was installed to reduce temperatures in the breaker panel; however, the breaker continued to trip, and it was determined that an upgrade from a 300-ampere (amp) breaker to a 350-amp breaker was required. This upgrade to the breaker was performed on October 8, 2019, and the AS system has not had any unscheduled interruptions associated with the breakers since this upgrade. During the restarts of the VAS wells and stream aerators, a ramp-up of the compressors was employed to carefully bring these systems up to their respective design capacities.

5. Conclusions

The following conclusions are based on the site work performed during this reporting period (April 1, 2019, through March 31, 2020):

- Product thickness values have declined to negligible levels in both recovery and nonrecovery features across the site, with only three occurrences of product detected in a nonrecovery feature during this past year. Additionally, there were no features with product thicknesses greater than 0.04 foot during the most recent quarterly event.
- The volume of product recovered continues to decrease across the site since the prior year. Approximately, 9.12 gallons were recovered from April 2018 to March 2019, compared to only 1.52 gallons of product collected between April 2019 and March 2020 (an 83.4 percent decrease) that is attributable to the AS system.
- Remedial efforts continue to be highly effective at reducing dissolved concentrations of hydrocarbons in groundwater as data continue to show decreased levels in the BCPZ, CCPZ, and Hayfield Zone, and stable trends in the SBZ and bedrock wells. Of the 75 residuum and bedrock well groundwater samples analyzed during this most recent quarterly event (March 2020), 72 percent of the wells were nondetect or below TSLs for constituents analyzed. Benzene concentrations in MW-34 (BCPZ), MW-07, and MW-36 (Hayfield) have decreased one to two orders of magnitude since the beginning of this reporting period, with MW-34 being below the TSL for the first time since December 2018.
- Although treatment zones have been established upgradient of both surface water bodies, surface water detections continue to be observed. Twelve surface water sampling events were performed during this reporting period with periodic exceedances of the benzene screening value recorded at sampling points SW-02 (6 of 12); SW-01 and SW-12 (2 of 11); and SW-04, SW-08, and SW-13 (1 of 11). Benzene exceedances were detected during the last quarterly event at SW-01, SW-02, and SW-04.
- During this reporting period, the AS system had an operating uptime of 85 percent. Operating flows in the stream aerators, HAS wells, and VAS wells were at 94 percent, 88 percent, and 57 percent of design flow capacity, respectively.
- Oxidant injections were conducted in August 2019 to address the increasing dissolved concentrations at monitoring wells MW-46, MW-56, and MW-57 in the CCPZ and MW-38 in the BCPZ. Since the injections were performed, MW-46 has shown decreasing benzene concentrations and has been nondetect since February 2020. In addition, benzene concentrations decreased at MW-56 by 88.1 percent and at MW-57 by 83.0 percent since August 2019. Benzene also decreased in MW-38 after oxidant injections to below its TSL in December 2019; it has since rebounded with increasing concentrations during the 2020 sampling events but still shows an overall decrease of 60 percent compared to pre-injection concentrations.
- There are two areas located outside the direct influence of the AS system and upgradient from Browns Creek with increasing dissolved hydrocarbon concentrations in monitoring wells. These areas include monitoring wells MW-13/13B and MW-38 northwest of Lewis Drive, and MW-40 southeast of Lewis Drive. A bedrock monitoring well is planned to be installed in the area of MW-38 in the BCPZ to further delineate dissolved concentrations downgradient of MW-13/13B and MW-14B (Jacobs, 2020a). The air sparge expansion in the BCPZ will continue to be monitored to evaluate its effectiveness with regard to side-gradient and downgradient wells including MW-40.

6. Future Activities

This section describes future activities planned for the Lewis Drive site.

6.1 Groundwater and Surface Water Monitoring

Groundwater and surface water monitoring will include the following activities:

- Ongoing monitoring and reporting will be conducted according to Table 1 of the Monitoring, Reporting, and Product Recovery Plan (Jacobs, 2019a). Groundwater concentration trends in the monitoring well network will continue to be assessed for optimization of the monitoring well network and the AS system, and to identify areas for potential supplemental remediation.
- Concentrations in the areas of MW-46, MW-56, and MW-57 (CCPZ), and monitoring well MW-38 (BCPZ) will be assessed to evaluate the effectiveness of the oxidant injections conducted in August 2019. Further delineation downgradient of the CCPZ is planned and a conceptual plan for expanding the AS system at Browns Creek is being developed.
- The bedrock air sparge wells that were installed when a bedrock air sparge pilot test was being considered will be converted to monitoring wells for assessing residual impacts in the bedrock in that area of the site.
- A plan to address dissolved hydrocarbon concentrations in select bedrock and residuum wells that are not under the direct influence of the AS system will be submitted for DHEC approval.
- An update to the Groundwater and Surface Water Monitoring and Reporting Plan will be submitted during the next reporting period.

6.2 Product Recovery

Product recovery efforts will be continued using canisters and absorbent socks in accordance with the Free-Product Recovery Plan – Revision 4 (CH2M-Jacobs, 2018a). However, because of the very limited volume of product that was recovered during this reporting period (only 1.52 gallons in a year), a letter will be submitted requesting the removal of the canisters from the recovery features. If the request is approved, any product detected during a gauging event will be recovered from the well using a bailer.

6.3 System Operation and Maintenance

System O&M will include the following activities:

- Continue routine O&M activities for the AS system to optimize performance.
- Continue AS in the BCPZ and CCPZ up to the maximum design flow rate of 15 scfm per well.
- Continue AS in the horizontal wells in the Hayfield Zone up to the maximum design flow rate of 0.75 scfm/ft.
- Continue operating the stream diffusion aerators at the design flow rate up to the maximum design flow rate of 15 scfm at each location if surface water elevations are sufficient.
- Submit a letter to DHEC summarizing planned reductions of air flows to the horizontal biosparging wells to optimize the system.

6.4 Interim Remedial Measures

To address increased contaminant concentrations in the vicinity of MW-38 and MW-46, Plantation is scheduled to install additional monitoring wells in the CCPZ, including shallow wells and a bedrock well downgradient of MW-56 and MW-57 and a well side-gradient from MW-46, as well as a bedrock well in the spring/summer of 2020 in the area of MW-38 (BCPZ) downgradient of MW-14B to further delineate petroleum contamination in these areas (Jacobs, 2020a).

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Tables

Table 1. Field Observation Log

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Date	Inspect Cupboard Creek Zone and Wetlands South of Calhoun Road (Any odor, sheen, or distressed vegetation? Describe.)	Inspect Browns Creek Upstream and Downstream of the Culvert Under Lewis Drive (Any odor, sheen, or distressed vegetation? Describe.)	Inspect Hayfield Area (Any odor, sheen, or distressed vegetation? Describe.)	Inspect Shallow Bedrock Zone Area (Any odor, sheen, or distressed vegetation? Describe.)	Inspect Hillside Adjacent to and South of SW-02 (Any odor, sheen, or distressed vegetation? Describe.)	Inspect Hillside Adjacent to and South of SW-04 (Any odor, sheen, or distressed vegetation? Describe.)
4/9/2019	No odors, sheens, or distressed vegetation observed in wetlands south of Calhoun Road.	No odors or distressed vegetation observed in wetlands either upstream or downstream of culvert under Lewis Drive. Water levels are very high. Beavers are active in the area.	The area is very saturated. Biological sheen seen around recovery sump wells.	No odors or distressed vegetation observed.		
5/16/2019	No odors, sheens, or distressed vegetation observed in wetlands south of Calhoun Road. Water is flowing freely. Grass is high in the area. Grounds management is currently not cutting in this area.	No odors or distressed vegetation observed in wetlands either upstream or downstream of culvert under Lewis Drive. Water levels are high from beaver dam activity. Some biological sheen is noted by MW-34. Bluegill fish were observed in the creek.	No odors or distressed vegetation observed. Grass is growing in area.	No odors or distressed vegetation observed.	Sediment tube still in place. Grass growing after recent drilling.	No odors or distressed vegetation observed.
6/5/2019	No sheens or distressed vegetation observed in wetlands south of Calhoun Road. Odor present along pathway from MW-29 to MW-20. Vegetation has started to grow around the newly installed air sparge lines. No changes to vegetation west of Calhoun Road. MW-46 is missing a well plate.	No odors or distressed vegetation observed in wetlands either upstream or downstream of culvert under Lewis Drive. Water levels are high from beaver dam activity. Turbidity high near culvert but clears downstream near the dam. Chub/Shiner nests were observed in the stream near SW-11.	No odors or distressed vegetation observed. Grass is growing in area. MW-03 and piezometer well pads are unstable from air sparge system.	No distressed vegetation observed. Vegetation is growing back along the newly installed air sparge lines near MW-11 toward Browns Creek. Odors were present around RW-03, RW-04, and RW-05.	Water is turbid near SW-02.	Approximately 5 feet southeast of SW-04 marker is a beaver path leading from Browns Creek northeast through the woods.
7/17/2019	Cupboard Creek was dry leading to SW-14. No noticeable changes in area. Odor present along pathway from MW-19 to MW-20.	Browns Creek had a slight odor around SW-12. The remaining locations had clear flow or biosheen. Areas around SW-08 and SW-09 were muddy.	No noticeable changes.	No noticeable changes.	Area near culvert was muddy. No noticeable odors or sheen other than biological. Vehicular trash such as beer bottles, fast food bags, and other debris was noticed.	Animal tracks were observed leading into and out of the SW-04 sampling location.
8/20/2019	Cupboard Creek was dry along Calhoun Road to SW-14. During an inspection of the cattle pond (SW-14), biosheen, live fish, and live frogs were observed.	No odors or distressed vegetation observed in wetlands either upstream or downstream of culvert under Lewis Drive. Some biological sheen near MW-37 and down toward MW-38. Observed frogs jumping in the water near MW-38.	No changes were observed in the Hayfield Zone from the last inspection.	No changes were observed in the Shallow Bedrock Zone from the last inspection.	No observed abnormalities along the hillside. Biological sheen and algae present.	No observed abnormalities along the hillside. Biological sheen and algae present.
9/19/2019	Cupboard Creek was dry leading to SW-14. Dead grass and trees around injection areas and farmers field were observed.	Daylighting around RW-14. Reduced flow at VAS-24 to 3 scfm. Daylighting issue resolved. Water levels low around SW-13.	Ant hills at most flush-mount wells. Overgrown grass in Hayfield Zone, low visibility of ground. Trees along treeline are healthy.	Conditions good. Large oak is dead on one side - possibly struck by lightning.	Kudzu in area. Path still open and clean.	Conditions good.
10/22/2019	Vegetation beginning to grow in areas around injection points. No flowing water toward SW-14. Vegetation near MW-57 is showing signs of regrowth.	No observed sheen or odors. Orange flocculant around culvert by SW-10. Beaver action steady. Tadpoles, frogs, fish, and birds observed within Browns Creek area. New grass growing along cleared right-of-way.	No close observations made in this area.	No change since last visit.	Vegetation was cleared along right-of-way path and toward SW-02 and SW-04. No suspicious trash along hillside. Turtle trap located near SW-02.	Game trail entering area of SW-04. Fish and tadpoles observed. No suspicious trash along hillside.

Table 1. Field Observation Log
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Date	Inspect Cupboard Creek Zone and Wetlands South of Calhoun Road (Any odor, sheen, or distressed vegetation? Describe.)	Inspect Browns Creek Upstream and Downstream of the Culvert Under Lewis Drive (Any odor, sheen, or distressed vegetation? Describe.)	Inspect Hayfield Area (Any odor, sheen, or distressed vegetation? Describe.)	Inspect Shallow Bedrock Zone Area (Any odor, sheen, or distressed vegetation? Describe.)	Inspect Hillside Adjacent to and South of SW-02 (Any odor, sheen, or distressed vegetation? Describe.)	Inspect Hillside Adjacent to and South of SW-04 (Any odor, sheen, or distressed vegetation? Describe.)
11/7/2019	Conditions good. Nothing to report.	Water level much higher on south side of Lewis Drive.	Grass recently cut, no distressed vegetation. Hot tub dumped in the north side of the hayfield.	Silt fence removed by grounds crew. Partially dead tree located in this area.	Area clear. Right-of-way has just been mowed.	Conditions good. Nothing to report.
12/20/2019	Dead vegetation near MW-57 has not increased in area. No sheen or odor was observed near SW-14. Water bodies from Calhoun Road to SW-14 were dry. Grass growth in the post-injection area has covered the disturbed area.	Water level has increased since previous quarterly event. Beavers are active in area. No sheen, odors, or distressed vegetation. Grass growth in the post-injection area has covered the disturbed area.	Hayfield area was recently cut. Air sparging could be heard along the tree line near MW-10 and MW-03. Hot tub still in north area of hayfield. Tire tracks observed along tree line.	No major changes to Shallow Bedrock Zone. Half of the oak tree near MW-27 is dead.	No suspicious trash observed. A television was thrown along the hillside leading to SW-02. Water levels in this area have increased since last event.	The new culvert has potentially caused the water body to shift closer to MW-38 and MW-37.
1/8/2020	Cupboard Creek was flowing toward SW-14. Grass is growing nicely around the post-injection areas. A dead vegetation spot by SW-57 has not increased in size and has started to become overgrown by grass.	Biosheen was observed along surface water sampling pathway. Beaver activity has increased around SW-03, culvert by SW-01, and SW-09. A beaver dam has been built adjacent to the culvert on the south side of Lewis Drive. Water levels are back to what was observed in 2016 for this area.	No change since last visit.	Increased pressure observed when opening MW-11. No daylighting observed along sparge wells.	No observed sheen or odors. No trash observed that could impact stream.	No change since last visit.
2/13/2020	Cupboard Creek flowing from SW-05 to SW-14. Grass in post-injection areas continues to grow. Odors present near MW-19 toward RS-08.	Recent heavy rains in area. Beaver dam was washed out of culvert reducing water levels along the south side of Browns Creek. Vegetation shows signs of water wash-out on north side.	Hayfield area slightly flooded around MW-30 and MW-05. No major noticeable changes. Odors present near MW-18.	Possible large dead tree at top of hill leading to Browns Creek. Area under increased pressure from sparging.	Wash-out of a beaver dam caused a flash flood in the area. Observed an increase of debris scattered in creek.	Wash-out of a beaver dam caused a flash flood in the area. Observed an increase of debris scattered in creek.
3/13/2020	Cupboard Creek is flowing along SW-14. Grass in areas where post-injection sampling took place is growing back.	Browns Creek water levels at SW-01 and SW-12 have increased since February 2020 with the beaver dam backup within the culvert. Uprooted tree closer to SW-03.	Hayfield area appearance has remained steady. Hot tub is still in area. UTV tire tracks present.	Increased air sparging pressure around area. Large tree that was observed to be "half dead" shows fungal growth along trunk as well as multiple broken branches.	Beaver activity observed.	No suspicious trash. Dead dog dumped along culvert. Algae growth mainly near SW-13 (tan color).

Note:
ID = identification
MW = monitoring well
RW = recovery well
scfm = standard cubic feet per minute
SW = surface water
UTV = utility terrain vehicle
VAS = vertical air sparge

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
MW-01					853.07			
	3/9/2020	-	3.25	-		849.82	-	
	12/16/2019	-	3.99	-		849.08	-	
	9/16/2019	-	12.08	-		840.99	-	
	6/3/2019	-	7.55	-		845.52	-	
MW-01B					852.99			
	3/9/2020	-	4.66	-		848.33	-	
	12/16/2019	-	11.61	-		841.38	-	
	9/16/2019	-	11.78	-		841.21	-	
	6/3/2019	-	6.55	-		846.44	-	
MW-02					841.04			
	3/9/2020	-	1.59	-		839.45	-	Sparging near top of casing
	12/16/2019	-	-	-		841.04	-	Sparging out of well casing
	9/16/2019	-	14.63	-		826.41	-	
	6/3/2019	-	3.20	-		837.84	-	Bubbling within casing
MW-02B					841.19			
	3/9/2020	-	9.90	-		831.29	-	Under pressure
	12/16/2019	-	10.72	-		830.47	-	
	9/16/2019	-	22.23	-		818.96	-	
	6/3/2019	-	5.48	-		835.71	-	
MW-03					838.36			
	3/9/2020	-	4.67	-		833.69	-	Under high pressure
	12/16/2019	-	7.80	-		830.56	-	Air sparging on
	9/16/2019	-	19.89	-		818.47	-	
	6/3/2019	-	7.00	-		831.36	-	Over pressure
MW-04					844.42			
	3/9/2020	-	4.74	-		839.68	-	
	12/16/2019	-	13.57	-		830.85	-	
	9/16/2019	-	14.48	-		829.94	-	
	6/3/2019	-	7.17	-		837.25	-	
MW-05					851.11			
	3/9/2020	-	6.65	-		844.46	-	
	12/16/2019	-	17.70	-		833.41	-	
	9/16/2019	-	16.50	-		834.61	-	

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	6/3/2019	-	9.89	-		841.22	-	
MW-06					852.92			
	3/9/2020	-	7.05	-		845.87	-	
	12/16/2019	-	14.89	-		838.03	-	
	9/16/2019	-	13.73	-		839.19	-	
	6/3/2019	-	8.84	-		844.08	-	
MW-06B					852.57			
	3/9/2020	-	7.20	-		845.37	-	
	12/16/2019	-	14.90	-		837.67	-	
	9/16/2019	-	13.52	-		839.05	-	
	6/3/2019	-	8.59	-		843.98	-	Ant nest within casing
MW-07					853.02			
	3/9/2020	-	7.03	-		845.99	-	
	2/11/2020	-	9.31	-		843.71	-	
	12/16/2019	-	-	-		853.02	-	Dry
	11/4/2019	-	13.23	-		839.79	-	
	9/16/2019	-	12.81	-		840.21	-	
	8/19/2019	-	11.61	-		841.41	-	
	6/3/2019	-	7.99	-		845.03	-	
	5/13/2019	-	6.90	-		846.12	-	
MW-08					844.72			
	3/9/2020	-	8.15	-		836.57	-	Under pressure
	12/16/2019	-	5.49	-		839.23	-	Inconsistent gauging numbers
	9/16/2019	-	17.16	-		827.56	-	
	6/3/2019	-	9.15	-		835.57	-	
	5/13/2019	8.02	9.02	**1.00**		835.70	836.43	
	4/8/2019	-	7.78	-		836.94	-	
MW-09					843.63			
	3/9/2020	-	2.70	-		840.93	-	Water sparging to top of casing
	12/16/2019	-	-	-		843.63	-	Water sparging out of well
	9/16/2019	-	13.30	-		830.33	-	Sparging
	6/3/2019	-	8.08	-		835.55	-	Bubbling within casing
MW-09B					843.92			
	3/9/2020	-	3.75	-		840.17	-	

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	12/16/2019	-	11.31	-		832.61	-	
	9/16/2019	-	15.49	-		828.43	-	
	6/3/2019	-	5.22	-		838.70	-	
MW-10					845.41			
	3/9/2020	-	6.13	-		839.28	-	
	12/16/2019	-	16.77	-		828.64	-	
	9/16/2019	-	19.95	-		825.46	-	
	6/3/2019	-	11.56	-		833.85	-	
MW-11					855.63			
	3/9/2020	-	26.62	-		829.01	-	Well pressurized
	2/11/2020	-	27.30	-		828.33	-	Slight pressure
	12/16/2019	31.72	31.73	0.01		823.90	823.91	
	9/16/2019	29.80	29.82	0.02		825.81	825.82	
	6/3/2019	-	24.69	-		830.94	-	
	5/13/2019	-	23.76	-		831.87	-	
	4/8/2019	-	23.11	-		832.52	-	Strong odor
MW-12					834.53			
	3/9/2020	-	9.22	-		825.31	-	
	12/16/2019	-	14.68	-		819.85	-	
	9/16/2019	-	14.67	-		819.86	-	
	6/3/2019	-	10.43	-		824.10	-	
	5/13/2019	-	9.24	-		825.29	-	
	4/8/2019	-	10.61	-		823.92	-	
MW-12B					834.98			
	3/9/2020	-	8.31	-		826.67	-	
	2/11/2020	-	8.93	-		826.05	-	
	12/16/2019	-	14.64	-		820.34	-	
	11/4/2019	-	15.39	-		819.59	-	
	9/16/2019	-	14.59	-		820.39	-	
	8/19/2019	-	12.07	-		822.91	-	No odor
	6/3/2019	-	11.57	-		823.41	-	
	5/13/2019	-	10.31	-		824.67	-	
	4/8/2019	-	10.58	-		824.40	-	
MW-13					848.84			

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	3/9/2020	-	17.63	-		831.21	-	
	12/16/2019	-	-	-		848.84	-	Dry
	9/16/2019	-	22.01	-		826.83	-	
	6/3/2019	-	13.52	-		835.32	-	
MW-13B					849.82			
	3/9/2020	-	18.81	-		831.01	-	
	2/11/2020	-	20.70	-		829.12	-	
	12/16/2019	-	24.25	-		825.57	-	
	9/16/2019	-	23.23	-		826.59	-	
	6/3/2019	-	14.28	-		835.54	-	
MW-14					838.70			
	3/9/2020	-	11.16	-		827.54	-	
	12/16/2019	-	17.79	-		820.91	-	
	9/16/2019	-	17.45	-		821.25	-	
	6/3/2019	-	17.53	-		821.17	-	
MW-14B					840.20			
	3/9/2020	-	12.84	-		827.36	-	
	12/16/2019	-	19.62	-		820.58	-	
	9/16/2019	-	18.26	-		821.94	-	
	6/3/2019	-	18.33	-		821.87	-	
MW-15					831.03			
	3/9/2020	-	7.96	-		823.07	-	
	12/16/2019	-	12.27	-		818.76	-	
	9/16/2019	-	11.56	-		819.47	-	
	6/3/2019	-	4.84	-		826.19	-	
	5/13/2019	-	8.94	-		822.09	-	
	4/8/2019	-	8.25	-		822.78	-	
MW-15B					831.29			
	3/9/2020	-	13.64	-		817.65	-	
	2/11/2020	-	13.55	-		817.74	-	
	12/16/2019	-	15.19	-		816.10	-	Odor
	11/4/2019	-	15.90	-		815.39	-	
	9/16/2019	-	15.68	-		815.61	-	
	8/19/2019	-	15.52	-		815.77	-	Slight odor

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	6/3/2019	-	13.95	-		817.34	-	
	5/13/2019	-	13.42	-		817.87	-	
	4/8/2019	-	13.38	-		817.91	-	
MW-16					847.67			
	3/9/2020	-	2.35	-		845.32	-	Pressure
	12/16/2019	-	10.20	-		837.47	-	Sparge system on
	9/16/2019	-	14.97	-		832.70	-	Well surging
	6/3/2019	-	5.50	-		842.17	-	Bubbling within casing
	5/13/2019	-	-	-		847.67	-	Artesian
MW-17					855.35			
	3/9/2020	-	8.85	-		846.50	-	
	12/16/2019	-	10.85	-		844.50	-	
	9/16/2019	-	10.83	-		844.52	-	
	6/3/2019	-	9.73	-		845.62	-	
MW-17B					855.37			
	3/9/2020	-	9.63	-		845.74	-	
	2/11/2020	-	11.35	-		844.02	-	
	12/16/2019	-	16.40	-		838.97	-	
	11/4/2019	-	16.88	-		838.49	-	
	9/16/2019	-	15.31	-		840.06	-	
	8/19/2019	-	13.97	-		841.40	-	Slight odor
	6/3/2019	-	10.69	-		844.68	-	
	5/13/2019	-	9.59	-		845.78	-	
MW-18					846.89			
	3/9/2020	-	4.70	-		842.19	-	Pressure
	12/16/2019	-	19.24	-		827.65	-	Sparge system on
	9/16/2019	-	15.78	-		831.11	-	
	6/3/2019	-	14.70	-		832.19	-	Bubbling within casing
	5/13/2019	-	12.74	-		834.15	-	Unstable reading due to sparge
	4/8/2019	-	15.29	-		831.60	-	
MW-19					853.94			
	3/9/2020	-	4.92	-		849.02	-	Sparging observed
	12/16/2019	-	7.81	-		846.13	-	Well pressurized
	9/16/2019	-	11.78	-		842.16	-	

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	6/3/2019	-	8.30	-		845.64	-	
	5/13/2019	-	7.56	-		846.38	-	Bubbling from system
	4/8/2019	-	9.34	-		844.60	-	Strong odor
MW-20					852.89			
	3/9/2020	-	8.13	-		844.76	-	Under pressure
	2/11/2020	-	6.65	-		846.24	-	Under pressure
	12/16/2019	-	12.40	-		840.49	-	
	11/4/2019	12.89	13.09	0.20		839.80	839.94	
	9/16/2019	11.87	12.07	0.20		840.82	840.96	
	8/19/2019	11.44	11.66	0.22		841.23	841.39	
	6/3/2019	-	8.14	-		844.75	-	
	5/13/2019	-	7.08	-		845.81	-	
	4/8/2019	-	6.56	-		846.33	-	Strong odor
MW-21					855.77			
	3/9/2020	-	10.58	-		845.19	-	
	12/16/2019	-	16.54	-		839.23	-	
	9/16/2019	-	16.11	-		839.66	-	
	6/3/2019	-	12.21	-		843.56	-	
MW-22					854.60			
	3/9/2020	-	4.95	-		849.65	-	
	12/16/2019	-	9.57	-		845.03	-	
	9/16/2019	-	9.98	-		844.62	-	
	6/3/2019	-	7.72	-		846.88	-	
MW-23					849.57			
	3/9/2020	-	4.54	-		845.03	-	
	2/11/2020	-	5.08	-		844.49	-	
	12/16/2019	-	9.98	-		839.59	-	
	11/4/2019	-	11.28	-		838.29	-	
	9/16/2019	-	10.27	-		839.30	-	
	8/19/2019	-	9.51	-		840.06	-	
	6/3/2019	-	6.63	-		842.94	-	
MW-23B					849.69			
	3/9/2020	-	8.32	-		841.37	-	
	12/16/2019	-	9.49	-		840.20	-	

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	9/16/2019	-	7.65	-		842.04	-	
	6/3/2019	-	5.79	-		843.90	-	
MW-24					817.92			
	3/9/2020	-	4.70	-		813.22	-	
	12/16/2019	-	3.77	-		814.15	-	
	9/16/2019	-	5.28	-		812.64	-	
	6/3/2019	-	4.94	-		812.98	-	Ant nest inside well
MW-24B					818.72			
	3/9/2020	-	5.36	-		813.36	-	
	12/16/2019	-	4.78	-		813.94	-	
	9/16/2019	-	5.84	-		812.88	-	
	6/3/2019	-	5.44	-		813.28	-	
MW-25					826.18			
	3/9/2020	-	6.00	-		820.18	-	
	12/16/2019	-	8.23	-		817.95	-	
	9/16/2019	-	8.47	-		817.71	-	
	6/3/2019	-	6.49	-		819.69	-	
	5/13/2019	-	6.26	-		819.92	-	
	4/8/2019	-	9.16	-		817.02	-	
MW-25B					823.81			
	3/9/2020	-	2.45	-		821.36	-	
	12/16/2019	-	4.53	-		819.28	-	
	9/16/2019	-	4.46	-		819.35	-	
	6/3/2019	-	3.11	-		820.70	-	
	5/13/2019	-	2.51	-		821.30	-	
	4/8/2019	-	2.68	-		821.13	-	
MW-26					847.56			
	3/9/2020	-	1.15	-		846.41	-	
	2/11/2020	-	1.37	-		846.19	-	
	12/16/2019	-	5.51	-		842.05	-	
	11/4/2019	-	7.98	-		839.58	-	
	9/16/2019	-	7.23	-		840.33	-	
	8/19/2019	-	6.46	-		841.10	-	
	6/3/2019	-	4.13	-		843.43	-	

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	5/13/2019	-	2.07	-		845.49	-	
MW-26B					847.81			
	3/9/2020	-	1.50	-		846.31	-	
	12/16/2019	-	9.19	-		838.62	-	
	9/16/2019	-	8.67	-		839.14	-	
	6/3/2019	-	3.74	-		844.07	-	
MW-27					854.11			
	3/9/2020	-	19.90	-		834.21	-	
	12/16/2019	-	27.55	-		826.56	-	
	9/16/2019	-	26.95	-		827.16	-	
	6/3/2019	-	21.14	-		832.97	-	Ant hill
MW-27B					857.14			
	3/9/2020	-	27.80	-		829.34	-	
	12/16/2019	-	29.04	-		828.10	-	
	9/16/2019	-	26.33	-		830.81	-	
	6/3/2019	-	24.80	-		832.34	-	
MW-28					844.31			
	3/9/2020	-	17.70	-		826.61	-	
	12/16/2019	-	23.53	-		820.78	-	
	9/16/2019	-	22.95	-		821.36	-	
	6/3/2019	-	19.14	-		825.17	-	
	5/13/2019	-	18.14	-		826.17	-	
	4/8/2019	-	17.42	-		826.89	-	
MW-29					852.20			
	3/9/2020	-	1.39	-		850.81	-	
	12/16/2019	-	8.36	-		843.84	-	
	9/16/2019	-	10.35	-		841.85	-	Fire ant hill
	6/3/2019	-	6.33	-		845.87	-	
	5/13/2019	-	4.19	-		848.01	-	
	4/8/2019	-	3.33	-		848.87	-	
MW-30					841.28			
	3/9/2020	-	8.71	-		832.57	-	
	12/16/2019	-	-	-		841.28	-	Dry
	9/16/2019	-	14.56	-		826.72	-	

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	6/3/2019	-	10.64	-		830.64	-	
MW-31					845.04			
	3/9/2020	-	16.32	-		828.72	-	
	12/16/2019	-	22.17	-		822.87	-	
	9/16/2019	-	21.63	-		823.41	-	
	6/3/2019	-	15.86	-		829.18	-	
MW-32					842.93			
	3/9/2020	-	11.29	-		831.64	-	Under pressure
	12/16/2019	-	15.56	-		827.37	-	Air sparge on
	9/16/2019	-	21.05	-		821.88	-	
	6/3/2019	-	13.55	-		829.38	-	
MW-33T					849.11			
	3/9/2020	-	23.73	-		825.38	-	
	12/16/2019	-	28.15	-		820.96	-	
	9/16/2019	-	27.90	-		821.21	-	
	6/3/2019	-	21.81	-		827.30	-	
MW-34					816.35			
	3/9/2020	-	2.55	-		813.80	-	
	2/11/2020	-	2.65	-		813.70	-	
	12/16/2019	-	2.19	-		814.16	-	
	11/4/2019	-	2.83	-		813.52	-	
	9/16/2019	-	3.36	-		812.99	-	
	8/19/2019	-	3.28	-		813.07	-	No odor
	6/3/2019	-	3.07	-		813.28	-	
	5/13/2019	-	2.58	-		813.77	-	
MW-35					829.40			
	3/9/2020	-	7.16	-		822.24	-	
	12/16/2019	-	9.27	-		820.13	-	
	9/16/2019	-	10.07	-		819.33	-	
	6/3/2019	-	7.86	-		821.54	-	
	5/13/2019	-	7.21	-		822.19	-	
	4/8/2019	-	6.79	-		822.61	-	
MW-36					858.47			
	3/9/2020	-	13.25	-		845.22	-	

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	2/11/2020	-	15.25	-		843.22	-	
	12/16/2019	-	19.83	-		838.64	-	
	11/4/2019	-	19.84	-		838.63	-	
	9/16/2019	-	18.22	-		840.25	-	
	8/19/2019	-	17.20	-		841.27	-	
	6/3/2019	-	14.87	-		843.60	-	
	5/13/2019	-	13.86	-		844.61	-	Ant hill
MW-36B					858.15			
	3/9/2020	-	12.95	-		845.20	-	
	12/16/2019	-	19.27	-		838.88	-	
	9/16/2019	-	17.94	-		840.21	-	
	6/3/2019	-	13.56	-		844.59	-	
MW-37					813.92			
	3/9/2020	-	3.14	-		810.78	-	
	2/11/2020	-	2.76	-		811.16	-	
	12/16/2019	-	3.16	-		810.76	-	
	11/4/2019	-	3.37	-		810.55	-	
	9/16/2019	-	3.79	-		810.13	-	
	8/19/2019	-	3.32	-		810.60	-	No odor
	7/17/2019	-	3.20	-		810.72	-	
	6/3/2019	-	3.19	-		810.73	-	
	5/13/2019	-	3.10	-		810.82	-	
MW-38					813.28			
	3/9/2020	-	1.02	-		812.26	-	
	2/11/2020	-	0.60	-		812.68	-	
	12/16/2019	-	1.20	-		812.08	-	
	11/4/2019	-	1.61	-		811.67	-	
	9/16/2019	-	1.89	-		811.39	-	
	8/19/2019	-	1.60	-		811.68	-	No odor
	7/17/2019	-	1.44	-		811.84	-	
	6/3/2019	-	1.36	-		811.92	-	
	5/13/2019	-	1.12	-		812.16	-	
MW-39					819.90			
	3/9/2020	-	4.40	-		815.50	-	

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	2/11/2020	-	3.64	-		816.26	-	
	12/16/2019	-	4.54	-		815.36	-	
	11/4/2019	-	5.06	-		814.84	-	
	9/16/2019	-	5.21	-		814.69	-	
	8/19/2019	-	4.13	-		815.77	-	No odor
	6/3/2019	-	4.54	-		815.36	-	
	5/13/2019	-	4.07	-		815.83	-	
	4/8/2019	-	4.09	-		815.81	-	
MW-40					817.79			
	3/9/2020	-	2.31	-		815.48	-	
	2/11/2020	-	2.11	-		815.68	-	
	12/16/2019	-	2.32	-		815.47	-	
	11/4/2019	-	2.84	-		814.95	-	
	9/16/2019	-	2.72	-		815.07	-	
	8/19/2019	-	2.27	-		815.52	-	No odor
	6/3/2019	-	2.33	-		815.46	-	
	5/13/2019	-	1.72	-		816.07	-	
MW-41					819.68			
	3/9/2020	-	3.51	-		816.17	-	
	2/11/2020	-	3.39	-		816.29	-	
	12/16/2019	-	3.81	-		815.87	-	
	11/4/2019	-	4.35	-		815.33	-	
	9/16/2019	-	4.45	-		815.23	-	
	8/19/2019	-	4.20	-		815.48	-	
	6/3/2019	-	3.07	-		816.61	-	
	5/13/2019	-	3.28	-		816.40	-	
	4/8/2019	-	3.68	-		816.00	-	
MW-42					820.33			
	3/9/2020	-	4.13	-		816.20	-	
	12/16/2019	-	4.45	-		815.88	-	
	9/16/2019	-	4.44	-		815.89	-	
	6/3/2019	-	4.52	-		815.81	-	
MW-43					818.12			
	3/9/2020	-	4.22	-		813.90	-	

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	12/16/2019	-	3.47	-		814.65	-	
	9/16/2019	-	5.29	-		812.83	-	
	6/3/2019	-	5.03	-		813.09	-	
MW-43B					818.80			
	3/9/2020	-	2.66	-		816.14	-	
	12/16/2019	-	2.19	-		816.61	-	
	9/16/2019	-	2.64	-		816.16	-	
	6/3/2019	-	1.45	-		817.35	-	
MW-44					853.67			
	3/9/2020	-	2.20	-		851.47	-	
	12/16/2019	-	7.83	-		845.84	-	
	9/16/2019	-	9.43	-		844.24	-	
	6/3/2019	-	6.89	-		846.78	-	
MW-44B					853.38			
	3/9/2020	-	7.34	-		846.04	-	
	12/16/2019	-	14.99	-		838.39	-	
	9/16/2019	-	13.60	-		839.78	-	
	6/3/2019	-	8.57	-		844.81	-	
MW-45					852.47			
	3/9/2020	-	7.74	-		844.73	-	
	2/11/2020	-	9.41	-		843.06	-	
	12/16/2019	-	-	-		852.47	-	Dry
	9/16/2019	-	13.50	-		838.97	-	
	6/3/2019	-	9.88	-		842.59	-	Ant hill
MW-45B					852.85			
	3/9/2020	-	11.35	-		841.50	-	
	12/16/2019	-	15.70	-		837.15	-	
	9/16/2019	-	14.01	-		838.84	-	
	6/3/2019	-	10.52	-		842.33	-	Ant hill
MW-46					845.47			
	3/9/2020	-	3.83	-		841.64	-	
	2/11/2020	-	4.13	-		841.34	-	
	12/16/2019	-	8.34	-		837.13	-	
	11/4/2019	-	10.06	-		835.41	-	

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	9/16/2019	-	9.32	-		836.15	-	
	8/19/2019	-	8.54	-		836.93	-	No odor
	7/17/2019	-	7.50	-		837.97	-	
	6/3/2019	-	6.32	-		839.15	-	
MW-47					842.98			
	3/9/2020	-	12.55	-		830.43	-	
	12/16/2019	-	19.41	-		823.57	-	
	9/16/2019	-	19.29	-		823.69	-	
	6/3/2019	-	13.64	-		829.34	-	
MW-48B					832.34			
	3/9/2020	-	14.84	-		817.50	-	
	12/16/2019	-	17.91	-		814.43	-	
	9/16/2019	-	18.02	-		814.32	-	
	6/3/2019	-	15.82	-		816.52	-	
MW-49					846.78			
	3/9/2020	-	12.05	-		834.73	-	
	12/16/2019	-	20.10	-		826.68	-	
	9/16/2019	-	19.45	-		827.33	-	
	6/3/2019	-	14.68	-		832.10	-	
MW-50B					850.34			
	3/9/2020	-	18.36	-		831.98	-	
	2/11/2020	-	18.82	-		831.52	-	
	12/16/2019	-	23.67	-		826.67	-	
	9/16/2019	-	23.59	-		826.75	-	
	6/3/2019	-	17.75	-		832.59	-	
MW-51					831.92			
	2/11/2020	-	16.14	-		815.78	-	
	11/4/2019	-	18.60	-		813.32	-	
	8/19/2019	-	18.76	-		813.16	-	
	5/13/2019	-	17.29	-		814.63	-	
MW-52					830.09			
	2/11/2020	-	15.11	-		814.98	-	
	11/4/2019	-	17.19	-		812.90	-	
	8/19/2019	-	16.92	-		813.17	-	

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	5/13/2019	-	15.46	-		814.63	-	
MW-53					837.37			
	2/11/2020	-	5.18	-		832.19	-	Slight pressure
	11/4/2019	-	13.19	-		824.18	-	
	8/19/2019	-	11.80	-		825.57	-	
	5/13/2019	-	5.84	-		831.53	-	
MW-54					840.79			
	2/11/2020	-	9.80	-		830.99	-	Slight pressure
	11/4/2019	-	15.44	-		825.35	-	
	8/19/2019	-	15.87	-		824.92	-	
	5/13/2019	-	8.12	-		832.67	-	
MW-55					859.71			
	2/11/2020	-	16.31	-		843.40	-	
	11/4/2019	-	21.46	-		838.25	-	
	8/19/2019	-	18.89	-		840.82	-	
	5/13/2019	-	14.60	-		845.11	-	
	4/8/2019	-	13.15	-		846.56	-	
MW-56					843.94			
	3/9/2020	-	3.20	-		840.74	-	
	2/11/2020	-	3.61	-		840.33	-	Under pressure
	12/16/2019	-	7.08	-		836.86	-	
	11/4/2019	-	8.88	-		835.06	-	
	9/16/2019	-	8.18	-		835.76	-	
	8/19/2019	-	7.46	-		836.48	-	No odor
	7/17/2019	-	6.46	-		837.48	-	
	5/13/2019	-	4.02	-		839.92	-	
	4/8/2019	-	3.27	-		840.67	-	
MW-57					845.63			
	3/9/2020	-	4.66	-		840.97	-	
	2/11/2020	-	4.76	-		840.87	-	
	12/16/2019	-	8.87	-		836.76	-	
	11/4/2019	-	10.99	-		834.64	-	
	9/16/2019	-	9.76	-		835.87	-	
	8/19/2019	-	8.99	-		836.64	-	Slight odor

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	7/17/2019	-	8.08	-		837.55	-	
	5/14/2019	-	5.67	-		839.96	-	
	4/8/2019	-	4.78	-		840.85	-	
RS-01					849.13			
	3/9/2020	5.25	5.27	0.02		843.86	843.87	
	12/16/2019	11.73	11.76	0.03		837.37	837.39	
	9/16/2019	12.85	12.87	0.02		836.26	836.27	
	6/3/2019	6.09	6.11	0.02		843.02	843.03	
	5/13/2019	-	4.92	-		844.21	-	
	4/8/2019	3.40	3.41	0.01		845.72	845.73	
RS-02					849.52			
	3/9/2020	-	3.51	-		846.01	-	
	12/16/2019	-	9.82	-		839.70	-	
	9/16/2019	-	12.19	-		837.33	-	
	6/3/2019	-	5.71	-		843.81	-	
	5/13/2019	-	4.12	-		845.40	-	
	4/8/2019	2.79	2.80	0.01		846.72	846.73	
RS-04					851.47			
	3/9/2020	-	4.39	-		847.08	-	
	9/16/2019	-	9.77	-		841.70	-	
	5/13/2019	-	5.02	-		846.45	-	
RS-05					848.31			
	3/9/2020	5.91	5.94	0.03		842.37	842.39	
	12/16/2019	11.32	11.34	0.02		836.97	836.98	
	9/16/2019	12.10	12.30	0.20		836.01	836.16	
	6/3/2019	-	5.67	-		842.64	-	
	5/13/2019	4.76	4.87	0.11		843.44	843.52	
	4/8/2019	3.36	3.42	0.06		844.89	844.93	
RS-06					849.47			
	3/9/2020	-	5.45	-		844.02	-	
	9/16/2019	-	12.23	-		837.24	-	
	5/13/2019	-	4.51	-		844.96	-	
RS-07					855.08			
	3/9/2020	-	7.47	-		847.61	-	

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	9/16/2019	-	13.46	-		841.62	-	
	5/13/2019	-	8.34	-		846.74	-	
RS-08					854.24			
	3/9/2020	-	7.69	-		846.55	-	
	9/16/2019	-	13.46	-		840.78	-	
	5/13/2019	-	8.67	-		845.57	-	
	4/8/2019	-	7.24	-		847.00	-	
RS-09					847.60			
	3/9/2020	-	6.02	-		841.58	-	
	9/16/2019	-	11.89	-		835.71	-	
	5/13/2019	-	4.37	-		843.23	-	
RS-10					847.42			
	3/9/2020	-	5.44	-		841.98	-	
	9/16/2019	-	10.65	-		836.77	-	
	5/13/2019	-	3.88	-		843.54	-	
	4/8/2019	-	2.24	-		845.18	-	
RS-11					847.44			
	3/9/2020	-	4.62	-		842.82	-	
	9/16/2019	-	9.28	-		838.16	-	
	5/13/2019	-	2.94	-		844.50	-	
RS-12					847.74			
	3/9/2020	-	5.00	-		842.74	-	
	9/16/2019	-	9.59	-		838.15	-	
	5/13/2019	-	3.27	-		844.47	-	
RS-13					845.98			
	3/9/2020	-	1.92	-		844.06	-	
	9/16/2019	-	12.48	-		833.50	-	
	5/13/2019	-	2.14	-		843.84	-	
RS-14					845.97			
	3/9/2020	-	2.26	-		843.71	-	
	12/16/2019	2.72	2.74	0.02		843.23	843.24	
	9/16/2019	-	9.40	-		836.57	-	
	6/3/2019	-	3.82	-		842.15	-	
	5/13/2019	-	2.72	-		843.25	-	

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	4/8/2019	-	0.96	-		845.01	-	Biological sheen around well
RS-15					846.41			
	3/9/2020	-	NM	-		-	-	
	9/16/2019	-	9.29	-		837.12	-	
	5/13/2019	-	3.14	-		843.27	-	
RS-16					845.44			
	3/9/2020	-	2.75	-		842.69	-	
	9/16/2019	-	10.39	-		835.05	-	
	5/13/2019	-	3.58	-		841.86	-	
RS-17					844.22			
	3/9/2020	-	2.15	-		842.07	-	
	9/16/2019	-	10.68	-		833.54	-	
	5/13/2019	-	3.01	-		841.21	-	
	4/8/2019	-	1.14	-		843.08	-	
RS-18					847.89			
	3/9/2020	-	5.12	-		842.77	-	
	9/16/2019	-	12.48	-		835.41	-	
	5/13/2019	-	4.37	-		843.52	-	
RS-20					842.69			
	3/9/2020	-	3.53	-		839.16	-	
	9/16/2019	-	-	-		842.69	-	Dry
	5/13/2019	-	3.75	-		838.94	-	
RT-1A					854.06			
	3/9/2020	-	8.02	-		846.04	-	
	12/16/2019	-	13.05	-		841.01	-	
	9/16/2019	-	13.29	-		840.77	-	
	6/3/2019	-	9.32	-		844.74	-	
	5/13/2019	-	8.04	-		846.02	-	
	4/8/2019	-	7.31	-		846.75	-	
RT-1B					854.15			
	3/9/2020	-	7.47	-		846.68	-	
	12/16/2019	-	12.99	-		841.16	-	
	9/16/2019	-	13.28	-		840.87	-	
	6/3/2019	-	9.33	-		844.82	-	

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	5/13/2019	-	8.11	-		846.04	-	
	4/8/2019	-	7.34	-		846.81	-	
RT-1C					854.55			
	3/9/2020	-	7.41	-		847.14	-	
	12/16/2019	-	13.64	-		840.91	-	Well pressurized
	9/16/2019	-	13.88	-		840.67	-	
	6/3/2019	-	9.91	-		844.64	-	
	5/13/2019	-	9.68	-		844.87	-	
	4/8/2019	-	7.94	-		846.61	-	
RT-2A					817.48			
	5/13/2019	-	0.62	-		816.86	-	
RT-2B					817.61			
	5/13/2019	-	0.60	-		817.01	-	
RT-2C					818.06			
	5/13/2019	-	1.21	-		816.85	-	
RT-2D					818.12			
	5/13/2019	-	1.30	-		816.82	-	
RT-2E					818.25			
	5/13/2019	-	1.38	-		816.87	-	
RT-2F					818.57			
	5/13/2019	-	1.74	-		816.83	-	
RT-2G					820.07			
	5/13/2019	-	1.14	-		818.93	-	
RT-2I					819.51			
	5/13/2019	-	0.65	-		818.86	-	
RT-2J					817.63			
	5/13/2019	-	-	-		817.63	-	Artesian
RT-2K					817.40			
	5/13/2019	-	0.70	-		816.70	-	
	4/8/2019	-	0.48	-		816.92	-	
RT-2L					819.54			
	5/13/2019	-	1.01	-		818.53	-	
RW-01					851.92			
	3/9/2020	-	8.27	-		843.65	-	

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Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	12/16/2019	-	13.19	-		838.73	-	
	9/16/2019	-	17.32	-		834.60	-	
	6/3/2019	-	11.66	-		840.26	-	
	5/13/2019	-	11.63	-		840.29	-	
RW-02					852.69			
	3/9/2020	2.31	2.33	0.02		850.36	850.37	
	12/16/2019	24.59	24.65	0.06		828.04	828.08	
	9/16/2019	24.21	24.40	0.19		828.29	828.43	
	6/3/2019	19.45	19.47	0.02		833.22	833.23	
	5/13/2019	18.20	18.22	0.02		834.47	834.48	
	4/8/2019	17.47	17.48	0.01		835.21	835.22	
RW-03					852.34			
	3/9/2020	21.08	21.09	0.01		831.25	831.26	
	12/16/2019	24.78	24.84	0.06		827.50	827.54	
	9/16/2019	24.03	24.05	0.02		828.29	828.30	
	6/3/2019	20.15	20.16	0.01		832.18	832.19	
	5/13/2019	19.16	19.20	0.04		833.14	833.17	
	4/8/2019	17.55	17.73	0.18		834.61	834.74	
RW-04					853.93			
	3/9/2020	25.45	25.49	0.04		828.44	828.47	
	12/16/2019	31.46	31.57	0.11		822.36	822.44	
	9/16/2019	29.49	29.72	0.23		824.21	824.38	
	6/3/2019	22.84	22.86	0.02		831.07	831.09	
	5/13/2019	23.73	23.74	0.01		830.19	830.20	
	4/8/2019	22.85	22.89	0.04		831.04	831.07	
RW-05					853.53			
	3/9/2020	-	NM	-		-	-	
	12/16/2019	-	33.84	-		819.69	-	
	9/16/2019	32.88	32.93	0.05		820.60	820.64	
	6/3/2019	29.25	29.27	0.02		824.26	824.28	
	5/13/2019	28.63	28.64	0.01		824.89	824.90	
	4/8/2019	27.41	27.42	0.01		826.11	826.12	
RW-06					846.21			
	3/9/2020	-	21.94	-		824.27	-	

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Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	12/16/2019	-	26.93	-		819.28	-	
	9/16/2019	-	26.44	-		819.77	-	
	6/3/2019	-	22.71	-		823.50	-	
	5/13/2019	-	21.86	-		824.35	-	
RW-07					843.19			
	3/9/2020	18.77	18.78	0.01		824.41	824.42	
	12/16/2019	23.19	23.35	0.16		819.84	819.96	
	9/16/2019	-	23.45	-		819.74	-	
	6/3/2019	-	20.00	-		823.19	-	
	5/13/2019	19.07	19.08	0.01		824.11	824.12	
	4/8/2019	18.16	18.17	0.01		825.02	825.03	
RW-08					835.48			
	3/9/2020	-	12.33	-		823.15	-	
	12/16/2019	-	16.64	-		818.84	-	
	9/16/2019	-	16.64	-		818.84	-	
	6/3/2019	-	12.79	-		822.69	-	
	5/13/2019	-	12.07	-		823.41	-	
RW-09					835.12			
	3/9/2020	-	9.09	-		826.03	-	
	12/16/2019	-	14.07	-		821.05	-	
	9/16/2019	-	14.10	-		821.02	-	
	6/3/2019	-	9.83	-		825.29	-	
	5/13/2019	-	8.84	-		826.28	-	
RW-10					848.53			
	3/9/2020	-	8.33	-		840.20	-	
	12/16/2019	-	13.76	-		834.77	-	
	9/16/2019	-	13.74	-		834.79	-	
	6/3/2019	-	7.27	-		841.26	-	
	5/13/2019	-	6.86	-		841.67	-	
	4/8/2019	-	5.27	-		843.26	-	
RW-11					852.97			
	3/9/2020	-	8.69	-		844.28	-	Under high pressure
	12/16/2019	14.10	14.20	0.10		838.77	838.84	Well pressurized
	9/16/2019	-	12.37	-		840.60	-	

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Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	6/3/2019	8.85	8.87	0.02		844.10	844.11	Air sparging heard
	5/13/2019	-	9.84	-		843.13	-	
RW-12					854.49			
	3/9/2020	-	NM	-		-	-	
	12/16/2019	-	-	-		854.49	-	Dry
	9/16/2019	-	-	-		854.49	-	Dry
	6/3/2019	-	10.00	-		844.49	-	Air sparging heard
	5/13/2019	-	8.98	-		845.51	-	
RW-14					827.54			
	3/9/2020	-	-	-		827.54	-	Sparging to top of casing
	12/16/2019	-	5.20	-		822.34	-	
	9/16/2019	-	4.50	-		823.04	-	Sparging
	6/3/2019	-	8.65	-		818.89	-	
	5/13/2019	-	8.61	-		818.93	-	
RW-15					851.64			
	3/9/2020	-	7.91	-		843.73	-	
	12/16/2019	14.23	14.24	0.01		837.40	837.40	
	9/16/2019	-	13.78	-		837.86	-	
	6/3/2019	-	9.21	-		842.43	-	
	5/13/2019	-	7.87	-		843.77	-	
	4/8/2019	-	6.45	-		845.19	-	Strong odor
SW-01					812.82			
	3/9/2020	-	(0.20)	-		813.02	-	
	2/10/2020	-	-	-		812.82	-	Dry
	1/8/2020	-	(1.96)	-		814.78	-	
	12/16/2019	-	(1.32)	-		814.14	-	
	11/5/2019	-	(0.58)	-		813.40	-	
	10/22/2019	-	(0.16)	-		812.98	-	
	9/16/2019	-	(0.50)	-		813.32	-	
	8/19/2019	-	(0.08)	-		812.90	-	Minnows present
	7/17/2019	-	(0.60)	-		813.42	-	No odor / no sheen
	6/3/2019	-	(0.30)	-		813.12	-	
	5/13/2019	-	(0.60)	-		813.42	-	
SW-02					808.65			

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	3/9/2020	-	(1.67)	-		810.32	-	
	2/10/2020	-	NM	-		-	-	
	1/8/2020	-	NM	-		-	-	
	12/16/2019	-	(1.72)	-		810.37	-	
	11/5/2019	-	(1.62)	-		810.27	-	
	10/22/2019	-	(1.55)	-		810.20	-	
	9/16/2019	-	(1.42)	-		810.07	-	
	8/19/2019	-	(1.72)	-		810.37	-	
	7/17/2019	-	(1.90)	-		810.55	-	
	6/3/2019	-	(1.84)	-		810.49	-	
	5/13/2019	-	(1.80)	-		810.45	-	
SW-03					815.09			
	3/9/2020	-	(0.65)	-		815.74	-	
	2/10/2020	-	NM	-		-	-	
	1/8/2020	-	(1.48)	-		816.57	-	
	12/16/2019	-	(0.70)	-		815.79	-	
	10/22/2019	-	-	-		815.09	-	Dry
	9/16/2019	-	-	-		815.09	-	Dry
	8/19/2019	-	-	-		815.09	-	Dry
	7/17/2019	-	-	-		815.09	-	Dry
	6/3/2019	-	-	-		815.09	-	Dry
	5/13/2019	-	(0.70)	-		815.79	-	
SW-05					838.75			
	3/9/2020	-	(0.35)	-		839.10	-	
	2/10/2020	-	(0.34)	-		839.09	-	
	1/8/2020	-	NM	-		-	-	
	12/16/2019	-	-	-		838.75	-	Dry
	11/5/2019	-	-	-		838.75	-	Dry
	10/22/2019	-	-	-		838.75	-	Dry
	9/16/2019	-	-	-		838.75	-	Dry
	8/19/2019	-	-	-		838.75	-	Dry
	7/17/2019	-	-	-		838.75	-	Dry
	6/3/2019	-	-	-		838.75	-	Dry
	5/13/2019	-	(0.35)	-		839.10	-	

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
SW-08					802.04			
	3/9/2020	-	(0.84)	-		802.88	-	
	2/10/2020	-	-	-		802.04	-	Dry
	1/8/2020	-	(1.05)	-		803.09	-	
	12/16/2019	-	(1.06)	-		803.10	-	
	11/5/2019	-	(1.04)	-		803.08	-	
	10/22/2019	-	(0.70)	-		802.74	-	
	9/16/2019	-	(0.90)	-		802.94	-	
	8/19/2019	-	(0.50)	-		802.54	-	Heavy biosheen
	7/17/2019	-	(0.84)	-		802.88	-	No odor / biosheen
	6/3/2019	-	(0.60)	-		802.64	-	
	5/13/2019	-	(0.70)	-		802.74	-	
SW-10					778.09			
	3/9/2020	-	(0.40)	-		778.49	-	
	2/10/2020	-	(0.45)	-		778.54	-	
	1/8/2020	-	(0.80)	-		778.89	-	
	12/16/2019	-	(0.65)	-		778.74	-	
	11/5/2019	-	(0.66)	-		778.75	-	
	10/22/2019	-	(0.40)	-		778.49	-	
	9/16/2019	-	(4.00)	-		782.09	-	
	8/19/2019	-	(0.38)	-		778.47	-	No odor / orange floc
	7/17/2019	-	(0.39)	-		778.48	-	No odor / orange floc
	6/3/2019	-	(0.40)	-		778.49	-	
	5/13/2019	-	(0.50)	-		778.59	-	
TW-59					834.78			
	5/13/2019	-	-	-		834.78	-	Artesian
	4/8/2019	-	9.77	-		825.01	-	
TW-60					828.03			
	5/13/2019	-	5.98	-		822.05	-	
	4/8/2019	-	-	-		828.03	-	Water overflowing at casing
TW-66					820.31			
	5/13/2019	-	-	-		820.31	-	Artesian
	4/8/2019	-	-	-		820.31	-	Water overflowing at casing
TW-67					852.71			

Table 2. Groundwater Elevation and Product Thickness Data

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Top of Casing Elevation[a,b] (ft amsl)	Groundwater Elevation (ft amsl)	Corrected[c] Groundwater Elevation (ft amsl)	Notes
	5/13/2019	-	7.22	-		845.49	-	
	4/8/2019	-	6.56	-		846.15	-	
TW-73					850.53			
	5/13/2019	-	4.04	-		846.49	-	
	4/8/2019	-	4.39	-		846.14	-	

Notes:

[a] Elevation of zero mark (ft amsl) for surface water staff gauges.

[b] "RS-" and "RT-" features were trimmed to less than 12 inches above ground surface on March 14, 2017. Only the resurveyed top of casing elevation after trimming is displayed. Groundwater elevation calculations are based on the true top of casing elevation at the time

[c] Calculated based on an oil: water density ratio of 0.73.

Bold indicates the gauged product thickness was greater than 0.5 foot.

- = not applicable

amsl = above mean sea level

BTOC = below top of casing

DRY = well contained no measurable water or product

"B" designation in the location ID indicates bedrock well

* = well is not bracketing the water table

amsl = above mean sea level
BTOC = below top of casing
ft = feet
ID = identification
MW = monitoring well
NM = not measured
RS = recovery sump
RT = recovery trench
RW = recovery well
SW = surface water
TW = temporary piezometer well

The following features are no longer reliable for calculating groundwater elevation:

- RS-03 was abandoned on October 19, 2015.
- RS-19 was damaged on or about January 20, 2017.
- RT-2H was covered over on or about January 17, 2017, due to construction efforts in the vicinity.
- TW-46 was damaged on or about December 8, 2016.
- RW-13 is no longer accessible due to health and safety issues.

Table 3. Product Skimmer Recovery Results

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Well Identifier	Month 13 Volume Recovered (gal)	Month 14 Volume Recovered (gal)	Month 15 Volume Recovered (gal)	Month 16 Volume Recovered (gal)	Month 17 Volume Recovered (gal)	Month 18 Volume Recovered (gal)	Total Recovered to Date (gal)
Date	**4/8/2019**	**5/16/2019**	**6/3/2019**	**9/17/2019**	**12/16/2019**	**3/9/2020**	
Product Skimmers							
MW-08	-	-	-	-	-	-	**-**
MW-15	-	-	-	-	-	-	**-**
MW-20	-	-	-	-	-	-	**-**
RS-01	-	-	-	-	-	-	**-**
RS-02	0.002	0.006	-	-	-	-	**0.007**
RS-05	0.002	0.002	0.002	0.004	-	-	**0.009**
RS-10	-	-	-	-	-	-	**-**
RS-14	-	0.001	-	-	-	0.002	**0.002**
RS-17	-	-	-	-	-	-	**-**
RW-02	-	-	0.002	-	-	-	**0.002**
RW-03	0.102	0.002	0.070	0.008	0.002	-	**0.183**
RW-04	-	-	0.004	-	0.004	-	**0.008**
RW-05	-	-	0.039	0.063	0.001	-	**0.102**
RW-07	-	-	-	-	0.016	-	**0.016**
RW-08	-	-	-	-	-	-	**-**
RW-15	-	-	-	-	-	-	**-**
RW-10	-	-	-	-	-	-	**-**
Petroleum-Absorbent Socks							
MW-11	-	-	-	-	-	-	**-**
RS-08	0.012	0.220	-	-	-	-	**0.233**
RT-2K	-	0.093	-	-	-	-	**0.093**
RT-1A	0.114	0.235	-	-	-	-	**0.349**
RT-1B	-	0.240	-	-	-	-	**0.240**
RT-1C	0.121	0.120	0.035	-	-	-	**0.276**
Total:	**0.353**	**0.918**	**0.152**	**0.074**	**0.022**	**0.002**	**1.521**

Notes:

- = no product recovered

gal = gallons

MW = monitoring well

NA = not applicable

RS = recovery sump

RT = recovery trench

RW = recovery well

Table 4A. Analytical Results for Surface Water, First Quarter 2020
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
		Screening Value (µg/L):		2.2	a	530	a	1,000	a	NA	b	NA	b	NA	b	NA	b
SW-01	SW01-010820	1/8/2020	µg/L	**1.49**		1	U	1	U	2	U	1	U	5	U	1	U
	--	2/10/2020	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW01-031220	3/12/2020	µg/L	**7.99**		1	U	**2.04**		2	U	**1.19**		5	U	**1.12**	
SW-02	SW02-010820	1/8/2020	µg/L	**7.25**		1	U	1	U	2	U	1	U	5	U	**1.89**	
	SW02-021020	2/10/2020	µg/L	**23.7**		1	U	**1.92**		**4.60**		**3.03**		5	U	**1.37**	
	SW02-031220	3/12/2020	µg/L	**7.71**		1	U	**1.30**		2	U	**1.38**		5	U	**2.32**	
SW-03	SW03-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW03-021020	2/10/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW03-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
SW-04	SW04-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW04-021020	2/10/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW04-031220	3/12/2020	µg/L	**5.97**		1	U	**1.09**		2	U	**1.09**		5	U	**2.05**	
SW-05	SW05-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW05-021020	2/10/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW05-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
SW-07	SW07-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW07-021020	2/10/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW07-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
SW-08	SW08-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-021020	2/10/2020	µg/L	**8.05**		1	U	1	U	2	U	**1.19**		5	U	1	U
	SW08-031220	3/12/2020	µg/L	**1.07**		1	U	1	U	2	U	1	U	5	U	**1.50**	
SW-09	SW09-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-021020	2/10/2020	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW09-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.20**	
SW-10	SW10-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-021020	2/10/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
SW-11	SW11-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-021020	2/10/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
SW-12	SW12-010820	1/8/2020	µg/L	**1.36**		1	U	1	U	2	U	1	U	5	U	1	U
	SW12-021020	2/10/2020	µg/L	**18.9**		**1.54**		**2.68**		**20.7**		**5.13**		5	U	**2.39**	
	SW12-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
SW-13	SW13-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.79**	
	SW13-021020	2/10/2020	µg/L	**4.44**		1	U	1	U	2	U	1	U	5	U	**1.50**	
	SW13-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**3.73**	

Table 4A. Analytical Results for Surface Water, First Quarter 2020
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-14	SW14-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW14-021020	2/10/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW14-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U

Notes:
[a] South Carolina Department of Health and Environmental Control (SC DHEC) R.61-68, Water Classifications and Standards, Human Health for consumption of water and organism, June 27, 2014.
[b] Screening levels for these analytes are not specified in SC DHEC R. 61-68.
Samples analyzed by EPA Methods SW 8260B/8260D.
Bold indicates the analyte was detected above the method detection limit.
Gray shading indicates the analyte exceeded its screening value.
µg/L = microgram(s) per liter
ID = identification
MTBE = methyl tertiary butyl ether
NA = not applicable
NS-IW = sample not collected due to insufficient volume at surface water location
SW = surface water
U = analyte was not detected above the reported sample quantitation limit

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
		Screening Value (µg/L):		2.2	[a]	530	[a]	1,000	[a]	NA	[b]	NA	[b]	NA	[b]	NA	[b]
SW-RELEASE	SW-RELEASE	1/20/2015	µg/L	**330**		**490**		**2,400**		**2,100**		**940**		**140**		**5.7**	**J**
SW-01	SW01-121114	12/11/2014	µg/L	0.5	U	1	U	1	U	2	U	1	U	1	U	1	U
	SW01-022515	2/25/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW01-030215	3/2/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW01-031115	3/11/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW01-031815	3/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW01-033115	3/31/2015	µg/L	5	U[c]	5	U	**17.6**		10	U	5	U	5	U	NA	
	SW01-042215	4/22/2015	µg/L	5	U[c]	5	U	**14.9**		10	U	5	U	5	U	NA	
	SW01-050715	5/7/2015	µg/L	5	U[c]	5	U	**7.0**		10	U	5	U	5	U	NA	
	SW01-051915	5/19/2015	µg/L	5	U[c]	5	U	**8.8**		**10.6**		**6.4**		5	U	NA	
	SW01-060315	6/3/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW01-061815	6/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW01-071515	7/15/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW01-081315	8/13/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW01-092415	9/24/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW01-102215	10/22/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW01-112415	11/24/2015	µg/L	**7.8**		**1.5**		**13.0**		**9.3**		**4.6**		1	U	NA	
	SW01-122215	12/22/2015	µg/L	**4.6**		1	U	**8.8**		**5.5**		**3.1**		1	U	NA	
	SW01-012516	1/25/2016	µg/L	**17.6**		**2.3**		**36.0**		**11.3**		**6.3**		1	U	NA	
	SW01-021816	2/18/2016	µg/L	**23.4**		**3.0**		**55.6**		**15.0**		**9.1**		1	U	NA	
	SW01-031616	3/16/2016	µg/L	**20.1**		**2.4**		**42.3**		**13.3**		**7.6**		1	U	NA	
	SW01-042716	4/27/2016	µg/L	**20.8**		1	U	**30.6**		**2.9**		**2.0**		1	U	NA	
	SW01-050916	5/9/2016	µg/L	**16.5**		**1.4**		**16.3**		**7.0**		**4.8**		1	U	NA	
	SW01-062716	6/27/2016	µg/L	**9**		1	U	**3.3**		2	U	1	U	1	U	NA	
	SW01-072816	7/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW01-081916	8/19/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW01-092916	9/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW01-103116	10/31/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW01-112816	11/28/2016	µg/L	**5.0**		1	U	**10.4**		**4.9**		**8.3**		1	U	NA	
	SW01-122916	12/29/2016	µg/L	**12.6**		1	U	**22.1**		**11.2**		**13.5**		1	U	NA	
	SW01-012017	1/20/2017	µg/L	**1.0**		1	U	**2.3**		2	U	**3.5**		1	U	NA	
	SW01-022817	2/28/2017	µg/L	**18.5**		**1.93**		**37.0**		**13.8**		**10.2**		5	U	NA	
	SW01-031517	3/15/2017	µg/L	**3.02**		1	U	**5.13**		**2.16**		**1.74**		5	U	NA	
	SW01-032117	3/21/2017	µg/L	1	U	1	U	**1.57**		2	U	1	U	5	U	NA	
	SW01-033017	3/30/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW01-040517	4/5/2017	µg/L	1	U	1	U	**2.25**		2	U	1	U	5	U	NA	
	SW01-050417	5/4/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW01-061317	6/13/2017	µg/L	1	U	1	U	**1.90**		2	U	1	U	5	U	NA	
	SW01-071817	7/18/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-01	SW01-080217	8/2/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW01-090517	9/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW01-120517	12/5/2017	µg/L	**1.5**		1	U	**1.15**		2	U	**2.14**		5	U	NA	
	SW01-121417	12/14/2017	µg/L	**4.52**		1	U	**4.52**		**3.48**		**3.2**		5	U	NA	
	SW01-010918	1/9/2018	µg/L	1	U	1	U	1	U	2	U	**1.15**		5	U	NA	
	SW01-020618	2/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW01-030918	3/9/2018	µg/L	**1.15**		1	U	1	U	2	U	1	U	5	U	1	U
	SW01-040618	4/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.1**	
	SW01-050318	5/3/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW01-060718	6/7/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.43**	
	SW01-071218	7/12/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.09**	
	SW01-091418	9/14/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.51**	
	SW01-120418	12/4/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW01-021919	2/19/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	--	3/7/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW01-051519	5/15/2019	µg/L	**2.39**		1	U	1	U	2	U	1	U	5	U	**1.56**	
	SW01-060619	6/6/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.93**	
	SW01-071819	7/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**2.30**	
	SW01-082019	8/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.31**	
	SW01-091819	9/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW01-102219	10/22/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.71**	
	SW01-110519	11/5/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**2.09**	
	SW01-122019	12/20/2019	µg/L	**1.25**		1	U	1	U	2	U	1	U	5	U	1	U
	SW01-010820	1/8/2020	µg/L	**1.49**		1	U	1	U	2	U	1	U	5	U	1	U
	--	2/10/2020	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW01-031220	3/12/2020	µg/L	**7.99**		1	U	**2.04**		2	U	**1.19**		5	U	**1.12**	
SW-02	SW02-121114	12/11/2014	µg/L	0.5	U	1	U	1	U	2	U	1	U	1	U	1	U
	SW02-022515	2/25/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW02-030215	3/2/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW02-031115	3/11/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW02-031815	3/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW02-033115	3/31/2015	µg/L	5	U[c]	5	U	**6.0**		10	U	5	U	5	U	NA	
	SW02-042215	4/22/2015	µg/L	5	U[c]	5	U	**13.0**		10	U	5	U	5	U	NA	
	SW02-050715	5/7/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW02-051915	5/19/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW02-060315	6/3/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW02-061815	6/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW02-071515	7/15/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW02-081315	8/13/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW02-092415	9/24/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-02	SW02-102215	10/22/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW02-112415	11/24/2015	µg/L	**6**		**1.3**		**10.0**		**7.8**		**4.0**		1	U	NA	
	SW02-122215	12/22/2015	µg/L	**4.1**		1	U	**7.6**		**5.1**		**3.1**		1	U	NA	
	SW02-012516	1/25/2016	µg/L	**12**		**1.5**		**25.0**		**8.4**		**4.6**		1	U	NA	
	SW02-021816	2/18/2016	µg/L	**15.5**		**1.8**		**35.3**		**10.1**		**5.9**		1	U	NA	
	SW02-031616	3/16/2016	µg/L	**8**		**1.0**		**17.5**		**5.8**		**3.9**		1	U	NA	
	SW02-042716	4/27/2016	µg/L	**5.6**		1	U	**7.1**		2	U	1	U	1	U	NA	
	SW02-050916	5/9/2016	µg/L	**7.1**		1	U	**4.5**		**2.2**		**1.6**		1	U	NA	
	SW02-062716	6/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW02-072816	7/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW02-081916	8/19/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW02-092916	9/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW02-103116	10/31/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW02-112816	11/28/2016	µg/L	**5.4**		1	U	**1.6**		**2.6**		**4.8**		1	U	NA	
	SW02-122916	12/29/2016	µg/L	1	U	1	U	1	U	2	U	**1.4**		1	U	NA	
	SW02-012017	1/20/2017	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW02-022817	2/28/2017	µg/L	**10.7**		1	U	**11.0**		**4.14**		**4.23**		5	U	NA	
	SW02-031517	3/15/2017	µg/L	**11.4**		1	U	**8.6**		**4.45**		**3.6**		5	U	NA	
	SW02-032117	3/21/2017	µg/L	**8.42**		1	U	**2.45**		**2.48**		**2.68**		5	U	NA	
	SW02-033017	3/30/2017	µg/L	**2.18**		1	U	1	U	2	U	1	U	5	U	NA	
	SW02-040517	4/5/2017	µg/L	**2.87**		1	U	**1.12**		2	U	**1.14**		5	U	NA	
	SW02-050417	5/4/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW02-061317	6/13/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW02-071817	7/18/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW02-080217	8/2/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW02-090517	9/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW02-120517	12/5/2017	µg/L	**26.6**		**1.8**		**8.39**		**10.2**		**7.17**		5	U	NA	
	SW02-121417	12/14/2017	µg/L	**21.1**		**1.53**		**9.4**		**9.74**		**7.32**		5	U	NA	
	SW02-010918	1/9/2018	µg/L	**25.0**		**1.56**		**12.4**		**11**		**8.24**		5	U	NA	
	SW02-020618	2/6/2018	µg/L	**6.69**		**1**	U	**2.65**		**2.75**		**1.87**		5	U	1	U
	SW02-030918	3/9/2018	µg/L	**3.19**		1	U	**1.39**		2	U	**1.11**		5	U	1	U
	SW02-040618	4/6/2018	µg/L	**2.23**		1	U	1	U	2	U	1	U	5	U	**2.13**	
	SW02-050318	5/3/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**2.25**	
	SW02-060718	6/7/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.92**	
	SW02-071218	7/12/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.15**	
	SW02-091418	9/14/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**2.94**	
	SW02-120418	12/4/2018	µg/L	**11.9**		1	U	**1.32**		**4.40**		**3.75**		5	U	**2.23**	
	SW02-021919	2/19/2019	µg/L	**19.7**		1	U	**2.67**		**4.60**		**4.44**		5	U	**2.12**	
	SW02-030719	3/7/2019	µg/L	**22.3**		1	U	**3.58**		**4.71**		**4.32**		5	U	**2.46**	
	SW02-040919	4/9/2019	µg/L	**2.8**		1	U	1	U	2	U	1	U	5	U	1	U

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-02	SW02-051519	5/15/2019	µg/L	**3.47**		1	U	1	U	2	U	1	U	5	U	**2.36**	
	SW02-060419	6/4/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**2.02**	
	SW02-071819	7/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.11**	
	SW02-082019	8/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.35**	
	SW02-091819	9/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.96**	
	SW02-102219	10/22/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**2.51**	
	SW02-110519	11/5/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**4.70**	
	SW02-122019	12/20/2019	µg/L	**9.47**		1	U	1	U	2	U	**2.23**		5	U	**2.68**	
	SW02-010820	1/8/2020	µg/L	**7.25**		1	U	1	U	2	U	1	U	5	U	**1.89**	
	SW02-021020	2/10/2020	µg/L	**23.7**		1	U	**1.92**		**4.60**		**3.03**		5	U	**1.37**	
	SW02-031220	3/12/2020	µg/L	**7.71**		1	U	**1.30**		2	U	**1.38**		5	U	**2.32**	
SW-03	SW-UPGRADIENT	1/20/2015	µg/L	0.5	U	1	U	**0.23 J**		2	U	1	U	1	U	1	U
	SW03-022515	2/25/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW03-030215	3/2/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW03-031115	3/11/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW03-031815	3/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW03-033115	3/31/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW03-042215	4/22/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW03-050715	5/7/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW03-051915	5/19/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW03-060315	6/3/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW03-061815	6/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW03-071515	7/15/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW03-081315	8/13/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	--	9/24/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW03-102215	10/22/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW03-112415	11/24/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW03-122215	12/22/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW03-012516	1/25/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW03-021816	2/18/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW03-031616	3/16/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW03-042716	4/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW03-050916	5/9/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW03-062716	6/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW03-072816	7/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	--	8/19/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW03-092916	9/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW03-103116	10/31/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW03-112816	11/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW03-122916	12/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-03	SW03-012017	1/20/2017	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW03-022817	2/28/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW03-031517	3/15/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW03-032117	3/21/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW03-033017	3/30/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW03-040517	4/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW03-050417	5/4/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW03-061317	6/13/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW03-071817	7/18/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW03-080217	8/2/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW03-090517	9/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW03-120517	12/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW03-121417	12/14/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	--	1/9/2018	--	NS-HS		NS-HS		NS-HS		NS-HS		NS-HS		NS-HS		NS-HS	
	SW03-020618	2/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW03-030918	3/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW03-040618	4/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW03-050318	5/3/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW03-060718	6/7/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW03-071218	7/12/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW03-091418	9/14/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW03-120418	12/4/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	--	3/7/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW03-051519	5/15/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	--	6/4/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW03-071819	7/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW03-082019	8/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	--	9/18/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW03-102219	10/22/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW03-110519	11/5/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW03-122019	12/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW03-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW03-021020	2/10/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW03-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
SW-04	SW-DOWNGRADIENT	1/20/2015	µg/L	**95**		**27**		**310**		**110**		**63**		**94**		**2.7**	
	SW04-022515	2/25/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW04-030215	3/2/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW04-031115	3/11/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW04-031815	3/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW04-033115	3/31/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-04	SW04-042215	4/22/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW04-050715	5/7/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW04-051915	5/19/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW04-060315	6/3/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW04-061815	6/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW04-071515	7/15/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW04-081315	8/13/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW04-092415	9/24/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW04-102215	10/22/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW04-112415	11/24/2015	µg/L	**1.7**		1	U	**2.7**		**2.9**		**1.6**		1	U	NA	
	SW04-122215	12/22/2015	µg/L	**3.3**		1	U	**7.3**		**5.2**		**2.7**		1	U	NA	
	SW04-012516	1/25/2016	µg/L	**6.9**		1	U	**14.0**		**4.9**		**2.8**		1	U	NA	
	SW04-021816	2/18/2016	µg/L	**10.9**		**1.1**		**25.4**		**7.0**		**4.3**		1	U	NA	
	SW04-031616	3/16/2016	µg/L	1	U	1	U	**2.0**		2	U	**1.8**		1	U	NA	
	SW04-042716	4/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW04-050916	5/9/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW04-062716	6/27/2016	µg/L	1	U	1	U	**1.1**		2	U	1	U	1	U	NA	
	SW04-072816	7/28/2016	µg/L	1	U	1	U	**23.5**		2	U	1	U	1	U	NA	
	SW04-081916	8/19/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW04-092916	9/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW04-103116	10/31/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW04-112816	11/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW04-122916	12/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW04-012017	1/20/2017	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW04-022817	2/28/2017	µg/L	1	U	1	U	**1.13**		2	U	1	U	5	U	NA	
	SW04-031517	3/15/2017	µg/L	1	U	1	U	**2.90**		2	U	1	U	5	U	NA	
	SW04-032117	3/21/2017	µg/L	1	U	1	U	**3.28**		2	U	1	U	5	U	NA	
	SW04-033017	3/30/2017	µg/L	1	U	1	U	**6.15**		2	U	1	U	5	U	NA	
	SW04-040517	4/5/2017	µg/L	1	U	1	U	**9.47**		2	U	1	U	5	U	NA	
	SW04-050417	5/4/2017	µg/L	1	U	1	U	**13.8**		2	U	1	U	5	U	NA	
	SW04-061317	6/13/2017	µg/L	1	U	1	U	**1.37**		2	U	1	U	5	U	NA	
	SW04-071817	7/18/2017	µg/L	1	U	1	U	**1.92**		2	U	1	U	5	U	NA	
	SW04-080217	8/2/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW04-090517	9/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW04-120517	12/5/2017	µg/L	1	U	1	U	**5.53**		2	U	1	U	5	U	NA	
	SW04-121417	12/14/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW04-010918	1/9/2018	µg/L	1	U	1	U	**4.09**		2	U	1	U	5	U	NA	
	SW04-020618	2/6/2018	µg/L	**3.04**		1	U	**1.73**		2	U	**1.12**		5	U	1	U
	SW04-030918	3/9/2018	µg/L	1	U	1	U	**1.37**		2	U	1	U	5	U	1	U
	SW04-040618	4/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-04	SW04-050318	5/3/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.2**	
	SW04-060718	6/7/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.31**	
	SW04-071218	7/12/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW04-091418	9/14/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.13**	
	SW04-120418	12/4/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW04-021919	2/19/2019	µg/L	**1.47**		1	U	1	U	2	U	1	U	5	U	1	U
	SW04-030719	3/7/2019	µg/L	**3.11**		1	U	1	U	2	U	1	U	5	U	1	U
	SW04-051519	5/15/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.27**	
	SW04-060419	6/4/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.36**	
	SW04-071819	7/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.12**	
	SW04-082019	8/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW04-091819	9/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW04-102219	10/22/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.56**	
	SW04-110519	11/5/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.71**	
	SW04-122019	12/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.06**	
	SW04-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW04-021020	2/10/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW04-031220	3/12/2020	µg/L	**5.97**		1	U	**1.09**		2	U	**1.09**		5	U	**2.05**	
SW-05	SW05-022515	2/25/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW05-030215	3/2/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW05-031115	3/11/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW05-031815	3/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW05-033115	3/31/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW05-042215	4/22/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW05-050715	5/7/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	--	5/19/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	6/3/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	6/18/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	7/15/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	8/13/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	9/24/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	10/22/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW05-112415	11/24/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW05-122215	12/22/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW05-012516	1/25/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW05-021816	2/18/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW05-031616	3/16/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	--	4/27/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	5/9/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	6/27/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-05	--	7/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	8/19/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	9/29/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	10/31/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	11/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/29/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	1/20/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	2/28/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/15/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/21/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/30/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	4/5/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	5/4/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	6/13/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	7/18/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	8/2/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	9/5/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/5/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/14/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	1/9/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW05-020618	2/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW05-030918	3/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	--	4/6/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW05-050318	5/3/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	--	6/7/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	7/12/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	9/14/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW05-120418	12/4/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW05-021919	2/19/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW05-030719	3/7/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW05-051519	5/15/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	--	6/4/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	7/18/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	8/20/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	9/18/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	10/22/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	11/5/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/20/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW05-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW05-021020	2/10/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-05	SW05-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
SW-06	SW06-022515	2/25/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW06-030215	3/2/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW06-031115	3/11/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW06-031815	3/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	--	3/31/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW06-042215	4/22/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	--	5/7/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	5/19/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	6/3/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	6/18/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	7/15/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	8/13/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	9/24/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	10/22/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	11/24/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW06-122215	12/22/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW06-012516	1/25/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW06-021816	2/18/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	--	3/16/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	4/27/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	5/9/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	6/27/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	7/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	8/19/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	9/29/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	10/31/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	11/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/29/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	1/20/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	2/28/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/15/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/21/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/30/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	4/5/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	5/4/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	6/13/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	7/18/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	8/2/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	9/5/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte															
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-06	--	12/5/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/14/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	1/9/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	2/6/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/9/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	4/6/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	5/3/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	6/7/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	7/12/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	9/14/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
SW-07	SW07-022515	2/25/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW07-030215	3/2/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW07-031115	3/11/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW07-031815	3/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW07-033115	3/31/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW07-042215	4/22/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW07-050715	5/7/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW07-051915	5/19/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW07-060315	6/3/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW07-061815	6/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW07-071515	7/15/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	--	8/13/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	9/24/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW07-102215	10/22/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW07-112415	11/24/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW07-122215	12/22/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW07-012516	1/25/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW07-021816	2/18/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW07-031616	3/16/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW07-042716	4/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW07-050916	5/9/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	--	6/27/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	7/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	8/19/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	9/29/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	10/31/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	11/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/29/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	1/20/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	2/28/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-07	SW07-031517	3/15/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW07-032117	3/21/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW07-033017	3/30/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW07-040517	4/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW07-050417	5/4/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW07-061317	6/13/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW07-071817	7/18/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	--	8/2/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	9/5/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW07-120517	12/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW07-121417	12/14/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW07-010918	1/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW07-020618	2/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW07-030918	3/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW07-040618	4/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW07-050318	5/3/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW07-060718	6/7/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW07-071218	7/12/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	--	9/14/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW07-120418	12/4/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW07-030719	3/7/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW07-051519	5/15/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW07-060619	6/6/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	--	7/18/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	8/20/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	9/18/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW07-102219	10/22/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	--	11/5/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW07-122019	12/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW07-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW07-021020	2/10/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW07-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
SW-08	SW08-022515	2/25/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW08-030215	3/2/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW08-031115	3/11/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW08-031815	3/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW08-033115	3/31/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW08-042215	4/22/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW08-050715	5/7/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW08-051915	5/19/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-08	SW08-060315	6/3/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW08-061815	6/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW08-071515	7/15/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW08-081315	8/13/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW08-092415	9/24/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW08-102215	10/22/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW08-112415	11/24/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW08-122215	12/22/2015	µg/L	**1.6**		1	U	**3.8**		**2.5**		**1.6**		1	U	NA	
	SW08-012516	1/25/2016	µg/L	**2.4**		1	U	**5.6**		**2**		**1.3**		1	U	NA	
	SW08-021816	2/18/2016	µg/L	**2.9**		1	U	**7.6**		**2.3**		**1.5**		1	U	NA	
	SW08-031616	3/16/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW08-042716	4/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW08-050916	5/9/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW08-062716	6/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW08-072816	7/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW08-081916	8/19/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW08-092916	9/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW08-103116	10/31/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW08-112816	11/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW08-122916	12/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW08-012017	1/20/2017	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW08-022817	2/28/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW08-031517	3/15/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW08-032117	3/21/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW08-033017	3/30/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW08-040517	4/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW08-050417	5/4/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW08-061317	6/13/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW08-071817	7/18/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW08-080217	8/2/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW08-090517	9/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW08-120517	12/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW08-121417	12/14/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW08-010918	1/9/2018	µg/L	**1.16**		1	U	1	U	2	U	**1.87**		5	U	NA	
	SW08-020618	2/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-030918	3/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-040618	4/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-050318	5/3/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-060718	6/7/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-071218	7/12/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-08	SW08-091418	9/14/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-120418	12/4/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-030719	3/7/2019	µg/L	**2.45**		1	U	1	U	2	U	1	U	5	U	**1.17**	
	SW08-051519	5/15/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-060419	6/4/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-071819	7/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-082019	8/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-091819	9/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-102219	10/22/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-110519	11/5/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-122019	12/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW08-021020	2/10/2020	µg/L	**8.05**		1	U	1	U	2	U	**1.19**		5	U	1	U
	SW08-031220	3/12/2020	µg/L	**1.07**		1	U	1	U	2	U	1	U	5	U	**1.50**	
SW-09	SW09-022515	2/25/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW09-030215	3/2/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW09-031115	3/11/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW09-031815	3/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW09-033115	3/31/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW09-042215	4/22/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW09-050715	5/7/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW09-051915	5/19/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW09-060315	6/3/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW09-061815	6/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW09-071515	7/15/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW09-081315	8/13/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW09-092415	9/24/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW09-102215	10/22/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW09-112415	11/24/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW09-122215	12/22/2015	µg/L	**2.1**		1	U	**4.8**		**3.3**		**2.1**		1	U	NA	
	SW09-012516	1/25/2016	µg/L	**3.3**		1	U	**7.1**		**2.4**		**1.5**		1	U	NA	
	SW09-021816	2/18/2016	µg/L	**2.2**		1	U	**5.9**		2	U	**1.2**		1	U	NA	
	SW09-031616	3/16/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW09-042716	4/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW09-050916	5/9/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW09-062716	6/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW09-072816	7/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW09-081916	8/19/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW09-092916	9/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW09-103116	10/31/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-09	SW09-112816	11/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW09-122916	12/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW09-012017	1/20/2017	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW09-022817	2/28/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW09-031517	3/15/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW09-032117	3/21/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW09-033017	3/30/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW09-040517	4/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW09-050417	5/4/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW09-061317	6/13/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW09-071817	7/18/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW09-080217	8/2/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
SW-09	SW09-090517	9/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW09-120517	12/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW09-121417	12/14/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW09-010918	1/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW09-020618	2/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-030918	3/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-040618	4/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-050318	5/3/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-060718	6/7/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-071218	7/12/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-091418	9/14/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-120418	12/4/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-030719	3/7/2019	µg/L	**1.88**		1	U	1	U	2	U	1	U	5	U	**1.07**	
	SW09-051519	5/15/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-060419	6/4/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-071819	7/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-082019	8/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-091819	9/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-102219	10/22/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-110519	11/5/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-122019	12/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW09-021020	2/10/2020	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW09-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.20**	
SW-10	SW10-022515	2/25/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW10-030215	3/2/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW10-031115	3/11/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW10-031815	3/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-10	SW10-033115	3/31/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW10-042215	4/22/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW10-050715	5/7/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW10-051915	5/19/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW10-060315	6/3/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW10-061815	6/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW10-071515	7/15/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW10-081315	8/13/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW10-092415	9/24/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW10-102215	10/22/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW10-112415	11/24/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW10-122215	12/22/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW10-012516	1/25/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW10-021816	2/18/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW10-031616	3/16/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW10-042716	4/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW10-050916	5/9/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW10-062716	6/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW10-072816	7/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW10-081916	8/19/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW10-092916	9/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW10-103116	10/31/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW10-112816	11/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW10-122916	12/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW10-012017	1/20/2017	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW10-022817	2/28/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW10-031517	3/15/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW-10-032117	3/21/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW-10-033017	3/30/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW-10-040517	4/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW10-050417	5/4/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW10-061317	6/13/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW10-071817	7/18/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW10-080217	8/2/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW10-090517	9/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW10-120517	12/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW10-121417	12/14/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW10-010918	1/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW10-020618	2/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-030918	3/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-10	SW10-040618	4/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-050318	5/3/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-060718	6/7/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-071218	7/12/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-091418	9/14/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-120418	12/4/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-030719	3/7/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-051519	5/15/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-060419	6/4/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-071819	7/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-082019	8/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-091819	9/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-102219	10/22/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-110519	11/5/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-122019	12/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-021020	2/10/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW10-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
SW-11	SW11-022515	2/25/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW11-030215	3/2/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW11-031115	3/11/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW11-031815	3/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW11-033115	3/31/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW11-042215	4/22/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW11-050715	5/7/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW11-051915	5/19/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW11-060315	6/3/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW11-061815	6/18/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW11-071515	7/15/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW11-081315	8/13/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW11-092415	9/24/2015	µg/L	5	U[c]	5	U	5	U	10	U	5	U	5	U	NA	
	SW11-102215	10/22/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW11-112415	11/24/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW11-122215	12/22/2015	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW11-012516	1/25/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW11-021816	2/18/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW11-031616	3/16/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW11-042716	4/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW11-050916	5/9/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW11-062716	6/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-11	SW11-072816	7/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW11-081916	8/19/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW11-092916	9/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW11-103116	10/31/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW11-112816	11/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW11-122916	12/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW11-012017	1/20/2017	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW11-022817	2/28/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW11-031517	3/15/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW-11-032117	3/21/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW-11-033017	3/30/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW-11-040517	4/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW11-050417	5/4/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW11-061317	6/13/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW11-071817	7/18/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW11-080217	8/2/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW11-090517	9/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW11-120517	12/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW11-121417	12/14/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW11-010918	1/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW11-020618	2/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-030918	3/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-040618	4/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-050318	5/3/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-060718	6/7/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-071218	7/12/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-091418	9/14/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-120418	12/4/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-030719	3/7/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-051519	5/15/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-060419	6/4/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-071819	7/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-082019	8/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-091819	9/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-102219	10/22/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-110519	11/5/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-122019	12/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-021020	2/10/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW11-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-12	SW12-081916	8/19/2016	µg/L	**6,430**		**764**		**15,400**		**3,360**		**1,730**		**128**		NA	
	SW12-092916	9/29/2016	µg/L	**7,850**		**1,030**		**19,000**		**3,910**		**1,940**		**143**		NA	
	SW12-103116	10/31/2016	µg/L	**165**		**17.7**		**302**		**103**		**58.2**		**4.7**		NA	
	SW12-112816	11/28/2016	µg/L	**486**		**59.6**		**976**		**351**		**181**		**14.2**		NA	
	SW12-122916	12/29/2016	µg/L	**707**		**97.3**		**1,790**		**408**		**213**		**16.8**		NA	
	SW12-012017	1/20/2017	µg/L	**212**		**19.8**		**396**		**104**		**58**		**3.8**		NA	
	SW12-022817	2/28/2017	µg/L	**26.1**		**4.04**		**62.3**		**18.0**		**9.73**		5	U	NA	
	SW12-031517	3/15/2017	µg/L	**125**		**15.3**		**185**		**67.9**		**35.5**		5	U	NA	
	SW12-032117	3/21/2017	µg/L	**134**		**12.1**		**45.0**		**60.8**		**33.6**		5	U	NA	
	SW12-033017	3/30/2017	µg/L	**48.5**		**5.69**		**86.3**		**27.7**		**15.8**		5	U	NA	
	SW12-040517	4/5/2017	µg/L	**67.1**		**9.24**		**127.0**		**43.6**		**23.7**		5	U	NA	
	SW12-050417	5/4/2017	µg/L	**52.8**		**7.96**		**91.7**		**42**		**23.2**		5	U	NA	
	SW12-061317	6/13/2017	µg/L	**102**		**16.6**		**166**		**85.1**		**46.2**		5	U	NA	
	SW12-071817	7/18/2017	µg/L	**65**		**5.8**		**116**		**43.3**		**24.8**		5	U	NA	
	SW12-080217	8/2/2017	µg/L	**125**		**14.7**		**204**		**102**		**67**		5	U	NA	
	SW12-090517	9/5/2017	µg/L	**46.7**		**4.72**		**72**		**39**		**26.2**		5	U	NA	
	SW12-120517	12/5/2017	µg/L	**16.6**		**2.91**		**12.6**		**20.1**		**13.3**		5	U	NA	
	SW12-121417	12/14/2017	µg/L	**9.19**		**2.66**		**8.26**		**18**		**12.1**		5	U	NA	
	SW12-010918	1/9/2018	µg/L	**12.3**		**2.16**		**5.65**		**14.6**		**11.1**		5	U	NA	
	SW12-020618	2/6/2018	µg/L	**2.53**		1	U	**1.20**		**4.04**		**2.44**		5	U	1	U
	SW12-030918	3/9/2018	µg/L	**3.24**		**1.79**		**12.2**		**9.75**		**4.28**		5	U	1	U
	SW12-040618	4/6/2018	µg/L	**1.88**		1	U	1	U	**5.05**		**2.82**		5	U	1	U
	SW12-050318	5/3/2018	µg/L	1	U	1	U	1	U	**4.18**		**2.72**		5	U	1	U
	SW12-060718	6/7/2018	µg/L	**1.85**		1	U	1	U	**3.24**		**1.64**		5	U	1	U
	SW12-071218	7/12/2018	µg/L	**1.79**		1	U	1	U	**3.81**		**2.15**		5	U	1	U
	SW12-091418	9/14/2018	µg/L	**1.34**		1	U	1	U	**3.20**		**2.00**		5	U	1	U
	SW12-120418	12/4/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW12-021919	2/19/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	--	3/7/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW12-051519	5/15/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW12-060419	6/4/2019	µg/L	**1.19**		1	U	1	U	2	U	1	U	5	U	1	U
	SW12-071819	7/18/2019	µg/L	**1.09**		1	U	1	U	2	U	1	U	5	U	1	U
	SW12-082219	8/22/2019	µg/L	**3.33**		1	U	1	U	2	U	1	U	5	U	1	U
	SW12-091819	9/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW12-102219	10/22/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW12-110519	11/5/2019	µg/L	**1.67**		1	U	1	U	2	U	1	U	5	U	1	U
	SW12-122019	12/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW12-010820	1/8/2020	µg/L	**1.36**		1	U	1	U	2	U	1	U	5	U	1	U
	SW12-021020	2/10/2020	µg/L	**18.9**		**1.54**		**2.68**		**20.7**		**5.13**		5	U	**2.39**	
	SW12-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-13	SW13-092916	9/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW13-103116	10/31/2016	µg/L	1	U	1	U	**2.0**		2	U	1	U	1	U	NA	
	SW13-112816	11/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW13-122916	12/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW13-012017	1/20/2017	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	SW13-022817	2/28/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW13-031517	3/15/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW13-032117	3/21/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW13-033017	3/30/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW13-040517	4/5/2017	µg/L	1	U	1	U	**1.21**		2	U	1	U	5	U	NA	
	SW13-050417	5/4/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW13-061317	6/13/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW13-071817	7/18/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW13-080217	8/2/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW13-090517	9/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW13-120517	12/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW13-121417	12/14/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW13-010918	1/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW13-020618	2/6/2018	µg/L	**1.78**		1	U	1	U	2	U	1	U	5	U	**4.26**	
	SW13-030918	3/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**2.07**	
	SW13-040618	4/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.4**	
	SW13-050318	5/3/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**3.67**	
	SW13-060718	6/7/2018	µg/L	**2.99**		1	U	**2.48**		2	U	1	U	5	U	**8.08**	
	SW13-071218	7/12/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW13-081318	8/13/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW13-091418	9/14/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW13-120418	12/4/2018	µg/L	1	U	1	U	**1.84**		2	U	1	U	5	U	**3.49**	
	SW13-021919	2/19/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW13-030719	3/7/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**11.0**	
	SW13-051519	5/15/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.30**	
	SW13-060419	6/4/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.11**	
	SW13-071819	7/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW13-082019	8/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW13-091819	9/18/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	SW13-102219	10/22/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**4.83**	
	SW13-110519	11/5/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**2.11**	
	SW13-122019	12/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.09**	
	SW13-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.79**	
	SW13-021020	2/10/2020	µg/L	**4.44**		1	U	1	U	2	U	1	U	5	U	**1.50**	
	SW13-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**3.73**	

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
SW-14	SW14-071817	7/18/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW14-080217	8/2/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW14-090517	9/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW14-120517	12/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	--	12/14/2017	--	NS-DW		NS-DW		NS-DW		NS-DW		NS-DW		NS-DW		NS-DW	
	SW14-010918	1/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	SW14-020618	2/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW14-030918	3/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW14-040618	4/6/2018	µg/L	1	U	1	U	**1.43**		2	U	1	U	5	U	1	U
	SW14-050318	5/3/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW14-060718	6/7/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.18**	
	SW14-071218	7/12/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.33**	
	SW14-091418	9/14/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW14-120418	12/4/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.62**	
	SW14-021919	2/19/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.19**	
	SW14-030719	3/7/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.68**	
	SW14-051519	5/15/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	**1.50**	
	SW14-060419	6/4/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW14-071819	7/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW14-082019	8/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW14-091819	9/18/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW14-102219	10/22/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW14-110519	11/5/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW14-122019	12/20/2019	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW14-010820	1/8/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW14-021020	2/10/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	SW14-031220	3/12/2020	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
FP-01	FP01-031616	3/16/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP01-042716	4/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP01-050916	5/9/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP01-062716	6/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP01-072816	7/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP01-081916	8/19/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP01-092916	9/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP01-103116	10/31/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP01-112816	11/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP01-122916	12/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP01-012017	1/20/2017	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP01-022817	2/28/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP01-031517	3/15/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
FP-01	FP-01-032117	3/21/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP01-033017	3/30/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP01-040517	4/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP01-050417	5/4/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP01-061317	6/13/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP01-071817	7/18/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP01-080217	8/2/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP01-090517	9/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP01-120517	12/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP01-121417	12/14/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP01-010918	1/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP01-020618	2/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP01-030918	3/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP01-040618	4/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP01-050318	5/3/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP01-060718	6/7/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP01-071218	7/12/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP01-091418	9/14/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
FP-02	FP02-031616	3/16/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP02-042716	4/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP02-050916	5/9/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP02-062716	6/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP02-072816	7/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP02-081916	8/19/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP02-092916	9/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP02-103116	10/31/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP02-112816	11/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP02-122916	12/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP02-012017	1/20/2017	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP02-022817	2/28/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP02-031517	3/15/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP02-032117	3/21/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP02-033017	3/30/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP02-040517	4/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP02-050417	5/4/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP02-061317	6/13/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP02-071817	7/18/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP02-080217	8/2/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP02-090517	9/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP02-120517	12/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	

Table 4B. Analytical Results for Surface Water, Historical
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
FP-02	FP-02-121417	12/14/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP02-010918	1/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP02-020618	2/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP02-030918	3/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP02-040618	4/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP02-050318	5/3/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP02-060718	6/7/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP02-071218	7/12/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP02-091418	9/14/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
FP-03	FP03-031616	3/16/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP03-042716	4/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP03-050916	5/9/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP03-062716	6/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP03-072816	7/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	--	8/19/2016	--	NS-HS		NS-HS		NS-HS		NS-HS		NS-HS		NS-HS		NS-HS	
	FP03-092916	9/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP03-103116	10/31/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP03-112816	11/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP03-122916	12/29/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP03-012017	1/20/2017	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	NA	
	FP03-022817	2/28/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP03-031517	3/15/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP03-032117	3/21/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP03-033017	3/30/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	--	4/5/2017	--	NS-HS		NS-HS		NS-HS		NS-HS		NS-HS		NS-HS		NS-HS	
	FP03-050417	5/4/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP03-061317	6/13/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP03-071817	7/18/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP03-080217	8/2/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP03-090517	9/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP03-120517	12/5/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP03-121417	12/14/2017	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP03-010918	1/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	NA	
	FP03-020618	2/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP03-030918	3/9/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP03-040618	4/6/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP03-050318	5/3/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP03-060718	6/7/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U

Table 4B. Analytical Results for Surface Water, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Date Collected	Units	Analyte													
				Benzene		Ethylbenzene		Toluene		m&p-Xylene		o-Xylene		Naphthalene		MTBE	
FP-03	FP03-071218	7/12/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U
	FP03-091418	9/14/2018	µg/L	1	U	1	U	1	U	2	U	1	U	5	U	1	U

Notes:

[a] South Carolina Department of Health and Environmental Control (SC DHEC) R.61 -68, Water Classifications and Standards, Human Health for consumption of water and organism, June 27, 2014.

[b] Screening levels for these analytes are not specified in SC DHEC R. 61-68.

[c] The analyte was analyzed for, but was not detected above the laboratory reporting/quantitation limit. However, the laboratory reporting/quantitation limit is above the screening criteria. The actual absence or presence of this analyte between the screening criteria and the laboratory reporting/quantitation limit cannot be determined.

Samples analyzed by EPA Methods SW 8260B/8260D.

Bold indicates the analyte was detected above the method detection limit.

Gray shading indicates the analyte exceeded its screening value.

µg/L = microgram(s) per liter

FP = fishing pond

ID = identification

J = estimated

MTBE = methyl tertiary butyl ether

NA = not applicable

NS-DW = sample not collected due to location being in a different watershed

NS-HS = sample not collected due to health and safety concerns

NS-IW = sample not collected due to insufficient volume at surface water location

SW = surface water

U = analyte was not detected above the reported sample quantitation limit

Table 5A. Analytical Results for Groundwater, First Quarter 2020

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
MW-01	MW-01-031220	3/12/2020	µg/L	5	U	5	U	5	U	15	U	U	U	5	U	25	U	--	
MW-01B	MW-01B-031220	3/12/2020	µg/L	**5.76**		1	U	1	U	3	U	1	U	**1.12**		5	U	--	
MW-02	MW-02-031320	3/13/2020	µg/L	1	U	1	U	1	U	**4.60**		1	U	1	U	5	U	--	
MW-02B	MW-02B-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-03	MW-03-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-04	MW-04-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-05	MW-05-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-06	MW-06-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-06B	MW-06B-031320	3/13/2020	µg/L	1	U	1	U	**1.56**		3	U	1	U	1	U	5	U	--	
MW-07	MW-07-021320	2/13/2020	µg/L	**487**		**463**		**3,100**		**5,530**		100	U[b]	100	U[b]	500	U[b]	--	
	MW-07-031120	3/11/2020	µg/L	**62.3**		**76.0**		**464**		**1,310**		5	U	5	U	**40.9**		--	
MW-08	MW-08-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-09	MW-09-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**2.72**		5	U	--	
MW-09B	MW-09B-031320	3/13/2020	µg/L	1	U	1	U	**1.25**		3	U	1	U	1	U	5	U	--	
MW-10	MW-10-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-11	MW-11-021820	2/18/2020	µg/L	**4,790**		**2,170**		**29,200**		**12,600**		500	U[b]	500	U[b]	2,500	U[b]	--	
	MW-11-031220	3/12/2020	µg/L	**6,220**		**2,790**		**31,700**		**16,000**		250	U[b]	250	U[b]	1,250	U[b]	--	
MW-12	MW-12-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-12B	MW-12B-021120	2/11/2020	µg/L	**64.9**		**22.9**		**3.75**		**74.6**		1	U	1	U	**23.1**		--	
	MW-12B-031220	3/12/2020	µg/L	**22.6**		1	U	**1.27**		**6.05**		1	U	1	U	**8.14**		--	
MW-13	MW-13-031120	3/11/2020	µg/L	**1,000**		**4.59**		**30.5**		**23.3**		1	U	**133**		**6.17**	**J**	--	
MW-13B	MW-13B-021820	2/18/2020	µg/L	**1,320**		5	U	**52.3**		**21.1**		5	U	**115**		250	U[b]	--	
	MW-13B-031120	3/11/2020	µg/L	**4,690**		**217**		**8,870**		**1,530**		20	U[b]	20	U	100	U[b]	--	
MW-14	MW-14-031120	3/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-14B	MW-14B-031120	3/11/2020	µg/L	**12.8**		1	U	1	U	**3.38**		1	U	**11.7**		5	U	--	
MW-15	MW-15-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**4.19**		5	U	--	
MW-15B	MW-15B-021320	2/13/2020	µg/L	**4,680**		**212**		**1,830**		**2,080**		10	U[b]	**208**		**57.8**		--	
	MW-15B-031120	3/11/2020	µg/L	**4,380**		**211**		**1,620**		**2,080**		100	U[b]	**260**		500	U[b]	--	
MW-16	MW-16-031320	3/13/2020	µg/L	1	U	1	U	**1.02**		3	U	1	U	1	U	5	U	--	
MW-17	MW-17-031320	3/13/2020	µg/L	**1.23**		1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-17B	MW-17B-021220	2/12/2020	µg/L	**5,800**		**1,100**		**11,400**		**7,360**		100	U[b]	**372**		500	U[b]	--	
	MW-17B-031220	3/12/2020	µg/L	**6,600**		**1,230**		**12,800**		**8,550**		250	U[b]	**417**		1,250	U[b]	--	
MW-18	MW-18-031320	3/13/2020	µg/L	1	U	1	U	**1.15**		**14.7**		1	U	**7.16**		**6.21**	**J**	--	
MW-19	MW-19-031220	3/12/2020	µg/L	1	U	1	U	1	U	**35.1**		1	U	1	U	**68.4**		--	
MW-20	MW-20-021220	2/12/2020	µg/L	**7,420**		**1,410**		**24,200**		**8,710**		200	U[b]	200	U[b]	1000	U[b]	--	
	MW-20-031220	3/12/2020	µg/L	**6,790**		**1,360**		**20,100**		**9,680**		250	U[b]	250	U[b]	1250	U[b]	--	
MW-21	MW-21-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**2.77**		5	U	--	
MW-22	MW-22-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-23	MW-23-021220	2/12/2020	µg/L	**408**		20	U	20	U	**150**		20	U[b]	**36.3**		100	U[b]	--	
	MW-23-031120	3/11/2020	µg/L	**349**		20	U	20	U	**153**		20	U[b]	**41.0**		100	U[b]	--	

Table 5A. Analytical Results for Groundwater, First Quarter 2020

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	5.0		700		1,000		10,000		5.0		40		25		0.05	
MW-23B	MW-23B-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-24	MW-24-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-24B	MW-24B-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-25	MW-25-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-25B	MW-25B-031020	3/10/2020	µg/L	**1.12**		1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-26	MW-26-021220	2/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-26B	MW-26B-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-27	MW-27-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-27B	MW-27B-031220	3/12/2020	µg/L	1	U	**1.67**		**3.03**		**13.1**		1	U	1	U	5	U	--	
MW-28	MW-28-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-29	MW-29-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	**5.11**		--	
MW-30	MW-30-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-31	MW-31-031120	3/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-32	MW-32-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-33T	MW-33T-031120	3/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-34	MW-34-021120	2/11/2020	µg/L	**5.41**		1	U	1	U	3	U	1	U	**157**		5	U	--	
	MW-34-031020	3/10/2020	µg/L	**1.54**		1	U	1	U	**3.06**		1	U	**167**		5	U	--	
MW-35	MW-35-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-36	MW-36-021820	2/18/2020	µg/L	**300**		1	U	**200**		**240**		1	U	1	U	50	U[b]	--	
	MW-36-031320	3/13/2020	µg/L	**282**		1	U	**229**		**211**		1	U	1	U	5	U[b]	--	
MW-36B	MW-36B-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-37	MW-37-021120	2/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**2.89**		5	U	--	
	MW-37-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**2.85**		5	U	--	
MW-38	MW-38-021120	2/11/2020	µg/L	**114**		1	U	1	U	**66.3**		1	U	**123**		5	U	--	
	MW-38-031020	3/10/2020	µg/L	**411**		**1.37**		**2.68**		**172**		1	U	**144**		5	U	--	
MW-39	MW-39-021120	2/11/2020	µg/L	**2.28**		1	U	1	U	**5.04**		1	U	**123**		5	U	--	
	MW-39-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**124**		5	U	--	
MW-40	MW-40-021120	2/11/2020	µg/L	**125**		**1.10**		**38.7**		**78.1**		1	U	**19.2**		5	U	--	
	MW-40-031020	3/10/2020	µg/L	**195**		**2.92**		**53.0**		**102**		1	U	**29.9**		5	U	--	
MW-41	MW-41-021120	2/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-42	MW-42-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-43	MW-43-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-43B	MW-43B-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-44	MW-44-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-44B	MW-44B-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-45	MW-45-021220	2/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**19.5**		5	U	--	
	MW-45-031120	3/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**1.15**		5	U	--	
MW-45B	MW-45B-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	

Table 5A. Analytical Results for Groundwater, First Quarter 2020

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB			
		RBSL[a]:	µg/L	5.0		700		1,000		10,000		5.0		40		25		0.05			
MW-46	MW-46-021320	2/13/2020	µg/L	5	U	5	U	5	U	15	U	5	U	**122**		25	U	--			
	MW-46-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**161**		5	U	--			
MW-47	MW-47-031120	3/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
MW-48B	MW-48B-031120	3/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**1.23**		5	U	--			
MW-49	MW-49-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
MW-50B	MW-50B-021820	2/18/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**42.1**		5	U	--			
	MW-50B-031120	3/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**60.5**		5	U	--			
MW-51	MW-51-021120	2/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
MW-52	MW-52-021120	2/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
MW-53	MW-53-021320	2/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
MW-54	MW-54-021320	2/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
MW-55	MW-55-021820	2/18/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
MW-56	MW-56-021320	2/13/2020	µg/L	**135**		1	U	**1.61**		**51.5**		1	U	**192**		5	U	--			
	MW-56-031120	3/11/2020	µg/L	**46.6**		1	U	1	U	**19.1**		1	U	**192**		5	U	--			
MW-57	MW-57-021220	2/12/2020	µg/L	**42.8**		1	U	1	U	3	U	1	U	**64.3**		5	U	--			
	MW-57-031120	3/11/2020	µg/L	**99.4**		1	U	1	U	**9.45**		1	U	**98.4**		5	U	--			

Notes:

[a] RBSL = Risk-based screening level identified in South Carolina Underground Storage Tank Management Division Programmatic Quality Assurance Program Plan, Revision 3.1, Table D1 "RBSLs for Groundwater," February 2016.

[b] The constituent was analyzed for, but was not detected above the laboratory reporting/quantitation limit. However, the laboratory reporting/quantitation limit is above the screening criteria. The actual absence or presence of this analyte between the screening criteria and the laboratory reporting/quantitation limit cannot be determined.

Samples analyzed by EPA Methods SW 8260B and 8011.

Bold indicates the analyte was detected above the method detection limit.

Gray shading indicates the analyte exceeded RBSLs.

µg/L = microgram(s) per liter

1,2-DCA = 1,2-dichloroethane

EDB = 1,2-dibromoethane

ID = identification

J = estimated

MTBE = methyl tertiary butyl ether

MW = monitoring well

U = analyte was not detected above the reported sample quantitation limit

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte															
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
MW-01	MW-01-072715	7/27/2015	µg/L	5	U[b]	5	U	5	U	10	U	5	U[b]	5	U	5	U	0.02	U
	MW-01-012716	1/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.02	U
	--	11/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-01-062817	6/28/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01-090717	9/7/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01-120517	12/5/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01-030818	3/8/2018	µg/L	**1.85**		1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01-060518	6/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01-091118	9/11/2018	µg/L	**2.02**		1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01-120518	12/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01-030519	3/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01-091919	9/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01-121719	12/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01-031220	3/12/2020	µg/L	5	U	5	U	5	U	15	U	U	U	5	U	25	U	--	
MW-01B	MW-01B-080415	8/4/2015	µg/L	5	U[b]	5	U	5	U	10	U	5	U[b]	5	U	5	U	5	U
	MW-01B-012716	1/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.019	U
	MW-01B-120116	12/1/2016	µg/L	1	U	1	U	**1.40**		**5.60**		1	U	1	U	**1.30**		--	
	MW-01B-062817	6/28/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01B-090717	9/7/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01B-120517	12/5/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01B-030818	3/8/2018	µg/L	**3.51**		1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01B-060518	6/5/2018	µg/L	**8.96**		1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01B-091118	9/11/2018	µg/L	**11.1**		1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01B-120518	12/5/2018	µg/L	**8.30**		1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01B-030519	3/5/2019	µg/L	**3.32**		1	U	1	U	3	U	1	U	**1.02**		5	U	--	
	MW-01B-060519	6/5/2019	µg/L	**1.82**		1	U	1	U	3	U	1	U	**1.00**		5	U	--	
	MW-01B-091919	9/19/2019	µg/L	**1.53**		1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01B-121719	12/17/2019	µg/L	**3.29**		1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-01B-031220	3/12/2020	µg/L	**5.76**		1	U	1	U	3	U	1	U	**1.12**		5	U	--	
MW-02	MW-02-072715	7/27/2015	µg/L	**4,320**		625	U	**9,670**		**2,460**		5	U[b]	**171**		**74.7**		0.02	U
	MW-02-012616	1/26/2016	µg/L	**9,500**		**1,160**		**25,000**		**6,310**		50	U[b]	**285**		**139**		0.019	U
	--	11/28/2016	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	MW-02-062917	6/29/2017	µg/L	**8,040**		**833**		**27,100**		**9,890**		250	U[b]	250	U[b]	1,250	U[b]	--	
	MW-02-090817	9/8/2017	µg/L	**2,340**		**181**		**7,120**		**8,510**		50	U[b]	50	U[b]	**389**		--	
	MW-02-100417	10/4/2017	µg/L	**3,510**		**306**		**11,900**		**11,200**		50	U[b]	**53.9**		250	U[b]	--	
	MW-02-110817	11/8/2017	µg/L	**850**		100	U	**1,370**		**3,520**		100	U[b]	100	U[b]	500	U[b]	--	
	MW-02-120717	12/7/2017	µg/L	**153**		**15.1**		**313**		**441**		1	U	**70.9**		**12.8**		--	
	MW-02-010918	1/9/2018	µg/L	**307**		10	U	**878**		**1,300**		10	U[b]	**61.8**		**63.7**		--	
	MW-02-020618	2/6/2018	µg/L	**30.5**		**1.09**		**29.6**		**88.3**		1	U	**32.0**		5	U	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte															
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
MW-02	MW-02-030718	3/7/2018	µg/L	**131**		**34.1**		**594**		**442**		1	U	**27.6**		**34.5**		--	
	MW-02-040618	4/6/2018	µg/L	**72.5**		**8.96**		**94.7**		**501**		1	U	**18.4**		5	U	--	
	MW-02-050318	5/3/2018	µg/L	**35.4**		**7.50**		**14.9**		**163**		1	U	**7.95**		5	U	--	
	MW-02-060618	6/6/2018	µg/L	1	U	1	U	**3.19**		**3.70**		1	U	**1.25**		5	U	--	
	MW-02-071218	7/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02-030719	3/7/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02-060419	6/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02-091819	9/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02-031320	3/13/2020	µg/L	1	U	1	U	1	U	**4.60**		1	U	1	U	5	U	--	
MW-02B	MW-02B-080415	8/4/2015	µg/L	5	U[b]	5	U	5	U	10	U	5	U[b]	5	U	5	U	0.02	U
	--	1/19/2016	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	MW-02B-030116	3/1/2016	µg/L	1	U	1	U	**4.80**		**4.60**		1	U	1	U	1	U	0.019	U
	--	11/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-02B-033117	3/31/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02B-062917	6/29/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02B-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02B-120717	12/7/2017	µg/L	1	U	1	U	**1.11**		3	U	1	U	1	U	5	U	--	
	MW-02B-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02B-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02B-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02B-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02B-030719	3/7/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02B-060419	6/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02B-091819	9/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02B-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-02B-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-03	MW-03-072715	7/27/2015	µg/L	5	U[b]	5	U	5	U	10	U	5	U[b]	5	U	5	U	0.02	U
	MW-03-012516	1/25/2016	µg/L	**108**		**20.1**		**958**		**598**		1	U	1	U	**11.1**		0.02	U
	MW-03-120616	12/6/2016	µg/L	**61.1**		**25.1**		**229**		**330**		2	U	2	U	**3.60**		--	
	MW-03-062917	6/29/2017	µg/L	**10.9**		1	U	**24.6**		**6.98**		1	U	**2.34**		5	U	--	
	--	9/5/2017	--	NS-HS		NS-HS		NS-HS		NS-HS		NS-HS		NS-HS		NS-HS		NS-HS	
	--	10/3/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-03-110817	11/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-03-120517	12/5/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	--	1/8/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-03-020618	2/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-03-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	5.0		700		1,000		10,000		5.0		40		25		0.05	
MW-03	MW-03-040618	4/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-03-050318	5/3/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-03-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-03-071218	7/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-03-091318	9/13/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-03-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-03-030719	3/7/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-03-060419	6/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	--	9/16/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-03-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-03-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-04	MW-04-072815	7/28/2015	µg/L	5	U[b]	5	U	5	U	10	U	5	U[b]	5	U	5	U	0.019	U
	MW-04-012516	1/25/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.02	U
	MW-04-120616	12/6/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	
	MW-04-062917	6/29/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-04-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-04-120717	12/7/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-04-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-04-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-04-091318	9/13/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-04-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-04-030719	3/7/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-04-060419	6/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-04-091819	9/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-04-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-04-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-05	MW-05-072815	7/28/2015	µg/L	5	U[b]	5	U	5	U	10	U	5	U[b]	5	U	5	U	0.019	U
	MW-05-012516	1/25/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.02	U
	--	11/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-05-050317	5/3/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-062917	6/29/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-071717	7/17/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-080117	8/1/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-100417	10/4/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-110817	11/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-120717	12/7/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-010918	1/9/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-020618	2/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte															
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	5.0		700		1,000		10,000		5.0		40		25		0.05	
MW-05	MW-05-040618	4/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-050318	5/3/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-060718	6/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-071318	7/13/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-091318	9/13/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-030719	3/7/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-060419	6/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-091819	9/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-05-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-06	MW-06-072815	7/28/2015	µg/L	5	U[b]	5	U	5	U	10	U	5	U[b]	5	U	5	U	0.02	U
	MW-06-012116	1/21/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.02	U
	MW-06-120216	12/2/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	
	MW-06-062917	6/29/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-06-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-06-120717	12/7/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-06-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-06-060718	6/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-06-091318	9/13/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-06-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-06-030719	3/7/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-06-060419	6/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-06-091819	9/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-06-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-06-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-06B	MW-06B-120717	12/7/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-06B-030718	3/7/2018	µg/L	1	U	1	U	**3.63**		3	U	1	U	1	U	5	U	--	
	MW-06B-060718	6/7/2018	µg/L	1	U	1	U	**4.69**		3	U	1	U	1	U	5	U	--	
	MW-06B-091318	9/13/2018	µg/L	1	U	1	U	**1.17**		3	U	1	U	1	U	5	U	--	
	MW-06B-120618	12/6/2018	µg/L	1	U	1	U	**1.89**		3	U	1	U	1	U	5	U	--	
	MW-06B-030719	3/7/2019	µg/L	1	U	1	U	**1.42**		3	U	1	U	1	U	5	U	--	
	MW-06B-060419	6/4/2019	µg/L	1	U	1	U	**4.53**		3	U	1	U	1	U	5	U	--	
	MW-06B-091819	9/18/2019	µg/L	1	U	1	U	**3.52**		3	U	1	U	1	U	5	U	--	
	MW-06B-121819	12/18/2019	µg/L	1	U	1	U	**4.47**		3	U	1	U	1	U	5	U	--	
	MW-06B-031320	3/13/2020	µg/L	1	U	1	U	**1.56**		3	U	1	U	1	U	5	U	--	
MW-07	--	7/27/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-07-012116	1/21/2016	µg/L	**1,060**		**389**		**5,210**		**2,620**		40	U[b]	40	U[b]	40	U[b]	0.02	U
	--	11/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	MW-07-062917	6/29/2017	µg/L	**4,290**		**629**		**17,700**		**4,990**		250	U[b]	250	U[b]	1,250	U[b]	--	
MW-07	--	9/5/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	10/3/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	11/7/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/4/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	1/8/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	2/6/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-07-030818	3/8/2018	µg/L	**4,550**		**802**		**14,100**		**7,520**		50	U[b]	50	U[b]	250	U[b]	--	
	--	4/6/2018	µg/L	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	MW-07-050318	5/3/2018	µg/L	**6,330**		**662**		**16,500**		**9,060**		250	U[b]	250	U[b]	1,250	U[b]	--	
	--	6/4/2018	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	MW-07-091218	9/12/2018	µg/L	**4,620**		**639**		**13,600**		**6,180**		1	U	1	U	**82.5**		--	
	MW-07-120618	12/6/2018	µg/L	**4,850**		**574**		**13,400**		**9,890**		100	U[b]	100	U[b]	500	U[b]	--	
	MW-07-021919	2/19/2019	µg/L	**5,360**		**516**		**12,400**		**7,280**		1	U	1	U	**6.32**		--	
	MW-07-030719	3/7/2019	µg/L	**3,110**		**147**		**5,780**		**4,110**		1	U	1	U	5	U	--	
	MW-07-051519	5/15/2019	µg/L	**2,030**		**169**		**3,440**		**3,110**		1	U	1	U	**9.44**		--	
	MW-07-060419	6/4/2019	µg/L	**1,940**		**168**		**3,390**		**2,740**		1	U	1	U	**6.90**		--	
	MW-07-082019	8/20/2019	µg/L	**2,120**		**340**		**4,750**		**3,650**		50	U[b]	50	U[b]	250	U[b]	--	
	MW-07-091919	9/19/2019	µg/L	**1,580**		**148**		**2,550**		**2,160**		50	U[b]	50	U[b]	250	U[b]	--	
	--	11/4/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/16/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-07-021320	2/13/2020	µg/L	**487**		**463**		**3,100**		**5,530**		100	U[b]	100	U[b]	500	U[b]	--	
	MW-07-031120	3/11/2020	µg/L	**62.3**		**76.0**		**464**		**1,310**		5	U	5	U	**40.9**		--	
MW-08		7/28/2015	µg/L	5	U[b]	5	U	5	U	10	U	5	U[b]	5	U	5	U	0.02	U
	MW-08-012616	1/26/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.02	U
	MW-08-120616	12/6/2016	µg/L	1	U	1	U	**14.4**		**7.10**		1	U	1	U	1	U	--	
	MW-08-062917	6/29/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-08-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-08-120717	12/7/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-08-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-08-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-08-091318	9/13/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	--	12/3/2018	--	NS-PS		NS-PS		NS-PS		NS-PS		NS-PS		NS-PS		NS-PS		NS-PS	
	MW-08-030719	3/7/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-08-060419	6/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-08-091819	9/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-08-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-08-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-09	--	7/27/2015	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	1/19/2016	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	

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Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	--	11/28/2016	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
MW-09	MW-09-062917	6/29/2017	µg/L	**3,860**		**517**		**13,000**		**8,680**		200	U[b]	200	U[b]	1,000	U[b]	--	
	--	9/5/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	MW-09-120717	12/7/2017	µg/L	**54.3**		**3.44**		**19.6**		**64.8**		1	U	**27.5**		5	U	--	
	MW-09-030718	3/7/2018	µg/L	**3.30**		1	U	**11.0**		**3.92**		1	U	**8.74**		5	U	--	
	MW-09-060618	6/6/2018	µg/L	**2.25**		1	U	**6.06**		**4.75**		1	U	**3.65**		5	U	--	
	MW-09-091318	9/13/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**2.14**		5	U	--	
	MW-09-120618	12/6/2018	µg/L	**6.39**		**2.61**		**48.3**		**39.8**		1	U	**5.68**		**6.79**		--	
	MW-09-030719	3/7/2019	µg/L	**6.24**		**3.80**		**64.3**		**52.7**		1	U	**5.90**		5	U	--	
	MW-09-060419	6/4/2019	µg/L	1	U	1	U	**1.66**		3	U	1	U	**3.95**		5	U	--	
	MW-09-091819	9/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	**1.48**		5	U	--	
	MW-09-121819	12/18/2019	µg/L	1	U	1	U	**5.00**		**3.10**		1	U	**1.34**		5	U	--	
	MW-09-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**2.72**		5	U	--	
MW-09B	MW-09B-120717	12/7/2017	µg/L	**21.8**		**24.7**		**82.1**		**179**		1	U	**4.72**		**11.9**		--	
	MW-09B-030718	3/7/2018	µg/L	**4.36**		**4.50**		**18.1**		**33.3**		1	U	**1.37**		5	U	--	
	MW-09B-060618	6/6/2018	µg/L	**17.1**		**16.5**		**66.5**		**139**		1	U	**3.61**		**8.09**		--	
	MW-09B-091318	9/13/2018	µg/L	1	U	1	U	**5.90**		**4.44**		1	U	1	U	5	U	--	
	MW-09B-120618	12/6/2018	µg/L	**2.19**		**2.14**		**8.22**		**16.8**		1	U	1	U	5	U	--	
	MW-09B-030719	3/7/2019	µg/L	**13.2**		**13.7**		**51.1**		**110**		1	U	**2.46**		**6.54**		--	
	MW-09B-060419	6/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-09B-091819	9/18/2019	µg/L	**3.08**		**3.04**		**11.4**		**22.6**		1	U	1	U	5	U	--	
	MW-09B-121819	12/18/2019	µg/L	**4.11**		**4.57**		**16.8**		**34.2**		1	U	1	U	5	U	--	
	MW-09B-031320	3/13/2020	µg/L	1	U	1	U	**1.25**		3	U	1	U	1	U	5	U	--	
MW-10	MW-10-072815	7/28/2015	µg/L	5	U[b]	5	U	5	U	10	U	5	U[b]	5	U	5	U	0.019	U
	MW-10-012616	1/26/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.019	U
	MW-10-120616	12/6/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	
	MW-10-050317	5/3/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-062917	6/29/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-071717	7/17/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-080117	8/1/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-100417	10/4/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-110817	11/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-120717	12/7/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-010918	1/9/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-020618	2/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-040618	4/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-050318	5/3/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	5.0		700		1,000		10,000		5.0		40		25		0.05	
	MW-10-071318	7/13/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-10	MW-10-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-030719	3/7/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-060419	6/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-091819	9/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-10-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-11	--	7/27/2015	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	MW-11-012616	1/26/2016	µg/L	**10,600**		**948**		**24,400**		**4,700**		10	U[b]	**432**		**123**		0.019	U
	--	11/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-11-062817	6/28/2017	µg/L	**10,900**		**2,140**		**29,600**		**11,700**		100	U[b]	**147**		500	U[b]	--	
	--	9/5/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	12/4/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	3/5/2018	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	6/4/2018	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	9/10/2018	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	12/3/2018	--	NS-PS		NS-PS		NS-PS		NS-PS		NS-PS		NS-PS		NS-PS		NS-PS	
	MW-11-030619	3/6/2019	µg/L	**8,260**		**1,990**		**30,300**		**11,900**		200	U[b]	200	U[b]	1,000	U[b]	--	
	MW-11-060519	6/5/2019	µg/L	**6,940**		**1,660**		**22,500**		**9,020**		200	U[b]	200	U[b]	1,000	U[b]	--	
	MW-11-091919	9/19/2019	µg/L	**7,950**		**2,570**		**33,700**		**14,300**		500	U[b]	500	U[b]	2,500	U[b]	--	
	--	12/16/2019	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	MW-11-021820	2/18/2020	µg/L	**4,790**		**2,170**		**29,200**		**12,600**		500	U[b]	500	U[b]	2,500	U[b]	--	
	MW-11-031220	3/12/2020	µg/L	**6,220**		**2,790**		**31,700**		**16,000**		250	U[b]	250	U[b]	1,250	U[b]	--	
MW-12	MW-12-072815	7/28/2015	µg/L	**51.3**		5	U	**22.9**		**39.2**		5	U[b]	5	U	5	U	0.02	U
	--	1/19/2016	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	11/28/2016	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	3/13/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	3/20/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	3/31/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	4/6/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	MW-12-062817	6/28/2017	µg/L	**1,190**		**467**		**7,910**		**5,100**		50	U[b]	50	U[b]	250	U[b]	--	
	MW-12-090817	9/8/2017	µg/L	**648**		**436**		**3,470**		**4,440**		100	U[b]	100	U[b]	500	U[b]	--	
	MW-12-120617	12/6/2017	µg/L	**367**		**137**		**1,540**		**4,660**		10	U[b]	10	U	**54.4**		--	
	MW-12-030818	3/8/2018	µg/L	**486**		**25.2**		**1,880**		**1,980**		10	U[b]	10	U	50	U[b]	--	
	MW-12-060518	6/5/2018	µg/L	**16.3**		**2.51**		**181**		**249**		1	U	1	U	5	U	--	
	MW-12-091118	9/11/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-12-120518	12/5/2018	µg/L	**5.81**		**2.75**		**9.08**		**72.0**		1	U	1	U	5	U	--	
	MW-12-030619	3/6/2019	µg/L	1	U	1	U	**3.94**		**4.86**		1	U	1	U	5	U	--	
	MW-12-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte															
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	MW-12-091919	9/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-12	MW-12-121719	12/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-12-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-12B	MW-12B-012616	1/26/2016	µg/L	**228**		**31.4**		**193**		**532**		1	U	**5.40**		**14.6**		0.019	U
	MW-12B-113016	11/30/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	
	MW-12B-031417	3/14/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-12B-032017	3/20/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-12B-033117	3/31/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-12B-040617	4/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-12B-062817	6/28/2017	µg/L	**30.1**		1	U	**7.28**		**14.3**		1	U	**11.8**		5	U	--	
	MW-12B-090817	9/8/2017	µg/L	**126**		**3.81**		**16.8**		**256**		1	U	1	U	**12.0**		--	
	MW-12B-120617	12/6/2017	µg/L	**1.01**		1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-12B-030818	3/8/2018	µg/L	**3.06**		1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-12B-060518	6/5/2018	µg/L	**275**		**58.7**		**20.9**		**171**		1	U	1	U	**22.5**		--	
	MW-12B-091118	9/11/2018	µg/L	**246**		**39.8**		**2.87**		**68.0**		1	U	1	U	**18.7**		--	
	MW-12B-120518	12/5/2018	µg/L	**240**		**57.7**		**29.5**		**160**		1	U	1	U	**17.7**		--	
	MW-12B-030619	3/6/2019	µg/L	**309**		**70.4**		**19.6**		**201**		1	U	1	U	**36.7**		--	
	MW-12B-060519	6/5/2019	µg/L	**88.4**		**38.0**		5	U	**15.2**		5	U	5	U	25	U	--	
	MW-12B-082219	8/22/2019	µg/L	**27.0**		**3.54**		1	U	3	U	1	U	1	U	**5.94**		--	
	MW-12B-091919	9/19/2019	µg/L	**23.1**		**2.33**		1	U	3	U	1	U	1	U	5	U	--	
	MW-12B-110619	11/6/2019	µg/L	**2.73**		1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-12B-122019	12/20/2019	µg/L	**1.09**		1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-12B-021120	2/11/2020	µg/L	**64.9**		**22.9**		**3.75**		**74.6**		1	U	1	U	**23.1**		--	
	MW-12B-031220	3/12/2020	µg/L	**22.6**		1	U	**1.27**		**6.05**		1	U	1	U	**8.14**		--	
MW-13	--	7/27/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-13-012816	1/28/2016	µg/L	**2.00**		1	U	**12.5**		**6.90**		1	U	1	U	1	U	0.02	U
	--	11/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-13-062917	6/29/2017	µg/L	**1.18**		1	U	**3.39**		3	U	1	U	1	U	5	U	--	
	--	9/5/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/4/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-13-030618	3/6/2018	µg/L	**6.98**		**1.14**		**15.3**		**4.55**		1	U	1	U	5	U	--	
	MW-13-060618	6/6/2018	µg/L	**44.2**		**4.25**		**86.2**		**19.9**		1	U	1	U	5	U	--	
	--	9/10/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-13-120718	12/7/2018	µg/L	**83.4**		**9.62**		**158**		**23.6**		1	U	1	U	5	U	--	
	MW-13-030619	3/6/2019	µg/L	**326**		**10.9**		**132**		**120**		1	U	1	U	5	U	--	
	MW-13-060519	6/5/2019	µg/L	**35.2**		5	U	5	U	**19.6**		5	U	5	U	25	U	--	
	--	9/16/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/16/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-13-031120	3/11/2020	µg/L	**1000**		**4.59**		**30.5**		**23.3**		1	U	**133**		**6.17**	**J**	--	
MW-13B	MW-13B-012816	1/28/2016	µg/L	**367**		1	U	**5.60**		**59.5**		1	U	**119**		1	U	0.02	U

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Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	5.0		700		1,000		10,000		5.0		40		25		0.05	
	MW-13B-113016	11/30/2016	µg/L	550		5.10		21.2		140		5	U[b]	158		7.90		--	
	MW-13B-062817	6/28/2017	µg/L	308		3.09		10.3		103		1	U	121		5.13		--	
	MW-13B-090817	9/8/2017	--	NS-SL		NS-SL		NS-SL		NS-SL		NS-SL		NS-SL		NS-SL		NS-SL	
	MW-13B-110817	11/8/2017	µg/L	325		3.42		19.0		91.6		1	U	173		5.55		--	
	MW-13B-120617	12/6/2017	µg/L	269		3.97		24.4		100		1	U	140		8.83		--	
	MW-13B-030718	3/7/2018	µg/L	252		3.13		12.1		60.2		1	U	175		6.44		--	
	MW-13B-060618	6/6/2018	µg/L	498		47.7		469		282		1	U	148		8.47		--	
	MW-13B-091218	9/12/2018	µg/L	402		42.5		503		271		1	U	141		5	U	--	
	MW-13B-120618	12/6/2018	µg/L	614		93.5		823		516		1	U	139		10.8		--	
	MW-13B-030619	3/6/2019	µg/L	445		53.1		679		383		1	U	143		8.60		--	
	MW-13B-060519	6/5/2019	µg/L	195		25.3		302		194		5	U	140		25	U	--	
	MW-13B-091819	9/18/2019	µg/L	408		71.2		325		446		1	U	142		14.0		--	
	MW-13B-121819	12/18/2019	µg/L	257		18.0		166		155		1	U	132		5.60		--	
	MW-13B-021820	2/18/2020	µg/L	1320		5	U	52.3		21.1		5	U	115		250	U[b]	--	
	MW-13B-031120	3/11/2020	µg/L	4690		217		8870		1530		20	U[b]	20	U	100	U[b]	--	
MW-14	MW-14-072815	7/28/2015	µg/L	5	U[b]	5	U	5	U	10	U	5	U[b]	5	U	5	U	0.02	U
	MW-14-012816	1/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.019	U
	MW-14-113016	11/30/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	
	MW-14-062817	6/28/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-14-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-14-120617	12/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-14-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-14-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-14-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-14-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-14-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-14-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-14-091819	9/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	2.02		5	U	--	
	MW-14-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	6.65		5	U	--	
	MW-14-031120	3/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-14B	MW-14B-052516	5/25/2016	µg/L	5.00		1	U	1	U	4.40		1	U	17.2		1	U	0.02	U
	MW-14B-113016	11/30/2016	µg/L	10.5		1	U	1.10		5.50		1	U	19.7		1	U	--	
	MW-14B-062817	6/28/2017	µg/L	38.1		1.34		2.56		19.1		1	U	36.2		5	U	--	
	MW-14B-090817	9/8/2017	µg/L	6.81		1	U	1	U	6.67		1	U	18.7		5	U	--	
	MW-14B-120617	12/6/2017	µg/L	8.82		1	U	1	U	6.91		1	U	24.4		5	U	--	
	MW-14B-030718	3/7/2018	µg/L	3.57		1	U	1	U	5.60		1	U	9.28		5	U	--	
	MW-14B-060418	6/6/2018	µg/L	8.63		1	U	1	U	5.77		1	U	22.1		5	U	--	
	MW-14B-091218	9/12/2018	µg/L	3.32		1	U	1	U	3.61		1	U	7.86		5	U	--	
	MW-14B-120618	12/6/2018	µg/L	3.56		1	U	1.40		6.34		1	U	6.56		5	U	--	
MW-14B	MW-14B-030619	3/6/2019	µg/L	2.70		1	U	1	U	3	U	1	U	8.83		5	U	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte															
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	MW-14B-060519	6/5/2019	µg/L	**9.13**		1	U	**1.01**		**6.57**		1	U	**17.7**		5	U	--	
	MW-14B-091819	9/18/2019	µg/L	**1.74**		1	U	1	U	**4.57**		1	U	**11.1**		5	U	--	
	MW-14B-121819	12/18/2019	µg/L	**5.69**		1	U	1	U	**4.86**		1	U	**10.7**		5	U	--	
	MW-14B-031120	3/11/2020	µg/L	**12.8**		1	U	1	U	**3.38**		1	U	**11.7**		5	U	--	
MW-15	MW-15-080415	8/4/2015	µg/L	5	U[b]	5	U	5	U	10	U	5	U[b]	5	U	5	U	0.019	U
	MW-15-012816	1/28/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.02	U
	MW-15-120716	12/7/2016	µg/L	**3,680**		**139**		**422**		**2,280**		25	U[b]	**188**		**43.8**		--	
	MW-15-031417	3/14/2017	µg/L	**1,960**		**72.1**		**324**		**1,320**		25	U[b]	**161**		125	U[b]	--	
	MW-15-032017	3/20/2017	µg/L	**3,390**		**103**		**505**		**2,460**		50	U[b]	**194**		250	U[b]	--	
	MW-15-033117	3/31/2017	µg/L	**2,850**		**65.4**		**444**		**1,860**		20	U[b]	**221**		100	U[b]	--	
	MW-15-040617	4/6/2017	µg/L	**1,790**		**60.6**		**465**		**886**		25	U[b]	**181**		125	U[b]	--	
	MW-15-062817	6/28/2017	µg/L	**72.7**		25	U	**28.8**		**110**		25	U[b]	**91.8**		125	U[b]	--	
	MW-15-090817	9/8/2017	µg/L	**454**		**24.0**		**567**		**338**		5	U[b]	**193**		25	U[b]	--	
	MW-15-120617	12/6/2017	µg/L	1	U	1	U	**1.60**		**4.64**		1	U	**140**		5	U	--	
	MW-15-030818	3/8/2018	µg/L	**53.1**		**2.75**		**89.9**		**53.1**		1	U	**85.0**		5	U	--	
	MW-15-060618	6/6/2018	µg/L	**52.2**		**4.11**		**81.4**		**46.5**		1	U	**63.8**		5	U	--	
	MW-15-091218	9/12/2018	µg/L	**14.6**		1	U	**27.9**		**16.0**		1	U	**72.2**		5	U	--	
	MW-15-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**15.9**		5	U	--	
	MW-15-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	**2.57**		5	U	--	
	MW-15-060519	6/5/2019	µg/L	**1.03**		1	U	1	U	3	U	1	U	**4.33**		5	U	--	
	MW-15-091919	9/19/2019	µg/L	**1.25**		1	U	1	U	3	U	1	U	**4.73**		5	U	--	
	MW-15-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	**3.33**		5	U	--	
	MW-15-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**4.19**		5	U	--	
MW-15B	MW-15B-080415	8/4/2015	µg/L	5	U[b]	5	U	5	U	10	U	5	U[b]	5	U	5	U	0.019	U
	MW-15B-012816	1/28/2016	µg/L	**4.80**		1	U	**2.00**		**3.90**		1	U	1	U	1	U	0.02	U
	MW-15B-113016	11/30/2016	µg/L	**337**		**34.0**		**565**		**194**		5	U[b]	**26.7**		**5**		--	
	MW-15B-031417	3/14/2017	µg/L	**2,160**		**248**		**4,580**		**1,500**		100	U[b]	**118**		500	U[b]	--	
	MW-15B-032017	3/20/2017	µg/L	**615**		**88.6**		**1,270**		**555**		25	U[b]	**67.5**		125	U[b]	--	
	MW-15B-033117	3/31/2017	µg/L	**1,630**		**205**		**3,240**		**1,180**		50	U[b]	**115**		250	U[b]	--	
	MW-15B-040617	4/6/2017	µg/L	**1,020**		**132**		**2,020**		**789**		25	U[b]	**84.7**		125	U[b]	--	
	MW-15B-062817	6/28/2017	µg/L	**1,510**		**145**		**3,520**		**1,280**		100	U[b]	100	U[b]	500	U[b]	--	
	MW-15B-090817	9/8/2017	µg/L	**1,820**		**164**		**3,560**		**1,210**		50	U[b]	**133**		250	U[b]	--	
	MW-15B-120617	12/6/2017	µg/L	**1,760**		**239**		**3,630**		**1,380**		1	U	**135**		**37.6**		--	
	MW-15B-030818	3/8/2018	µg/L	**1,290**		**151**		**3,140**		**1,070**		25	U[b]	**93.2**		125	U[b]	--	
	MW-15B-060618	6/6/2018	µg/L	**968**		**82.8**		**1,990**		**791**		1	U	**109**		**12.8**		--	
	MW-15B-091218	9/12/2018	µg/L	**947**		**122**		**2,270**		**820**		1	U	**111**		**15.9**		--	
	MW-15B-120618	12/6/2018	µg/L	**725**		**96.4**		**1,890**		**777**		1	U	**71.8**		**11.7**		--	
	MW-15B-021919	2/19/2019	µg/L	**686**		**71.2**		**1,420**		**621**		1	U	**92.3**		**12.6**		--	
	MW-15B-030619	3/6/2019	µg/L	**729**		**78.3**		**1,580**		**649**		1	U	**91.2**		**15.4**		--	
MW-15B	MW-15B-051519	5/15/2019	µg/L	**721**		**118**		**1,180**		**526**		1	U	**96.6**		**19.5**		--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	MW-15B-060519	6/5/2019	µg/L	**590**		**48.4**		**1,090**		**492**		10	U[b]	**98.0**		50	U[b]	--	
	MW-15B-082219	8/22/2019	µg/L	**2,340**		200	U	**3,060**		**1,440**		1	U	**139**		**33.5**		--	
	MW-15B-091919	9/19/2019	µg/L	**3,870**		**260**		**3,920**		**2,720**		100	U[b]	**188**		500	U[b]	--	
	MW-15B-110619	11/6/2019	µg/L	**135**		**9.77**		**105**		**101**		1	U	**8.82**		5	U	--	
	MW-15B-122019	12/20/2019	µg/L	**4,200**		**238**		**2,690**		**2,260**		10	U[b]	**212**		50	U[b]	--	
	MW-15B-021320	2/13/2020	µg/L	**4,680**		**212**		**1,830**		**2,080**		10	U[b]	**208**		**57.8**		--	
	MW-15B-031120	3/11/2020	µg/L	**4,380**		**211**		**1,620**		**2,080**		100	U[b]	**260**		500	U[b]	--	
MW-16	--	7/27/2015	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	1/19/2016	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	11/28/2016	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	MW-16-062917	6/29/2017	µg/L	**12,900**		**1,770**		**36,400**		**12,500**		500	U[b]	**1,740**		2,500	U[b]	--	
	--	9/5/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	12/7/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	MW-16-030718	3/7/2018	µg/L	**130**		**295**		**1,370**		**2,470**		10	U[b]	**132**		**618**		--	
	--	6/4/2018	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	MW-16-091318	9/13/2018	µg/L	**150**		**200**		**2,100**		**2,730**		1	U	**21.5**		**635**		--	
	MW-16-120618	12/6/2018	µg/L	**10.3**		**38.7**		**132**		**398**		5	U	5	U	**460**		--	
	MW-16-030719	3/7/2019	µg/L	**9.06**		**15.7**		**74.1**		**186**		1	U	**1.02**		**398**		--	
	MW-16-060419	6/4/2019	µg/L	**9.56**		**15.4**		**78.9**		**162**		**1.06**		1	U	**192**		--	
	MW-16-091819	9/18/2019	µg/L	**8.36**		**5.80**		**73.9**		**118**		1	U	1	U	**132**		--	
	MW-16-121819	12/18/2019	µg/L	1	U	**1.88**		**14.3**		**58.6**		1	U	1	U	**15.9**		--	
	MW-16-031320	3/13/2020	µg/L	1	U	1	U	**1.02**		3	U	1	U	1	U	5	U	--	
MW-17	--	7/27/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	1/19/2016	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	11/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/13/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/20/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/31/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	4/6/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	6/26/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	9/5/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/4/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/5/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	6/4/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	9/10/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/3/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-17-030519	3/5/2019	µg/L	**173**		**19.9**		**118**		**474**		1	U	**27.9**		5	U	--	
	MW-17-060519	6/5/2019	µg/L	**44.9**		5	U	**10.7**		**87.1**		5	U	**16.1**		25	U	--	
	--	9/16/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
MW-17	--	12/16/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte															
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	MW-17-031320	3/13/2020	µg/L	**1.23**		1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-17B	MW-17B-030116	3/1/2016	µg/L	**6,480**		**488**		**11,900**		**2,870**		**5**		**742**		**104**		0.019	U
	MW-17B-120116	12/1/2016	µg/L	**9,370**		**761**		**16,900**		**4,500**		100	U[b]	**954**		**112**		--	
	MW-17B-031317	3/13/2017	µg/L	**7,350**		**770**		**14,100**		**4,510**		200	U[b]	**944**		1,000	U[b]	--	
	MW-17B-032017	3/20/2017	µg/L	**10,700**		**1,360**		**21,400**		**7,910**		**323**		**1,210**		1,000	U[b]	--	
	MW-17B-033117	3/31/2017	µg/L	**9,190**		**900**		**17,500**		**5,910**		100	U[b]	**1,200**		500	U[b]		
	MW-17B-040617	4/6/2017	µg/L	**7,780**		**833**		**14,900**		**5,330**		200	U[b]	**991**		1,000	U[b]	--	
	MW-17B-062817	6/28/2017	µg/L	**11,200**		**704**		**21,600**		**5,650**		200	U[b]	**1,150**		1,000	U[b]	--	
	MW-17B-090817	9/8/2017	µg/L	**11,400**		**1,240**		**23,900**		**8,460**		20	U[b]	**1,330**		**201**		--	
	MW-17B-120717	12/7/2017	µg/L	**10,600**		**1,060**		**14,900**		**9,210**		10	U[b]	**1,140**		**178**		--	
	MW-17B-030718	3/7/2018	µg/L	**8,830**		**1,110**		**20,200**		**8,220**		50	U[b]	**960**		250	U[b]	--	
	MW-17B-060718	6/7/2018	µg/L	**8,910**		**1,250**		**20,200**		**9,130**		20	U[b]	**1,230**		**206**		--	
	MW-17B-080218	8/2/2018	µg/L	**9,470**		**1,190**		**23,200**		**8,530**		200	U[b]	**863**		1,000	U[b]	--	
	MW-17B-091118	9/11/2018	µg/L	**8,180**		**1,370**		**20,200**		**9,660**		50	U[b]	**832**		250	U[b]	--	
	MW-17B-110218	11/2/2018	µg/L	**7,770**		**1,080**		**12,700**		**7,380**		20	U[b]	**841**		**113**		--	
	MW-17B-120518	12/5/2018	µg/L	**6,860**		**1,010**		**24,400**		**8,550**		50	U[b]	**690**		250	U[b]	--	
	MW-17B-021919	2/19/2019	µg/L	**7,810**		**1,140**		**20,200**		**8,330**		1	U	**410**		**181**		--	
	MW-17B-030519	3/5/2019	µg/L	**8,360**		**1,370**		**22,400**		**9,180**		50	U[b]	**308**		**261**		--	
	MW-17B-051419	5/14/2019	µg/L	**7,320**		**1,040**		**18,500**		**8,370**		25	U[b]	**256**		**201**		--	
	MW-17B-060519	6/5/2019	µg/L	**7,390**		**1,220**		**16,600**		**8,370**		200	U[b]	**312**		1,000	U[b]	--	
	MW-17B-082219	8/22/2019	µg/L	**7,700**		**1,570**		**17,600**		**9,110**		5	U	**335**		**201**		--	
	MW-17B-091919	9/19/2019	µg/L	**7,700**		**833**		**12,000**		**8,740**		10	U[b]	**665**		**195**		--	
	MW-17B-110719	11/7/2019	µg/L	**7,080**		**1,080**		**8,130**		**6,130**		500	U[b]	500	U[b]	2,500	U[b]	--	
	MW-17B-121919	12/19/2019	µg/L	**6,960**		**981**		**7,590**		**5,170**		5	U	**582**		**184**		--	
	MW-17B-021220	2/12/2020	µg/L	**5,800**		**1,100**		**11,400**		**7,360**		100	U[b]	**372**		500	U[b]	--	
	MW-17B-031220	3/12/2020	µg/L	**6,600**		**1,230**		**12,800**		**8,550**		250	U[b]	**417**		1,250	U[b]	--	
MW-18	--	7/27/2015	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	1/19/2016	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	11/28/2016	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	6/26/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	9/5/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	12/4/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	3/5/2018	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	6/4/2018	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	9/11/2018	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	12/3/2018	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	MW-18-030719	3/7/2019	µg/L	**2.47**		**8.16**		**60.4**		**141**		1	U	**13.5**		**72.7**		--	
	MW-18-060419	6/4/2019	µg/L	**1.46**		**2.92**		**20.9**		**42.0**		**2.36**		**13.6**		**87.5**		--	
	MW-18-091819	9/18/2019	µg/L	1	U	**1.30**		**10.7**		**37.4**		1	U	**15.4**		**48.7**		--	
MW-18	MW-18-121819	12/18/2019	µg/L	1	U	**1.61**		**6.60**		**17.8**		**1.42**		**3.93**		**9.59**		--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	MW-18-031320	3/13/2020	µg/L	1	U	1	U	**1.15**		**14.7**		1	U	**7.16**		**6.21**	**J**	--	
MW-19	--	7/27/2015	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	MW-19-012116	1/21/2016	µg/L	**22.8**		**18.5**		**256**		**437**		1	U	1	U	**10.7**		0.02	U
	--	11/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/13/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/20/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
		3/31/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-19-040617	4/6/2017	µg/L	**9,810**		**1,030**		**25,000**		**10,300**		250	U[b]	250	U[b]	1,250	U[b]	--	
	MW-19-062917	6/29/2017	µg/L	**9,410**		**683**		**27,200**		**9,580**		200	U[b]	**320**		1,000	U[b]	--	
	--	9/5/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/4/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/5/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-19-060618	6/6/2018	µg/L	**8.15**		**149**		**385**		**1,260**		**1.53**		1	U	250	U[b]	--	
	MW-19-071318	7/13/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-19-091318	9/13/2018	µg/L	**3.31**		**3.53**		**16.0**		**96.5**		1	U	1	U	**6.55**		--	
	MW-19-120518	12/5/2018	µg/L	5	U	**8.23**		**13.7**		**217**		5	U	5	U	25	U	--	
	MW-19-030519	3/5/2019	µg/L	5	U	**33.1**		**19.4**		**756**		5	U	5	U	**294**		--	
	MW-19-060519	6/5/2019	µg/L	5	U	5	U	5	U	**30.4**		5	U	5	U	25	U	--	
	--	9/16/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-19-121719	12/17/2019	µg/L	1	U	**1.23**		**6.08**		**56.1**		1	U	1	U	**13.1**		--	
	MW-19-031220	3/12/2020	µg/L	1	U	1	U	1	U	**35.1**		1	U	1	U	**68.4**		--	
MW-20	--	7/27/2015	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	1/19/2016	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	11/28/2016	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	3/13/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	3/20/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	3/31/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	4/6/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	5/4/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	6/26/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	7/17/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	8/1/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	9/5/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	10/4/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	11/8/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	12/4/2017	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	1/8/2018	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	2/6/2018	µg/L	NS-OL		NS-OL		NS-OL		NS-OL		NS-OL		NS-OL		NS-OL		NS-OL	
	--	3/6/2018	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
MW-20	--	4/6/2018	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	--	5/3/2018	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	6/4/2018	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	MW-20-071218	7/12/2018	µg/L	**5,740**		**1,350**		**18,100**		**14,500**		100	U[b]	**351**		500	U[b]	--	
	--	9/10/2018	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	12/3/2018	--	NS-PS		NS-PS		NS-PS		NS-PS		NS-PS		NS-PS		NS-PS		NS-PS	
	MW-20-021919	2/19/2019	µg/L	**6,650**		**1,080**		**13,900**		**11,700**		5	U	**128**		**341**		--	
	MW-20-030519	3/5/2019	µg/L	**9,480**		**1,320**		**19,200**		**10,800**		100	U[b]	**187**		500	U[b]	--	
	MW-20-051519	5/15/2019	µg/L	**4,180**		**758**		**8,970**		**7,620**		100	U[b]	**105**		**636**		--	
	MW-20-060519	6/5/2019	µg/L	**11,200**		**1,460**		**22,800**		**10,200**		50	U[b]	**174**		**437**		--	
	MW-20-082019	8/20/2019	µg/L	**7,920**		**1,160**		**15,900**		**10,300**		100	U[b]	**238**		500	U[b]	--	
	--	9/16/2019	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	--	11/4/2019	--	NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP		NS-FP	
	MW-20-121719	12/17/2019	µg/L	**9,710**		**1,600**		**28,500**		**10,000**		100	U[b]	100	U[b]	500	U[b]	--	
	MW-20-021220	2/12/2020	µg/L	**7,420**		**1,410**		**24,200**		**8,710**		200	U[b]	200	U[b]	1000	U[b]	--	
	MW-20-031220	3/12/2020	µg/L	**6,790**		**1,360**		**20,100**		**9,680**		250	U[b]	250	U[b]	1250	U[b]	--	
MW-21	MW-21-072715	7/27/2015	µg/L	5	U[b]	5	U	5	U	10	U	5	U[b]	5	U	5	U	0.02	U
	MW-21-012116	1/21/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.02	U
	MW-21-112916	11/29/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	
	MW-21-031417	3/14/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-21-032117	3/21/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-21-033117	3/31/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-21-040617	4/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-21-062817	6/28/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-21-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-21-120717	12/7/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-21-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-21-060718	6/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-21-091118	9/11/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-21-120518	12/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-21-030519	3/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-21-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-21-091919	9/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-21-121719	12/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-21-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**2.77**		5	U	--	
MW-22	--	7/27/2015	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-22-012116	1/21/2016	µg/L	**19.8**		**3.40**		**47.2**		**37.4**		1	U	1	U	1	U	0.02	U
	--	11/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	5/3/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-22-062917	6/29/2017	µg/L	**234**		10	U	**125**		30	U	10	U[b]	10	U	50	U[b]	--	
MW-22	--	7/17/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	

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Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	--	8/1/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	9/5/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	10/4/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	11/8/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/4/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	1/8/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	2/6/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-22-030618	3/6/2018	µg/L	1	U	1	U	**1.03**		3	U	1	U	1	U	5	U	--	
	MW-22-040618	4/6/2018	µg/L	1	U	1	U	**1.76**		**46.6**		1	U	1	U	5	U	--	
	MW-22-050318	5/3/2018	µg/L	**1.43**		**1.79**		**33.1**		**426**		1	U	1	U	1	U	--	
	MW-22-060518	6/5/2018	µg/L	1	U	1	U	**4.27**		**41.6**		1	U	1	U	5	U	--	
	MW-22-071218	7/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-22-091318	9/13/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-22-120518	12/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-22-030519	3/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-22-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	--	9/16/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-22-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-22-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-23	MW-23-072715	7/27/2015	µg/L	5	U[b]	5	U	**7.50**		10	U	5	U[b]	5	U	5	U	0.02	U
	MW-23-012016	1/20/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.019	U
	MW-23-120216	12/2/2016	µg/L	**450**		5	U	**14.6**		**336**		5	U[b]	**46.4**		**5.90**		--	
	MW-23-031317	3/13/2017	µg/L	**709**		5	U	**23.1**		**548**		5	U[b]	**127**		25	U[b]	--	
	MW-23-032017	3/20/2017	µg/L	**642**		10	U	**12.7**		**579**		10	U[b]	**108**		50	U[b]	--	
	MW-23-033117	3/31/2017	µg/L	**685**		10	U	**16.5**		**624**		10	U[b]	**130**		50	U[b]	--	
	MW-23-040617	4/6/2017	µg/L	**432**		1	U	**6.61**		**254**		1	U	**76.5**		5	U	--	
	MW-23-062817	6/28/2017	µg/L	**131**		10	U	10	U	**117**		10	U[b]	**19.1**		5	U	--	
	MW-23-071717	7/17/2017	µg/L	**1.20**		1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-23-080117	8/1/2017	µg/L	**132**		1	U	**6.18**		**252**		1	U	**48.1**		5	U	--	
	MW-23-090717	9/7/2017	µg/L	**1,110**		**9.25**		**43.1**		**999**		5	U[b]	**141**		25	U[b]	--	
	MW-23-100417	10/4/2017	µg/L	**703**		10	U	**17.5**		**515**		10	U[b]	**90.1**		50	U[b]	--	
	MW-23-110817	11/8/2017	µg/L	**788**		10	U	**21.5**		**580**		10	U[b]	**118**		50	U[b]	--	
	MW-23-120617	12/6/2017	µg/L	**693**		10	U	**17.0**		**408**		10	U[b]	**99.5**		50	U[b]	--	
	MW-23-010918	1/9/2018	µg/L	**127**		10	U	10	U	**137**		10	U[b]	**69.6**		50	U[b]	--	
	MW-23-020618	2/6/2018	µg/L	**1.10**		1	U	1	U	3	U	1	U	**33.8**		5	U	--	
	MW-23-030618	3/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**17.5**		5	U	--	
	MW-23-040618	4/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**32.0**		5	U	--	
	MW-23-050318	5/3/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**19.1**		5	U	--	
	MW-23-060518	6/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**5.28**		5	U	--	
MW-23	MW-23-071218	7/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**7.05**		5	U	--	

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Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte															
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	MW-23-080218	8/2/2018	µg/L	**17.9**		1	U	1	U	**10.4**		1	U	**5.01**		5	U	--	
	MW-23-091118	9/11/2018	µg/L	**2.30**		1	U	1	U	3	U	1	U	**11.0**		5	U	--	
	MW-23-110218	11/2/2018	µg/L	**11.1**		1	U	**2.48**		**4.85**		1	U	**8.35**		5	U	--	
	MW-23-120518	12/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**2.08**		5	U	--	
	MW-23-022019	2/20/2019	µg/L	**5.34**		1	U	**2.16**		3	U	1	U	**7.24**		5	U	--	
	MW-23-030519	3/5/2019	µg/L	**87.7**		**1.16**		**1.35**		**46.2**		1	U	**16.5**		5	U	--	
	MW-23-051419	5/14/2019	µg/L	**412**		**5.37**		**20.7**		**190**		1	U	**28.0**		**10.9**		--	
	MW-23-060519	6/5/2019	µg/L	**520**		5	U	**5.77**		**211**		5	U	**27.7**		25	U	--	
	MW-23-082119	8/21/2019	µg/L	**1,860**		**82.8**		**507**		**1,190**		10	U[b]	**88.7**		50	U[b]	--	
	MW-23-091919	9/19/2019	µg/L	**2,950**		**192**		**1,060**		**2,210**		5	U	**99.9**		**38.4**		--	
	MW-23-110719	11/7/2019	µg/L	**1,200**		20	U	**94.1**		**481**		20	U[b]	**41.7**		100	U[b]	--	
	MW-23-122019	12/20/2019	µg/L	**575**		**10.1**		**12.0**		**279**		1	U	**41.8**		**11.0**		--	
	MW-23-021220	2/12/2020	µg/L	**408**		20	U	20	U	**150**		20	U[b]	**36.3**		100	U[b]	--	
	MW-23-031120	3/11/2020	µg/L	**349**		20	U	20	U	**153**		20	U[b]	**41.0**		100	U[b]	--	
MW-23B	MW-23B-080515	8/5/2015	µg/L	5	U[b]	5	U	**7.00**		10	U	5	U[b]	5	U	5	U	0.02	U
	MW-23B-012016	1/20/2016	µg/L	1	U	1	U	**3.90**		**7.10**		1	U	1	U	1	U	0.02	U
	MW-23B-120216	12/2/2016	µg/L	1	U	**1.40**		**3.50**		**11.0**		1	U	1	U	**1.30**		--	
	MW-23B-031317	3/13/2017	µg/L	1	U	**1.11**		**2.63**		**8.86**		1	U	1	U	5	U	--	
	MW-23B-032017	3/20/2017	µg/L	1	U	**1.55**		**2.98**		**11.7**		1	U	1	U	5	U	--	
	MW-23B-033117	3/31/2017	µg/L	1	U	**1.24**		**2.41**		**8.86**		1	U	1	U	5	U	--	
	MW-23B-040617	4/6/2017	µg/L	1	U	**1.21**		**2.41**		**9.23**		1	U	1	U	5	U	--	
	MW-23B-062817	6/28/2017	µg/L	1	U	1	U	**1.73**		**6.20**		1	U	1	U	5	U	--	
	MW-23B-090717	9/7/2017	µg/L	1	U	1	U	**1.65**		**5.40**		1	U	1	U	5	U	--	
	MW-23B-120617	12/6/2017	µg/L	1	U	**1.20**		**2.48**		**7.93**		1	U	1	U	5	U	--	
	MW-23B-030618	3/6/2018	µg/L	1	U	**1.20**		**4.57**		**9.14**		1	U	1	U	5	U	--	
	MW-23B-060518	6/5/2018	µg/L	1	U	1	U	**1.08**		**4.21**		1	U	1	U	5	U	--	
	MW-23B-091118	9/11/2018	µg/L	1	U	1	U	**1.24**		3	U	1	U	1	U	5	U	--	
	MW-23B-120518	12/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-23B-030519	3/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-23B-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-23B-091919	9/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-23B-121719	12/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-23B-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-24	MW-24-080515	8/5/2015	µg/L	5	U[b]	5	U	5	U	10	U	5	U[b]	5	U	5	U	0.02	U
	MW-24-012616	1/26/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.019	U
	MW-24-120716	12/7/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	
	MW-24-062817	6/28/2017	µg/L	**28.8**		**3.96**		**1.70**		**22.2**		1	U	1	U	5	U	--	
	MW-24-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24-120617	12/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-24	MW-24-030818	3/8/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte															
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	5.0		700		1,000		10,000		5.0		40		25		0.05	
	MW-24-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24-091719	9/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-24B	MW-24B-080515	8/5/2015	µg/L	5	U[b]	5	U	5	U	10	U	5	U[b]	5	U	5	U	0.02	U
	MW-24B-012616	1/26/2016	µg/L	1	U	1	U	**3.30**		**6.80**		1	U	1	U	1	U	0.019	U
	MW-24B-120716	12/7/2016	µg/L	1	U	1	U	**2.90**		**1.60**		1	U	1	U	1	U	--	
	MW-24B-062817	6/28/2017	µg/L	**28.9**		**3.89**		**1.77**		**20.7**		1	U	1	U	5	U	--	
	MW-24B-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24B-120617	12/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24B-030818	3/8/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24B-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24B-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24B-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24B-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24B-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24B-091719	9/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24B-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-24B-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-25	MW-25-012716	1/27/2016	µg/L	**101**		1	U	1	U	**115**		1	U	1	U	**1.80**		0.02	U
	MW-25-012716	12/1/2016	µg/L	**675**		**30.2**		**15.3**		**619**		5	U[b]	**5.90**		**29.7**		--	
	MW-25-031417	3/14/2017	µg/L	**627**		**28.6**		**10.1**		**668**		10	U[b]	10	U	50	U[b]	--	
	MW-25-032017	3/20/2017	µg/L	**604**		**20.4**		20	U	**680**		20	U[b]	20	U	100	U[b]	--	
	MW-25-033117	3/31/2017	µg/L	**673**		**30.1**		**12.0**		**736**		10	U[b]	10	U	50	U[b]	--	
	MW-25-040617	4/6/2017	µg/L	**558**		**24.3**		10	U	**682**		10	U[b]	10	U	50	U[b]	--	
	MW-25-050317	5/3/2017	µg/L	**519**		**49.3**		**10.1**		**614**		1	U	1	U	**43.2**		--	
	MW-25-062817	6/28/2017	µg/L	**431**		**34.8**		10	U	**520**		10	U[b]	10	U	50	U[b]	--	
	MW-25-071717	7/17/2017	µg/L	**230**		**13.4**		10	U	**264**		10	U[b]	10	U	50	U[b]	--	
	MW-25-080117	8/1/2017	µg/L	**234**		**14.4**		10	U	**277**		10	U[b]	10	U	50	U[b]	--	
	MW-25-090817	9/8/2017	µg/L	**200**		**12.2**		**1.27**		**214**		1	U	1	U	**10.6**		--	
	MW-25-100417	10/4/2017	µg/L	**173**		**16.2**		**1.73**		**276**		1	U	**1.10**		**6.77**		--	
	MW-25-110817	11/8/2017	µg/L	**82.9**		**7.21**		1	U	**143**		1	U	1	U	**7.74**		--	
	MW-25-120617	12/6/2017	µg/L	**23.8**		**1.84**		1	U	**60.5**		1	U	1	U	5	U	--	
	MW-25-010918	1/9/2018	µg/L	**72.0**		**2.74**		1	U	**111**		1	U	1	U	5	U	--	
	MW-25-020618	2/6/2018	µg/L	**10.8**		1	U	1	U	**19.3**		1	U	1	U	5	U	--	
MW-25	MW-25-030818	3/8/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	5.0		700		1,000		10,000		5.0		40		25		0.05	
	MW-25-040618	4/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25-050318	5/3/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25-060518	6/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25-071218	7/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25-120518	12/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25-091919	9/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-25B	MW-25B-012716	1/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.02	U
	MW-25B-120116	12/1/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	
	MW-25B-031417	3/14/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25B-032017	3/20/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25B-033117	3/31/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25B-040617	4/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25B-062817	6/28/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25B-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25B-120617	12/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25B-030818	3/8/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25B-060518	6/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25B-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25B-120518	12/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25B-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25B-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25B-091919	9/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25B-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-25B-031020	3/10/2020	µg/L	**1.12**		1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-26	MW-26-012016	1/20/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.019	U
	MW-26-120116	12/1/2016	µg/L	1	U	1	U	**2.30**		1	U	1	U	1	U	1	U	--	
	MW-26-031417	3/14/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-032017	3/20/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-033117	3/31/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-040617	4/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-050317	5/3/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-062817	6/28/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-071717	7/17/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-080117	8/1/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-26	MW-26-090717	9/7/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	

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Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	5.0		700		1,000		10,000		5.0		40		25		0.05	
	MW-26-100417	10/4/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-110817	11/8/2017	µg/L	1	U	1	U	**1.17**		3	U	1	U	1	U	5	U	--	
	MW-26-120617	12/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-010918	1/9/2018	µg/L	1	U	**1.79**		**6.20**		**13.8**		1	U	1	U	5	U	--	
	MW-26-020618	2/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-030618	3/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-040618	4/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-050318	5/3/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-060518	6/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-071218	7/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-091118	9/11/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-120518	12/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-021919	2/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-030519	3/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-051519	5/15/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-081919	8/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-091919	9/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-110419	11/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-121719	12/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-021220	2/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-26B	MW-26B-012016	1/20/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.02	U
	MW-26B-120116	12/1/2016	µg/L	1	U	1	U	1	U	**1.30**		1	U	1	U	1	U	--	
	MW-26B-031417	3/14/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26B-032017	3/20/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26B-033117	3/31/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26B-040617	4/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26B-062817	6/28/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26B-090717	9/7/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26B-120617	12/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26B-030618	3/6/2018	µg/L	1	U	1	U	**1.03**		3	U	1	U	1	U	5	U	--	
	MW-26B-060518	6/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26B-091118	9/11/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26B-120518	12/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26B-030519	3/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26B-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26B-091919	9/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-26B	MW-26B-121719	12/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-26B-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte															
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	5.0		700		1,000		10,000		5.0		40		25		0.05	
MW-27	MW-27-012716	1/27/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.019	U
	--	11/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-27-062817	6/28/2017	µg/L	**2.69**		**4.06**		**3.88**		**35.9**		1	U	1	U	5	U	--	
	MW-27-090817	9/8/2017	µg/L	**4.96**		**5.75**		**2.13**		**14.8**		1	U	1	U	5	U	--	
	MW-27-120517	12/5/2017	µg/L	**6.48**		**8.23**		**12.5**		**20.5**		1	U	1	U	5	U	--	
	MW-27-030818	3/8/2018	µg/L	**14.5**		**29.7**		**62.3**		**227**		1	U	1	U	5	U	--	
	MW-27-060518	6/5/2018	µg/L	**5.74**		**7.74**		**22.6**		**70.3**		1	U	1	U	5	U	--	
	MW-27-091118	9/11/2018	µg/L	**2.06**		**2.94**		**7.44**		**25.6**		1	U	1	U	5	U	--	
	MW-27-120518	12/5/2018	µg/L	**2.96**		**9.03**		**23.1**		**50.3**		1	U	1	U	5	U	--	
	MW-27-030519	3/5/2019	µg/L	1	U	1	U	**4.05**		**9.95**		1	U	1	U	5	U	--	
	MW-27-060519	6/5/2019	µg/L	**1.33**		1	U	**5.04**		**11.0**		1	U	1	U	5	U	--	
	MW-27-091919	9/19/2019	µg/L	**1.04**		1	U	**1.09**		**5.00**		1	U	1	U	5	U	--	
	MW-27-121819	12/18/2019	µg/L	**1.09**		1	U	1	U	**5.19**		1	U	1	U	5	U	--	
	MW-27-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-27B	MW-27B-051216	5/12/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.02	U
	MW-27B-120216	12/2/2016	µg/L	1	U	**5.30**		**9.1**		**45.7**		1	U	1	U	**8.90**		--	
	MW-27B-062817	6/28/2017	µg/L	1	U	**4.04**		**4.04**		**32.7**		1	U	1	U	**6.09**		--	
	MW-27B-090717	9/7/2017	µg/L	1	U	**3.73**		**6.35**		**30.3**		1	U	1	U	**7.54**		--	
	MW-27B-120517	12/5/2017	µg/L	1	U	**3.10**		**5.91**		**24.8**		1	U	1	U	**5.81**		--	
	MW-27B-030818	3/8/2018	µg/L	1	U	**3.44**		**6.82**		**28.8**		1	U	1	U	5	U	--	
	MW-27B-060518	6/5/2018	µg/L	1	U	**3.38**		**6.18**		**26.8**		1	U	1	U	**5.10**		--	
	MW-27B-091118	9/11/2018	µg/L	1	U	**2.98**		**5.65**		**25.0**		1	U	1	U	5	U	--	
	MW-27B-120518	12/5/2018	µg/L	1	U	**2.47**		**4.97**		**21.1**		1	U	1	U	5	U	--	
	MW-27B-030519	3/5/2019	µg/L	1	U	**2.40**		**4.76**		**20.0**		1	U	1	U	5	U	--	
	MW-27B-060519	6/5/2019	µg/L	1	U	**1.85**		**3.59**		**14.7**		1	U	1	U	5	U	--	
	MW-27B-091919	9/19/2019	µg/L	1	U	**2.05**		**3.87**		**16.2**		1	U	1	U	5	U	--	
	MW-27B-121719	12/17/2019	µg/L	1	U	**2.35**		**4.27**		**18.4**		1	U	1	U	5	U	--	
	MW-27B-031220	3/12/2020	µg/L	1	U	**1.67**		**3.03**		**13.1**		1	U	1	U	5	U	--	
MW-28	MW-28-012716	1/27/2016	µg/L	**542**		**430**		**3,850**		**3,370**		1	U	**4.80**		**96.3**		0.02	U
	--	11/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-28-031517	3/15/2017	µg/L	**1,120**		**68.9**		**3,350**		**1,370**		50	U[b]	50	U[b]	250	U	--	
	--	3/20/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/31/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	4/6/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-28-050317	5/3/2017	µg/L	**65.9**		**14.5**		**263**		**1,010**		1	U	**2.94**		**9.33**		--	
	MW-28-062817	6/28/2017	µg/L	**199**		**55.0**		**108**		**546**		1	U	1	U	**10.1**		--	
	MW-28-071717	7/17/2017	µg/L	**219**		**64.2**		**85.8**		**422**		1	U	1	U	**14.7**		--	
	MW-28-080217	8/2/2017	µg/L	**219**		**48.7**		**52.7**		**187**		1	U	**3.46**		**11.9**		--	
MW-28	MW-28-090817	9/8/2017	µg/L	**130**		**16.2**		**175**		**388**		1	U	**4.77**		**13.6**		--	
	--	10/4/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB			
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**			
	--	11/7/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW			
	--	12/7/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW			
	--	1/9/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW			
	MW-28-020618	2/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-28-030818	3/8/2018	µg/L	**10.1**		**9.92**		**5.27**		**21.2**		1	U	1	U	5	U	--			
	MW-28-040618	4/6/2018	µg/L	**16.1**		**11.6**		**4.00**		**23.4**		1	U	1	U	5	U	--			
	MW-28-050318	5/3/2018	µg/L	**8.25**		**8.82**		**1.55**		**24.5**		1	U	1	U	5	U	--			
	MW-28-060518	6/5/2018	µg/L	**3.81**		**3.77**		**1.01**		**16.0**		1	U	1	U	5	U	--			
	MW-28-071218	7/12/2018	µg/L	**3.91**		**5.19**		**1.05**		**8.82**		1	U	1	U	5	U	--			
	MW-28-091118	9/11/2018	µg/L	**28.0**		**25.2**		**3.66**		**4.89**		1	U	1	U	5	U	--			
	MW-28-120518	12/5/2018	µg/L	**13.7**		**8.04**		**1.47**		3	U	1	U	1	U	5	U	--			
	MW-28-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-28-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-28-091719	9/17/2019	µg/L	**1.68**		1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-28-121919	12/19/2019	µg/L	**23.7**		**18.3**		**2.79**		**4.33**		1	U	1	U	5	U	--			
	MW-28-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
MW-29	MW-29-012116	1/21/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.02	U		
	MW-29-112916	11/29/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--			
	MW-29-031317	3/13/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-032017	3/20/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-033117	3/31/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-040617	4/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-050317	5/3/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-062817	6/28/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-071717	7/17/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-080117	8/1/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-090717	9/7/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-100417	10/4/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-110817	11/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-120617	12/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-010918	1/9/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-020618	2/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-040618	4/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-050318	5/3/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-060518	6/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-071218	7/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-091118	9/11/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
MW-29	MW-29-120518	12/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			
	MW-29-030519	3/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--			

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Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte															
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	MW-29-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-29-091919	9/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-29-121719	12/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-29-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	**5.11**		--	
MW-30	MW-30-012516	1/25/2016	µg/L	1	U	1	U	1	U	2	U	1	U	1	U	1	U	0.02	U
	--	11/28/2016	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-30-050417	5/4/2017	µg/L	**104**		**3.98**		**341**		**161**		1	U	1	U	5	U	--	
	MW-30-062917	6/29/2017	µg/L	**646**		25	U	**1,630**		**736**		25	U[b]	25	U	125	U[b]	--	
	MW-30-071717	7/17/2017	µg/L	**922**		25	U	**2,050**		**1,320**		25	U[b]	25	U	125	U[b]	--	
	MW-30-080217	8/2/2017	µg/L	**1,240**		**25.9**		**1,020**		**2,230**		25	U[b]	25	U	125	U[b]	--	
	--	9/5/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	10/4/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	11/8/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/4/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	1/8/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-30-020518	2/5/2018	µg/L	**2.20**		1	U	**1.86**		**4.10**		1	U	1	U	5	U	--	
	MW-30-030718	3/7/2018	µg/L	**22.1**		1	U	**8.94**		**19.1**		1	U	**2.25**		5	U	--	
	MW-30-040618	4/6/2018	µg/L	**1.90**		1	U	**7.38**		**5.95**		1	U	**2.22**		5	U	--	
	MW-30-050318	5/3/2018	µg/L	**1.19**		1	U	**3.70**		3	U	1	U	**2.29**		5	U	--	
	MW-30-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**2.58**		5	U	--	
	MW-30-071218	7/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**2.79**		5	U	--	
	--	9/11/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-30-120718	12/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**1.94**		**9.22**		--	
	MW-30-030719	3/7/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-30-060419	6/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	--	9/16/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/16/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-30-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-31	MW-31-051016	5/10/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.02	U
	MW-31-112916	11/29/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	
	MW-31-050317	5/3/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-062817	6/28/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-071717	7/17/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-080117	8/1/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-100417	10/4/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-110817	11/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-120617	12/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-31	MW-31-010918	1/9/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-020618	2/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte															
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	5.0		700		1,000		10,000		5.0		40		25		0.05	
	MW-31-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-040618	4/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-050318	5/3/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-071318	7/13/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-091819	9/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-31-031120	3/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-31B	MW-31B-051116	5/11/2016	µg/L	1	U	1	U	**2.70**		1	U	1	U	1	U	1	U	0.02	U
MW-32	MW-32-051016	5/10/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.02	U
	MW-32-120616	12/6/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	
	MW-32-062917	6/29/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-32-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-32-120717	12/7/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-32-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-32-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-32-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-32-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-32-030719	3/7/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-32-060419	6/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-32-091819	9/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-32-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-32-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-33	MW-33-051016	5/10/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.02	U
MW-33T	MW-33T-051016	5/10/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.02	U
	MW-33T-120617	12/6/2017	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	
	MW-33T-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-33T-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-33T-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-33T-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-33T-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-33T-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-33T-091819	9/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-33T	MW-33T-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-33T-031120	3/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-34	MW-34-031517	3/15/2017	--	**978**		**33.0**		**143**		**218**		10	U[b]	**157**		50	U[b]	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	MW-34-032017	3/20/2017	µg/L	**801**		10.0	U	**113**		**305**		10	U[b]	**149**		50	U[b]	--	
	MW-34-033117	3/31/2017	µg/L	**728**		10.0	U	**81.4**		**224**		10	U[b]	**152**		50	U[b]	--	
	MW-34-040617	4/6/2017	µg/L	**860**		**1.70**		**58.6**		**181**		1	U	**123**		5	U	--	
	MW-34-050317	5/3/2017	µg/L	**287**		**2.62**		**27.2**		**130**		1	U	**124**		5	U	--	
	MW-34-062817	6/28/2017	µg/L	**167**		**4.59**		**9.30**		**39.2**		1	U	**68.3**		5	U	--	
	MW-34-071717	7/17/2017	µg/L	**137**		**5.83**		**19.8**		**69.5**		1	U	**73.8**		5	U	--	
	MW-34-080117	8/1/2017	µg/L	**517**		10	U	**31.7**		**110**		10	U[b]	**98.3**		50	U[b]	--	
	MW-34-090817	9/8/2017	µg/L	**1,430**		**6.01**		**98.0**		**264**		1	U	**191**		**7.33**		--	
	MW-34-100417	10/4/2017	µg/L	**919**		10	U	**36.8**		**157**		10	U[b]	**151**		50	U[b]	--	
	MW-34-110817	11/8/2017	µg/L	**338**		10	U	**15.3**		**140**		10	U[b]	**266**		50	U[b]	--	
	MW-34-120617	12/6/2017	µg/L	**169**		10	U	**29.7**		**69.9**		10	U[b]	**218**		50	U[b]	--	
	MW-34-010918	1/9/2018	µg/L	**147**		10	U	**13.1**		**79.8**		10	U[b]	**246**		50	U[b]	--	
	MW-34-020618	2/6/2018	µg/L	**249**		10	U	**19.2**		**88.3**		10	U[b]	**191**		50	U[b]	--	
	MW-34-030818	3/8/2018	µg/L	**696**		**7.35**		**51.6**		**180**		1	U	**229**		**5.84**		--	
	MW-34-040618	4/6/2018	µg/L	**619**		**2.22**		**31.9**		**150**		1	U	**281**		**7.77**		--	
	MW-34-050318	5/3/2018	µg/L	**342**		10	U	**18.1**		**99.7**		10	U[b]	**278**		50	U[b]	--	
	MW-34-060518	6/5/2018	µg/L	**63.1**		1	U	**3.28**		**19.2**		1	U	**247**		5	U	--	
	MW-34-071218	7/12/2018	µg/L	**186**		**2.41**		**9.34**		**33.7**		1	U	**153**		5	U	--	
	MW-34-080218	8/2/2018	µg/L	**414**		**5.27**		**32.6**		**53.6**		1	U	**147**		5	U	--	
	MW-34-091218	9/12/2018	µg/L	**21.8**		1	U	1	U	3	U	1	U	**209**		5	U	--	
	MW-34-110218	11/2/2018	µg/L	**75.1**		1	U	**1.53**		**8.16**		1	U	**302**		5	U	--	
	MW-34-120618	12/6/2018	µg/L	1	U	1	U	1	U	**6.63**		1	U	**271**		5	U	--	
	MW-34-022019	2/20/2019	µg/L	**124**		**1.13**		**3.82**		15	U	1	U	**303**		5	U	--	
	MW-34-030619	3/6/2019	µg/L	**42.4**		1	U	1	U	**5.32**		1	U	**242**		5	U	--	
	MW-34-051519	5/15/2019	µg/L	**162**		**2.18**		**2.63**		**14.9**		1	U	**163**		5	U	--	
	MW-34-060519	6/5/2019	µg/L	**36.6**		5	U	5	U	15	U	5	U	**148**		25	U	--	
	MW-34-082219	8/22/2019	µg/L	**102**		5	U	5	U	15	U	1	U	**207**		**5.05**		--	
	MW-34-091919	9/19/2019	µg/L	**12.9**		1	U	1	U	3	U	1	U	**109**		5	U	--	
	MW-34-110619	11/6/2019	µg/L	**85.5**		**1.44**		1	U	**13.9**		1	U	**169**		5	U	--	
	MW-34-122019	12/20/2019	µg/L	**157**		**1.73**		1	U	**21.0**		1	U	**173**		5	U	--	
	MW-34-021120	2/11/2020	µg/L	**5.41**		1	U	1	U	3	U	1	U	**157**		5	U	--	
	MW-34-031020	3/10/2020	µg/L	**1.54**		1	U	1	U	**3.06**		1	U	**167**		5	U	--	
MW-35	MW-35-051016	5/10/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.02	U
	MW-35-120116	12/1/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	
	MW-35-031417	3/14/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-032017	3/20/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-033117	3/31/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-35	MW-35-040617	4/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-050317	5/3/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-062817	6/28/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	

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Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte															
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	5.0		700		1,000		10,000		5.0		40		25		0.05	
	MW-35-071717	7/17/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-080117	8/1/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-100417	10/4/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-110817	11/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-120617	12/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-010918	1/9/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-020618	2/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-030818	3/8/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-040618	4/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-050318	5/3/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-071218	7/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-091118	9/11/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-120518	12/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-060519	6/5/2019	µg/L	1	U	1	U	**4.52**		3	U	1	U	1	U	5	U	--	
	MW-35-091719	9/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-121719	12/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-35-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-36	MW-36-051116	5/11/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.02	U
	MW-36-112916	11/29/2016	µg/L	**1.30**		1	U	**6.50**		**1.10**		1	U	1	U	1	U	--	
	MW-36-062917	6/29/2017	µg/L	**2.11**		1	U	**2.28**		3	U	1	U	1	U	5	U	--	
	MW-36-090817	9/8/2017	µg/L	**4.75**		1	U	**6.16**		**4.62**		1	U	1	U	5	U	--	
	MW-36-120717	12/7/2017	µg/L	**17.5**		1	U	**30.2**		**14.4**		1	U	1	U	5	U	--	
	MW-36-030718	3/7/2018	µg/L	**44.2**		10	U	**75.2**		**38.4**		10	U[b]	10	U	50	U[b]	--	
	MW-36-060718	6/7/2018	µg/L	**184**		1	U	**208**		**134**		1	U	**2.06**		5	U	--	
	MW-36-091318	9/13/2018	µg/L	**238**		1	U	**326**		**238**		1	U	1	U	5	U	--	
	MW-36-120618	12/6/2018	µg/L	**146**		1	U	**181**		**142**		1	U	1	U	5	U	--	
	MW-36-021919	2/19/2019	µg/L	**708**		1	U	**186**		**152**		1	U	1	U	5	U	--	
	MW-36-030719	3/7/2019	µg/L	**223**		1	U	**210**		**161**		1	U	**2.67**		5	U	--	
	MW-36-051519	5/15/2019	µg/L	**1,160**		5	U	**78.4**		**482**		5	U	**292**		**228**		--	
	MW-36-060419	6/4/2019	µg/L	**1,100**		1	U	**48.1**		**428**		1	U	1	U	5	U	--	
	MW-36-081919	8/19/2019	µg/L	**484**		20	U	**27.5**		**197**		20	U[b]	20	U	100	U[b]	--	
	MW-36-091919	9/19/2019	µg/L	**360**		10	U	**46.0**		**188**		10	U[b]	10	U	50	U[b]	--	
	MW-36-110419	11/4/2019	µg/L	**172**		5	U	**39.7**		**78.7**		5	U	5	U	25	U	--	
	MW-36-121819	12/18/2019	µg/L	**185**		1	U	**66.2**		**78.2**		1	U	1	U	5	U	--	
MW-36	MW-36-021820	2/18/2020	µg/L	**300**		1	U	**200**		**240**		1	U	1	U	50	U[b]	--	
	MW-36-031320	3/13/2020	µg/L	**282**		1	U	**229**		**211**		1	U	1	U	5	U[b]	--	
MW-36B	MW-36B-051116	5/11/2016	µg/L	1	U	1	U	**7.20**		1	U	1	U	1	U	1	U	0.02	U

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	5.0		700		1,000		10,000		5.0		40		25		0.05	
	MW-36B-112916	11/29/2016	µg/L	1	U	1	U	**1.60**		1	U	1	U	1	U	1	U	--	
	MW-36B-062917	6/29/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-36B-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-36B-120717	12/7/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-36B-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	7W-36B-060618	6/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-36B-091318	9/13/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-36B-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-36B-030719	3/7/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-36B-060419	6/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-36B-091919	9/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-36B-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-36B-031320	3/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-37	MW-37-113016	11/30/2016	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	--	
	MW-37-062817	6/28/2017	µg/L	1	U	1	U	1	U	3	U	1	U	**1.44**		5	U	--	
	MW-37-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	**1.50**		5	U	--	
	MW-37-120617	12/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	**2.93**		5	U	--	
	MW-37-030818	3/8/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**3.71**		5	U	--	
	MW-37-060518	6/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**5.06**		5	U	--	
	MW-37-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**4.30**		5	U	--	
	MW-37-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-37-021919	2/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-37-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-37-051519	5/15/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-37-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-37-071819	7/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-37-082019	8/20/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-37-091719	9/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-37-110519	11/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-37-121919	12/19/2019	µg/L	1	U	1	U	**3.03**		3	U	1	U	**1.66**		5	U	--	
	MW-37-021120	2/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**2.89**		5	U	--	
	MW-37-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**2.85**		5	U	--	
MW-38	MW-38-113016	11/30/2016	µg/L	1	U	1	U	1	U	1	U	1	U	**5.50**		1	U	--	
	MW-38-031417	3/14/2017	µg/L	1	U	1	U	1	U	3	U	1	U	**9.14**		5	U	--	
	MW-38-032017	3/20/2017	µg/L	1	U	1	U	1	U	3	U	1	U	**7.55**		5	U	--	
	MW-38-033117	3/31/2017	µg/L	1	U	1	U	1	U	3	U	1	U	**10.2**		5	U	--	
	MW-38-040617	4/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	**8.06**		5	U	--	
MW-38	MW-38-050317	5/3/2017	µg/L	1	U	1	U	1	U	3	U	1	U	**9.08**		5	U	--	
	MW-38-062817	6/28/2017	µg/L	**9.71**		**1.17**		1	U	**6.63**		1	U	1	U	5	U	--	
	MW-38-071717	7/17/2017	µg/L	1	U	1	U	1	U	3	U	1	U	**8.59**		5	U	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte															
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	MW-38-080117	8/1/2017	µg/L	1	U	1	U	1	U	3	U	1	U	**7.25**		5	U	--	
	MW-38-090817	9/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	**12.9**		5	U	--	
	MW-38-100417	10/4/2017	µg/L	**1.75**		1	U	1	U	3	U	1	U	**11.2**		5	U	--	
	MW-38-110817	11/8/2017	µg/L	**4.48**		1	U	1	U	**12.4**		1	U	**29.2**		5	U	--	
	MW-38-120617	12/6/2017	µg/L	**102**		1	U	1	U	**86.1**		1	U	**38.0**		5	U	--	
	MW-38-010918	1/9/2018	µg/L	**311**		1	U	**2.31**		**158**		1	U	**49.4**		5	U	--	
	MW-38-020618	2/6/2018	µg/L	**389**		5	U	5	U	**208**		5	U	**48.8**		25	U	--	
	MW-38-030818	3/8/2018	µg/L	**364**		5	U	5	U	**202**		5	U	**54.8**		25	U	--	
	MW-38-040618	4/6/2018	µg/L	**347**		1	U	**2.95**		**221**		1	U	**68.8**		**10.4**		--	
	MW-38-050318	5/3/2018	µg/L	**378**		10	U	10	U	**212**		10	U[b]	**62.1**		50	U[b]	--	
	MW-38-060518	6/5/2018	µg/L	**373**		1	U	**2.49**		**222**		1	U	**75.5**		**9**		--	
	MW-38-071218	7/12/2018	µg/L	**268**		1	U	**1.27**		**138**		1	U	**52.5**		**7.26**		--	
	MW-38-091218	9/12/2018	µg/L	**157**		1	U	**1.19**		**66.5**		1	U	**38.8**		5	U	--	
	MW-38-120618	12/6/2018	µg/L	**412**		1	U	**1.90**		**236**		1	U	**89.7**		**13.7**		--	
	MW-38-021919	2/19/2019	µg/L	**887**		1	U	10	U	**331**		1	U	**87.1**		**14.3**		--	
	MW-38-030619	3/6/2019	µg/L	**849**		1	U	**2.55**		**278**		1	U	**96.7**		**18.0**		--	
	MW-38-051519	5/15/2019	µg/L	**614**		1	U	**1.42**		**178**		1	U	**95.6**		**10.1**		--	
	MW-38-060519	6/5/2019	µg/L	**950**		100	U	100	U	300	U	100	U[b]	**118**		500	U[b]	--	
	MW-38-071819	7/18/2019	µg/L	**1,260**		1	U	**3.27**		**308**		1	U	**104**		**16.2**		--	
	MW-38-082019	8/20/2019	µg/L	**1,030**		10	U	10	U	**279**		10	U[b]	**116**		50	U[b]	--	
	MW-38-091719	9/17/2019	µg/L	**40.2**		10	U	10	U	30	U	10	U[b]	**88.2**		50	U[b]	--	
	MW-38-110519	11/5/2019	µg/L	**7.33**		1	U	1	U	**7.01**		1	U	**64.4**		5	U	--	
	MW-38-121919	12/19/2019	µg/L	**2.19**		1	U	**1.52**		**5.85**		1	U	**80.0**		5	U	--	
	MW-38-021120	2/11/2020	µg/L	**114**		1	U	1	U	**66.3**		1	U	**123**		5	U	--	
	MW-38-031020	3/10/2020	µg/L	**411**		**1.37**		**2.68**		**172**		1	U	**144**		5	U	--	
MW-39	MW-39-120716	12/7/2016	µg/L	**6,320**		**682**		**1,290**		**3,650**		50	U[b]	**311**		**86**		--	
	MW-39-031417	3/14/2017	µg/L	**6,370**		**431**		**2,200**		**3,700**		10	U[b]	**199**		**117**		--	
	MW-39-032017	3/20/2017	µg/L	**7,340**		**704**		**2,990**		**4,050**		100	U[b]	**248**		500	U[b]	--	
	MW-39-033117	3/31/2017	µg/L	**7,540**		**899**		**3,140**		**4,400**		50	U[b]	**272**		250	U[b]	--	
	MW-39-040617	4/6/2017	µg/L	**6,180**		**754**		**3,280**		**3,860**		50	U[b]	**257**		250	U[b]	--	
	MW-39-062817	6/28/2017	µg/L	**5,470**		**58**		**3,360**		**3,900**		20	U[b]	**239**		100	U[b]	--	
	MW-39-071717	7/17/2017	µg/L	**4,690**		100	U	**3,760**		**4,580**		100	U[b]	**344**		500	U[b]	--	
	MW-39-080117	8/1/2017	µg/L	**4,630**		100	U	**2,880**		**4,740**		100	U[b]	**348**		500	U[b]	--	
	MW-39-090817	9/8/2017	µg/L	**3,380**		**10.7**		**1,040**		**2,740**		1	U	**376**		**15.6**		--	
	MW-39-100417	10/4/2017	µg/L	**1,560**		50	U	**365**		**1,350**		50	U[b]	**305**		250	U[b]	--	
	MW-39-110817	11/8/2017	µg/L	**878**		50	U	**123**		**368**		50	U[b]	**442**		250	U[b]	--	
	MW-39-120617	12/6/2017	µg/L	**345**		50	U	**69**		**150**		50	U[b]	**355**		250	U[b]	--	
MW-39	MW-39-010918	1/9/2018	µg/L	**23.8**		5	U	5	U	15	U	5	U	**370**		25	U	--	
	MW-39-020618	2/6/2018	µg/L	**46.9**		5	U	5	U	15	U	5	U	**263**		25	U	--	
	MW-39-030818	3/8/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**304**		5	U	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	MW-39-040618	4/6/2018	µg/L	**1.00**		1	U	1	U	3	U	1	U	**297**		5	U	--	
	MW-39-050318	5/3/2018	µg/L	10	U	10	U	10	U	30	U	10	U[b]	**287**		50	U[b]	--	
	MW-39-060518	6/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**322**		5	U	--	
	MW-39-071218	7/12/2018	µg/L	**1.00**		1	U	1	U	3	U	1	U	**244**		5	U	--	
	MW-39-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**176**		5	U	--	
	MW-39-120618	12/6/2018	µg/L	**30.6**		1	U	**7.49**		**29.3**		1	U	**156**		5	U	--	
	MW-39-021919	2/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	**53.8**		5	U	--	
	MW-39-030619	3/6/2019	µg/L	**1.91**		1	U	**1.01**		3	U	1	U	**61.0**		5	U	--	
	MW-39-051519	5/15/2019	µg/L	1	U	1	U	1	U	3	U	1	U	**89.4**		5	U	--	
	MW-39-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	**156**		5	U	--	
	MW-39-081919	8/19/2019	µg/L	**10.9**		1	U	1	U	**5.35**		1	U	**162**		5	U	--	
	MW-39-091919	9/19/2019	µg/L	**1.67**		1	U	1	U	3	U	1	U	**121**		5	U	--	
	MW-39-110419	11/4/2019	µg/L	**14.3**		1	U	1	U	**7.75**		1	U	**114**		5	U	--	
	MW-39-121819	12/18/2019	µg/L	**8.47**		1	U	1	U	**7.49**		1	U	**114**		5	U	--	
	MW-39-021120	2/11/2020	µg/L	**2.28**		1	U	1	U	**5.04**		1	U	**123**		5	U	--	
	MW-39-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**124**		5	U	--	
MW-40	MW-40-120716	12/7/2016	µg/L	**6,730**		**588**		**7,460**		**3,390**		50	U[b]	**373**		**64.8**		--	
	MW-40-031417	3/14/2017	µg/L	**11,600**		**1,280**		**16,100**		**7,260**		50	U[b]	**691**		250	U[b]	--	
	MW-40-032017	3/20/2017	µg/L	**12,300**		**1,330**		**19,600**		**7,500**		200	U[b]	**654**		1,000	U[b]	--	
	MW-40-033117	3/31/2017	µg/L	**13,300**		**1,500**		**19,500**		**8,070**		100	U[b]	**727**		500	U[b]	--	
	MW-40-040617	4/6/2017	µg/L	**10,400**		**1,180**		**16,200**		**6,570**		200	U[b]	**650**		1,000	U[b]	--	
	MW-40-062817	6/28/2017	µg/L	**9,250**		**1,030**		**19,200**		**6,540**		500	U[b]	**590**		2,500	U[b]	--	
	MW-40-071717	7/17/2017	µg/L	**11,400**		**1,210**		**25,300**		**7,430**		500	U[b]	**727**		2,500	U[b]	--	
	MW-40-080117	8/1/2017	µg/L	**12,000**		**1,120**		**23,200**		**8,070**		500	U[b]	**631**		2,500	U[b]	--	
	MW-40-090817	9/8/2017	µg/L	**14,300**		**1,250**		**28,700**		**9,250**		20	U[b]	**716**		**219**		--	
	MW-40-100417	10/4/2017	µg/L	**13,800**		1,000	U[b]	**28,800**		**9,530**		1,000	U[b]	1,000	U[b]	5,000	U[b]	--	
	MW-40-110817	11/8/2017	µg/L	**13,500**		1,000	U[b]	**23,000**		**9,290**		1,000	U[b]	1,000	U[b]	5,000	U[b]	--	
	MW-40-120617	12/6/2017	µg/L	**14,300**		1,000	U[b]	**22,300**		**10,100**		1,000	U[b]	1,000	U[b]	5,000	U[b]	--	
	MW-40-010918	1/9/2018	µg/L	**12,400**		**773**		**22,300**		**10,200**		200	U[b]	**497**		1,000	U[b]	--	
	MW-40-020618	2/6/2018	µg/L	**11,100**		**777**		**20,300**		**9,350**		200	U[b]	**373**		1,000	U[b]	--	
	MW-40-030818	3/8/2018	µg/L	**8,450**		**498**		**14,500**		**7,580**		50	U[b]	**337**		250	U[b]	--	
	MW-40-040618	4/6/2018	µg/L	**6,710**		**212**		**8,350**		**5,460**		100	U[b]	**423**		500	U[b]	--	
	MW-40-050318	5/3/2018	µg/L	**2,890**		100	U	**3,490**		**3,350**		100	U[b]	**288**		500	U[b]	--	
	MW-40-060518	6/5/2018	µg/L	**472**		**16.8**		**514**		**1,490**		1	U	**255**		**20.4**		--	
	MW-40-071218	7/12/2018	µg/L	**148**		**6.85**		**28.7**		**197**		1	U	**152**		**8.62**		--	
	MW-40-080218	8/2/2018	µg/L	**123**		**4.46**		**9.67**		**93.2**		1	U	**183**		5	U	--	
	MW-40-091218	9/12/2018	µg/L	**28.2**		**1.67**		**15.3**		**14.0**		1	U	**112**		5	U	--	
MW-40	MW-40-110218	11/2/2018	µg/L	**6.40**		1	U	**2.05**		3	U	1	U	**76.7**		5	U	--	
	MW-40-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**36.2**		5	U	--	
	MW-40-022019	2/20/2019	µg/L	**2.68**		1	U	1	U	3	U	1	U	**7.34**		5	U	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte															
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	5.0		700		1,000		10,000		5.0		40		25		0.05	
	MW-40-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	3.73		5	U	--	
	MW-40-051419	5/14/2019	µg/L	1	U	1	U	1	U	3	U	1	U	2.12		5	U	--	
	MW-40-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1.81		5	U	--	
	MW-40-082119	8/21/2019	µg/L	2.56		1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-40-091919	9/19/2019	µg/L	4.50		1	U	3.17		3	U	1	U	1	U	5	U	--	
	MW-40-110619	11/6/2019	µg/L	10.1		1	U	13.1		21.4		1	U	2.67		5	U	--	
	MW-40-121919	12/19/2019	µg/L	86.1		6.09		86.2		127		1	U	12.6		5	U	--	
	MW-40-021120	2/11/2020	µg/L	125		1.10		38.7		78.1		1	U	19.2		5	U	--	
	MW-40-031020	3/10/2020	µg/L	195		2.92		53.0		102		1	U	29.9		5	U	--	
MW-41	MW-41-120716	12/7/2016	µg/L	212		2	U	2	U	155		2	U	6.70		5.60		--	
	MW-41-031417	3/14/2017	µg/L	469		1.78		1	U	275		1	U	4.34		18.1		--	
	MW-41-032017	3/20/2017	µg/L	424		2.62		1	U	342		1	U	1	U	16.9		--	
	MW-41-033117	3/31/2017	µg/L	449		5	U	5	U	343		5	U[b]	5	U	25	U[b]	--	
	MW-41-040617	4/6/2017	µg/L	470		2.06		1	U	258		1	U	3.84		10.6		--	
	MW-41-062817	6/28/2017	µg/L	292		8.83		2.09		271		1	U	3.36		13.3		--	
	MW-41-071717	7/17/2017	µg/L	487		15.8		3.09		366		1	U	3.62		27.9		--	
	MW-41-080117	8/1/2017	µg/L	371		10	U	10	U	260		10	U[b]	10	U	50	U[b]	--	
	MW-41-090817	9/8/2017	µg/L	189		1.51		1	U	90.0		1	U	3.74		5	U	--	
	MW-41-100417	10/4/2017	µg/L	93.5		1	U	1	U	59.9		1	U	1.84		5	U	--	
	MW-41-110817	11/8/2017	µg/L	99.6		1	U	1	U	56.6		1	U	2.46		5.68		--	
	MW-41-120617	12/6/2017	µg/L	27.6		1	U	1	U	11.1		1	U	1.62		5	U	--	
	MW-41-010918	1/9/2018	µg/L	2.06		1	U	1	U	3	U	1	U	1.43		5	U	--	
	MW-41-020618	2/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-030818	3/8/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-040618	4/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-050318	5/3/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-060518	6/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-071218	7/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-021919	2/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-051519	5/15/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-081919	8/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-091919	9/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-110419	11/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-41	MW-41-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-021120	2/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-41-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	5.0		700		1,000		10,000		5.0		40		25		0.05	
MW-42	MW-42-120716	12/7/2016	µg/L	**3.80**		1	U	1	U	**2.70**		1	U	1	U	1	U	--	
	MW-42-031417	3/14/2017	µg/L	**19.3**		1	U	1	U	3	U	1	U	**1.12**		5	U	--	
	MW-42-032017	3/20/2017	µg/L	**59.6**		1	U	1	U	**16.9**		1	U	**1.24**		5	U	--	
	MW-42-033117	3/31/2017	µg/L	**135**		1	U	1	U	**73.8**		1	U	1	U	**5.19**		--	
	MW-42-040617	4/6/2017	µg/L	**93.5**		1	U	1	U	**53.3**		1	U	**1.18**		5	U	--	
	MW-42-062817	6/28/2017	µg/L	**15.1**		1	U	1	U	**11.7**		1	U	**1.25**		5	U	--	
	MW-42-090817	9/8/2017	µg/L	**143**		1	U	1	U	**100**		1	U	**1.51**		**5.52**		--	
	MW-42-120617	12/6/2017	µg/L	**9.82**		1	U	1	U	**45.0**		1	U	**1.24**		5	U	--	
	MW-42-030818	3/8/2018	µg/L	**1.02**		1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-42-060518	6/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-42-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-42-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-42-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-42-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-42-091919	9/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-42-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-42-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-43	MW-43-110817	11/8/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43-120617	12/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43-010918	1/9/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43-020618	2/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43-030818	3/8/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43-040618	4/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43-050318	5/3/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43-071218	7/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**4.42**		5	U	--	
	MW-43-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43-091719	9/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-43B	MW-43B-120617	12/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43B-030818	3/8/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43B-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43B-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-43B	MW-43B-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43B-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43B-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	

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Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	5.0		700		1,000		10,000		5.0		40		25		0.05	
	MW-43B-091719	9/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43B-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-43B-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-44	--	3/13/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-44-062917	6/29/2017	µg/L	**1.06**		1	U	**7.12**		**3.11**		1	U	1	U	5	U	--	
	--	9/5/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	12/4/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-44-030818	3/8/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-44-060518	6/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-44-091318	9/13/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-44-120518	12/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-44-030519	3/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-44-060419	6/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	--	9/16/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-44-121919	12/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-44-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-44B	MW-44B-031317	3/13/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-44B-062817	6/28/2017	µg/L	1	U	1	U	**2.39**		3	U	1	U	1	U	5	U	--	
	MW-44B-090717	9/7/2017	µg/L	1	U	1	U	**3.07**		3	U	1	U	1	U	5	U	--	
	MW-44B-120517	12/5/2017	µg/L	1	U	1	U	**2.27**		3	U	1	U	1	U	5	U	--	
	MW-44B-030818	3/8/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-44B-060518	6/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-44B-091118	9/11/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-44B-120518	12/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-44B-030519	3/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-44B-060419	6/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-44B-091919	9/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-44B-121719	12/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-44B-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-45	--	3/13/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/20/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	3/31/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	4/6/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	5/3/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-45-062917	6/29/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-45-071717	7/17/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-45-080217	8/2/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-45	--	9/5/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	10/4/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	11/8/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	

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Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	--	12/4/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	1/8/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	--	2/6/2018	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-45-030618	3/6/2018	µg/L	**24.3**		**6.11**		**28.9**		**41.2**		1	U	1	U	5	U	--	
	MW-45-040618	4/6/2018	µg/L	**21.9**		**3.08**		**19.6**		**36.6**		1	U	1	U	5	U	--	
	MW-45-050318	5/3/2018	µg/L	**2.65**		1	U	1	U	1	U	1	U	**3.35**		5	U	--	
	MW-45-060718	6/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-45-071318	7/13/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-45-091318	9/13/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**46.3**		5	U	--	
	MW-45-120518	12/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**3.67**		5	U	--	
	MW-45-030519	3/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-45-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	**47.7**		5	U	--	
	MW-45-091719	9/17/2019	µg/L	**5.24**		1	U	1	U	1	U	1	U	**103**		5	U	--	
	--	12/16/2019	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-45-021220	2/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**19.5**		5	U	--	
	MW-45-031120	3/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**1.15**		5	U	--	
MW-45B	MW-45B-031317	3/13/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-45B-032017	3/20/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-45B-033117	3/31/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-45B-040617	4/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-45B-062817	6/28/2017	µg/L	1	U	1	U	**1.73**		3	U	1	U	1	U	5	U	--	
	--	9/5/2017	--	NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW		NS-IW	
	MW-45B-120717	12/7/2017	µg/L	1	U	1	U	**3.26**		3	U	1	U	1	U	5	U	--	
	MW-45B-030618	3/6/2018	µg/L	1	U	1	U	**2.75**		3	U	1	U	1	U	5	U	--	
	MW-45B-060718	6/7/2018	µg/L	1	U	1	U	**1.94**		3	U	1	U	1	U	5	U	--	
	MW-45B-091118	9/11/2018	µg/L	1	U	1	U	**1.16**		3	U	1	U	1	U	5	U	--	
	MW-45B-120518	12/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-45B-030519	3/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-45B-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-45B-091919	9/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-45B-121719	12/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-45B-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-46	MW-46-120617	12/6/2017	µg/L	**4.97**		1	U	1	U	**7.74**		1	U	**85.5**		5	U	--	
	MW-46-030618	3/6/2018	µg/L	**173**		**1.76**		**16.5**		**29.5**		1	U	**129**		**7.21**		--	
	MW-46-060518	6/5/2018	µg/L	**294**		1	U	**11.8**		**147**		1	U	**184**		5	U	--	
	MW-46-080218	8/2/2018	µg/L	**1,520**		**4.24**		**92.1**		**763**		1	U	**200**		**20.7**		--	
	MW-46-091118	9/11/2018	µg/L	**1,510**		**6.81**		**64.0**		**597**		1	U	**311**		**23.4**		--	
MW-46	MW-46-110218	11/2/2018	µg/L	**1,790**		**7.10**		**120**		**740**		1	U	**299**		**16.6**		--	
	MW-46-120518	12/5/2018	µg/L	**1,250**		**3.07**		**46.7**		**521**		**1.90**		**290**		**7.38**		--	
	MW-46-022019	2/20/2019	µg/L	**2,380**		**2.97**		**82.4**		**799**		1	U	**346**		**22.4**		--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	MW-46-030519	3/5/2019	µg/L	**2,350**		**4.01**		**73.7**		**701**		1	U	**406**		**32.8**		--	
	MW-46-051419	5/14/2019	µg/L	**1,300**		**2.27**		**54.8**		**412**		1	U	**174**		**28.9**		--	
	MW-46-060519	6/5/2019	µg/L	**1,300**		10	U	**19.5**		**400**		10	U[b]	**278**		50	U[b]	--	
	MW-46-071719	7/17/2019	µg/L	**976**		1	U	**29.1**		**237**		1	U	**198**		**15.5**		--	
	MW-46-082119	8/21/2019	µg/L	**874**		25	U	25	U	**226**		25	U[b]	**191**		125	U[b]	--	
	MW-46-091719	9/17/2019	µg/L	**705**		25	U	**26.1**		**150**		25	U[b]	**175**		125	U[b]	--	
	MW-46-110719	11/7/2019	µg/L	**136**		5	U	5	U	**18.8**		5	U	**158**		25	U	--	
	MW-46-122019	12/20/2019	µg/L	**7.14**		1	U	1	U	3	U	1	U	**121**		5	U	--	
	MW-46-021320	2/13/2020	µg/L	5	U	5	U	5	U	15	U	5	U	**122**		25	U	--	
	MW-46-031220	3/12/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**161**		5	U	--	
MW-47	MW-47-120617	12/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-47-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-47-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-47-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-47-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-47-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-47-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-47-091819	9/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-47-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-47-031120	3/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-48B	MW-48B-120617	12/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	**2.92**		5	U	--	
	MW-48B-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**2.97**		5	U	--	
	MW-48B-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**2.12**		5	U	--	
	MW-48B-091218	9/12/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**1.80**		5	U	--	
	MW-48B-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**1.56**		5	U	--	
	MW-48B-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	**1.64**		5	U	--	
	MW-48B-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	**1.45**		5	U	--	
	MW-48B-091819	9/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	**1.14**		5	U	--	
	MW-48B-121819	12/18/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-48B-031120	3/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**1.23**		5	U	--	
MW-49	MW-49-120617	12/6/2017	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-49-030818	3/8/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-49-060518	6/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-49-091118	9/11/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-49-120518	12/5/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-49-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-49-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-49	MW-49-091719	9/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-49-121719	12/17/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-49-031020	3/10/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
MW-50B	MW-50B-120617	12/6/2017	µg/L	**1.37**		1	U	1	U	3	U	1	U	**35.5**		5	U	--	
	MW-50B-030718	3/7/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**26.7**		5	U	--	
	MW-50B-060618	6/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	**21.8**		5	U	--	
	MW-50B-091218	9/12/2018	µg/L	**150**		**1.20**		**57.9**		**47.8**		1	U	**87.9**		5	U	--	
	MW-50B-120618	12/6/2018	µg/L	**27.4**		1	U	**3.21**		3	U	1	U	**40.6**		5	U	--	
	MW-50B-030619	3/6/2019	µg/L	**1.18**		1	U	1	U	3	U	1	U	**43.9**		5	U	--	
	MW-50B-060519	6/5/2019	µg/L	1	U	1	U	1	U	3	U	1	U	**44.1**		5	U	--	
	MW-50B-091819	9/18/2019	µg/L	**25.6**		1	U	**1.20**		3	U	1	U	**43.1**		5	U	--	
	MW-50B-121819	12/18/2019	µg/L	**2.30**		1	U	1	U	3	U	1	U	**32.4**		5	U	--	
	MW-50B-021820	2/18/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**42.1**		5	U	--	
	MW-50B-031120	3/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	**60.5**		5	U	--	
MW-51	MW-51-100518	10/5/2018	µg/L	1	U	1	U	**1.88**		3	U	1	U	1	U	5	U	--	
	MW-51-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-51-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-51-051519	5/15/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-51-081919	8/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-51-110419	11/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	**3.57**		5	U	--	
	MW-51-021120	2/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-52	MW-52-100518	10/5/2018	µg/L	1	U	1	U	**1.25**		3	U	1	U	**3.12**		5	U	--	
	MW-52-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-52-030619	3/6/2019	µg/L	1	U	1	U	1	U	3	U	1	U	**1.32**		5	U	--	
	MW-52-051519	5/15/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-52-081919	8/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	**2.01**		5	U	--	
	MW-52-110419	11/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-52-021120	2/11/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-53	MW-53-100518	10/5/2018	µg/L	1	U	1	U	**5.43**		3	U	1	U	1	U	5	U	--	
	MW-53-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-53-030719	3/7/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-53-051519	5/15/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-53-081919	8/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-53-110419	11/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-53-021320	2/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-54	MW-54-100518	10/5/2018	µg/L	1	U	1	U	**1.72**		3	U	1	U	**1.35**		5	U	--	
	MW-54-120618	12/6/2018	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-54-030719	3/7/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-54-051519	5/15/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-54-081919	8/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-54	MW-54-110419	11/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-54-021320	2/13/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-55	MW-55-040919	4/9/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	

Table 5B. Analytical Results for Groundwater, Historical

Plantation Pipe Line Company

Lewis Drive Remediation Site, Belton, South Carolina

Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location	Sample ID	Sample Date	Units	Analyte																	
				Benzene		Ethylbenzene		Toluene		Total Xylenes		1,2-DCA		MTBE		Naphthalene		EDB	
		RBSL[a]:	µg/L	**5.0**		**700**		**1,000**		**10,000**		**5.0**		**40**		**25**		**0.05**	
	MW-55-051519	5/15/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-55-081919	8/19/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-55-110419	11/4/2019	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
	MW-55-021820	2/18/2020	µg/L	1	U	1	U	1	U	3	U	1	U	1	U	5	U	--	
MW-56	MW-56-040919	4/9/2019	µg/L	**209**		1	U	**2.57**		**93.9**		1	U	**79.9**		5	U	--	
	MW-56-051519	5/15/2019	µg/L	**299**		1	U	**4.11**		**119**		1	U	**86.2**		**5.33**		--	
	MW-56-071719	7/17/2019	µg/L	**549**		1	U	**8.90**		**205**		1	U	**146**		**8.18**		--	
	MW-56-082119	8/21/2019	µg/L	**391**		10	U	10	U	**91.1**		10	U[b]	**134**		50	U[b]	--	
	MW-56-091719	9/17/2019	µg/L	**30.1**		1	U	1	U	**8.51**		1	U	**137**		5	U	--	
	MW-56-110519	11/5/2019	µg/L	**5.55**		1	U	1	U	3	U	1	U	**168**		5	U	--	
	MW-56-121719	12/17/2019	µg/L	**84.3**		1	U	**1.13**		**33.6**		1	U	**141**		5	U	--	
	MW-56-021320	2/13/2020	µg/L	**135**		1	U	**1.61**		**51.5**		1	U	**192**		5	U	--	
	MW-56-031120	3/11/2020	µg/L	**46.6**		1	U	1	U	**19.1**		1	U	**192**		5	U	--	
MW-57	MW-57-040919	4/9/2019	µg/L	**1,340**		**2.81**		**42.0**		**406**		1	U	**198**		**20.5**		--	
	MW-57-051519	5/15/2019	µg/L	**535**		**1.36**		**11.1**		**178**		1	U	**169**		**8.65**		--	
	MW-57-071719	7/17/2019	µg/L	**1,330**		**3.63**		**22.9**		**341**		1	U	**186**		**19.8**		--	
	MW-57-082119	8/21/2019	µg/L	**584**		10	U	10	U	**76.2**		10	U[b]	**183**		50	U[b]	--	
	MW-57-091719	9/17/2019	µg/L	**71.8**		10	U	10	U	30	U	10	U[b]	**74.6**		50	U[b]	--	
	MW-57-110519	11/5/2019	µg/L	**514**		1	U	**11.2**		**83.5**		1	U	**193**		5	U	--	
	MW-57-121719	12/17/2019	µg/L	**154**		1	U	**1.85**		**11.5**		1	U	**108**		5	U	--	
	MW-57-021220	2/12/2020	µg/L	**42.8**		1	U	1	U	3	U	1	U	**64.3**		5	U	--	
	MW-57-031120	3/11/2020	µg/L	**99.4**		1	U	1	U	**9.45**		1	U	**98.4**		5	U	--	

Notes:

[a] RBSL = Risk-based screening level identified in South Carolina Underground Storage Tank Management Division Programmatic Quality Assurance Program Plan, Revision 3.1, Table D1 "RBSLs for Groundwater," February 2016.

[b] The constituent was analyzed for, but was not detected above the laboratory reporting/quantitation limit. However, the laboratory reporting/quantitation limit is above the screening criteria. The actual absence or presence of this analyte between the screening criteria and the laboratory reporting/quantitation limit cannot be determined.

Samples analyzed by EPA Methods SW 8260B and 8011.

Bold indicates the analyte was detected above the method detection limit.

Gray shading indicates the analyte exceeded RBSLs.

µg/L = microgram(s) per liter

1,2-DCA = 1,2-dichloroethane

EDB = 1,2-dibromoethane

ID = identification

MTBE = methyl tertiary butyl ether

MW = monitoring well

NS-FP = sample not collected due to the presence of free product in the well

NS-HS = sample not collected due to health and safety concerns

NS-IW = sample not collected due to insufficient volume of water in well

U = analyte was not detected above the reported sample quantitation limit

Table 6. Well Construction Information
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Installation Method	Permit #	Date Installed	Date Abandoned	Purpose	Ground Surface Elevation (ft amsl)	TOC Elevation (ft amsl)	Measured Depth to Bottom (ft BTOC)	Bore Hole Diameter (in)	Well Dia (in)	Well Depth (ft bgs)	Bottom of Well (ft amsl)	Top of Screen or Open Borehole Interval (ft BTOC)	Bottom of Screen or Open Borehole Interval (ft BTOC)	Top of Screen or Open Borehole Interval (ft bgs)	Bottom of Screen or Open Borehole Interval (ft bgs)	Top of Screen or Open Borehole Interval (ft amsl)	Bottom of Screen or Open Borehole Interval (ft amsl)	Length of Screen or Open Borehole Interval (ft)
Monitoring Wells																			
MW-01	CME 550 HSA	MW-10136	6/26/2015	Still in use	Monitoring Well/Gauging	850.25	853.07	15.61	8	2	13.00	837.2	5.82	15.82	3.0	13.0	847.2	837.2	10.00
MW-01B	Schramm Air Rig	MW-10136	6/25/2015	Still in use	Monitoring Well/Gauging	850.45	852.99	45.26	10	6	38.50	812.0	21.03	41.03	18.5	38.5	832.0	812.0	20.00
MW-02	CME 750 HAS	MW-10136	6/25/2015	Still in use	Monitoring Well/Gauging	841.24	841.04	19.78	8	2	20.00	821.2	4.80	19.80	5.0	20.0	836.2	821.2	15.00
MW-02B	Schramm Air Rig/rehabbed (10/5/2017) with a Mobile Drill B57	MW-10136	6/24/2015	Still in use	Monitoring Well/Gauging	841.18	841.19	81.55	10	2	81.70	759.5	70.00	81.70	70.0	81.7	771.2	759.5	13.00
MW-03	CME 550 HSA	MW-10136	6/23/2015	Still in use	Monitoring Well/Gauging	838.38	838.36	22.19	8	2	20.00	818.4	4.98	19.98	5.0	20.0	833.4	818.4	15.00
MW-04	CME 550 HSA	MW-10136	6/23/2015	Still in use	Monitoring Well/Gauging	844.51	844.42	20.65	8	2	20.00	824.5	4.91	19.91	5.0	20.0	839.5	824.5	15.00
MW-05	CME 550 HSA	MW-10136	6/24/2015	Still in use	Monitoring Well/Gauging	851.15	851.11	19.89	8	2	20.00	831.1	4.96	19.96	5.0	20.0	846.1	831.1	15.00
MW-06	CME 550 HSA	MW-10136	6/24/2015	Still in use	Monitoring Well/Gauging	852.98	852.92	19.20	8	2	19.60	833.4	4.54	19.54	5.0	19.6	848.0	833.4	15.00
MW-06B	Mobile Drill B57	MW-11117	10/17/2017	Still in use	Monitoring Well/Gauging	852.42	852.57	85.65	13.75	4	85.20	767.2	65.50	85.50	65.5	85.5	786.9	766.9	20.00
MW-07	CME 550 HSA	MW-10136	6/25/2015	Still in use	Monitoring Well/Gauging	853.02	853.02	13.60	8	2	13.50	839.5	3.50	13.50	3.5	13.5	849.5	839.5	10.00
MW-08	CME 550 HSA	MW-10136	6/25/2015	Still in use	Monitoring Well/Gauging	844.75	844.72	19.80	8	2	19.70	825.1	4.67	19.67	4.7	19.7	840.1	825.1	15.00
MW-09	CME 550 HSA	MW-10136	6/25/2015	Still in use	Monitoring Well/Gauging	843.72	843.63	20.21	8	2	19.50	824.2	4.41	19.41	4.5	19.5	839.2	824.2	15.00
MW-09B	Mobile Drill B57	MW-11117	10/17/2017	Still in use	Monitoring Well/Gauging	843.71	843.92	151.00	13.75	4	151.00	692.7	132.20	151.00	132.2	151.0	711.5	692.7	20.00
MW-10	CME 550 HSA	MW-10136	6/25/2015	Still in use	Monitoring Well/Gauging	842.33	845.41	23.54	8	2	20.00	822.3	8.08	23.08	5.0	20.0	837.3	822.3	15.00
MW-11	CME 550 HSA	MW-10136	7/1/2015	Still in use	Monitoring Well/Gauging	852.36	855.63	32.50	8	2	25.20	827.2	13.27	28.27	14.2	25.0	838.2	827.4	15.00
MW-12	CME 550 HSA	MW-10136	6/25/2015	Still in use	Monitoring Well/Gauging	832.20	834.53	21.69	8	2	19.30	812.9	6.63	21.63	4.3	19.3	827.9	812.9	15.00
MW-12B	Geoprobe 3230 DT HSA	MW-10460	12/22/2015	Still in use	Monitoring Well/Gauging	832.26	834.98	45.81	10	6	43.00	789.3	35.72	45.72	33.0	43.0	799.3	789.3	10.00
MW-13	CME 550 HSA	MW-10136	6/26/2015	Still in use	Monitoring Well/Gauging	845.93	848.84	22.18	8	2	19.00	826.9	6.92	21.92	4.0	19.0	841.9	826.9	15.00
MW-13B	Geoprobe 3230 DT HSA	MW-10461	12/21/2015	Still in use	Monitoring Well/Gauging	847.19	849.82	55.36	10	6	58.00	789.2	50.64	60.64	48.0	58.0	799.2	789.2	10.00
MW-14	CME 550 HSA	MW-10136	6/26/2015	Still in use	Monitoring Well/Gauging	836.47	838.70	22.20	8	2	19.30	817.2	6.53	21.53	4.3	19.3	832.2	817.2	15.00
MW-14B	Mobile ST Schramm	MW-10578	5/3/2016	Still in use	Monitoring Well/Gauging	837.12	840.20	76.97	10	6	76.90	760.2	66.07	76.07	66.0	76.0	771.1	761.1	10.00
MW-15	CME 550 HSA	MW-10136	6/29/2015	Still in use	Monitoring Well/Gauging	828.68	831.03	21.22	8	2	19.00	809.7	6.35	21.35	4.0	19.0	824.7	809.7	15.00
MW-15B	CME 550 HSA	MW-10136	7/28/2015	Still in use	Monitoring Well/Gauging	828.66	831.29	74.41	10	6	77.85	750.8	70.48	80.48	67.9	77.9	760.8	750.8	10.00
MW-16	CME 750 HSA	MW-10136	6/26/2015	Still in use	Monitoring Well/Gauging	847.63	847.67	20.37	8	2	20.00	827.6	5.03	20.03	5.0	20.0	842.6	827.6	15.00
MW-17	CME 750 HSA	MW-10136	6/29/2015	Still in use	Monitoring Well/Gauging	855.32	855.35	15.30	8	2	11.00	844.3	6.03	11.03	6.0	11.0	849.3	844.3	5.00
MW-17B	Geoprobe 3230 DT HSA	MW-10462	1/7/2016	Still in use	Monitoring Well/Gauging	855.37	855.37	27.50	10	6	27.00	828.4	17.00	27.00	17.0	27.0	838.4	828.4	10.00
MW-18	CME 550 HSA	MW-10136	6/29/2015	Still in use	Monitoring Well/Gauging	846.82	846.89	19.75	8	2	20.00	826.8	5.06	20.06	5.0	20.0	841.8	826.8	15.00
MW-19	CME 750 HSA	MW-10136	6/29/2015	Still in use	Monitoring Well/Gauging	851.23	853.94	12.13	8	2	9.50	841.7	7.20	12.20	4.5	9.5	846.7	841.7	5.00
MW-20	CME 750 HSA	MW-10136	6/30/2015	Still in use	Monitoring Well/Gauging	853.07	852.89	19.45	8	2	19.00	834.1	3.81	18.81	4.0	19.0	849.1	834.1	15.00
MW-21	CME 750 HSA	MW-10136	6/30/2015	Still in use	Monitoring Well/Gauging	855.68	855.77	20.70	8	2	20.00	835.7	5.09	20.09	5.0	20.0	850.7	835.7	15.00
MW-22	CME 750 HSA	MW-10136	7/1/2015	Still in use	Monitoring Well/Gauging	854.62	854.60	10.30	8	2	11.00	843.6	5.98	10.98	6.0	11.0	848.6	843.6	5.00
MW-23	CME 750 HSA	MW-10136	7/1/2015	Still in use	Monitoring Well/Gauging	846.66	849.57	23.50	8	2	20.00	826.7	7.91	22.91	5.0	20.0	841.7	826.7	15.00
MW-23B	CME 550 HSA	MW-10136	7/22/2015	Still in use	Monitoring Well/Gauging	846.81	849.69	53.48	10	6	50.50	796.3	30.88	53.38	28.0	50.5	818.8	796.3	22.50
MW-24	CME 550 HSA	MW-10136	7/15/2015	Still in use	Monitoring Well/Gauging	815.72	817.92	15.30	8	2	13.00	802.7	10.20	15.20	8.0	13.0	807.7	802.7	5.00
MW-24B	CME 550 HSA	MW-10136	7/20/2015	Still in use	Monitoring Well/Gauging	815.83	818.72	45.10	10	6	39.50	776.3	22.39	42.39	19.5	39.5	796.3	776.3	20.00
MW-25	Geoprobe 3230 DT HSA	MW-10463	1/5/2016	Still in use	Monitoring Well/Gauging	823.46	826.18	18.07	8	2	15.00	808.5	8.04	18.04	5.0	15.0	818.5	808.5	10.00
MW-25B	Geoprobe 3230 DT HSA	MW-10464	1/5/2016	Still in use	Monitoring Well/Gauging	822.59	823.81	59.00	10	6	58.00	764.6	49.22	59.22	48.0	58.0	774.6	764.6	10.00
MW-26	Geoprobe 3230 DT HSA	MW-10465	1/4/2016	Still in use	Monitoring Well/Gauging	844.76	847.56	17.15	8	2	15.25	829.5	7.27	17.27	5.0	15.0	839.8	829.8	10.00

Table 6. Well Construction Information
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Installation Method	Permit #	Date Installed	Date Abandoned	Purpose	Ground Surface Elevation (ft amsl)	TOC Elevation (ft amsl)	Measured Depth to Bottom (ft BTOC)	Bore Hole Diameter (in)	Well Dia (in)	Well Depth (ft bgs)	Bottom of Well (ft amsl)	Top of Screen or Open Borehole Interval (ft BTOC)	Bottom of Screen or Open Borehole Interval (ft BTOC)	Top of Screen or Open Borehole Interval (ft bgs)	Bottom of Screen or Open Borehole Interval (ft bgs)	Top of Screen or Open Borehole Interval (ft amsl)	Bottom of Screen or Open Borehole Interval (ft amsl)	Length of Screen or Open Borehole Interval (ft)
MW-26B	Geoprobe 3230 DT HSA	MW-10466	1/4/2016	Still in use	Monitoring Well/Gauging	844.81	847.81	43.84	10	6	38.00	806.8	29.00	41.00	26.0	38.0	818.8	806.8	12.00
MW-27	Geoprobe 3230 DT HSA	MW-10467	1/5/2016	Still in use	Monitoring Well/Gauging	854.22	854.11	29.51	8	2	30.25	824.0	15.11	30.11	15.0	30.0	839.2	824.2	15.00
MW-27B	CME 550 HSA / Schramm	MW-10578	4/26/2016	Still in use	Monitoring Well/Gauging	854.27	857.14	41.45	10	6	46.00	808.3	31.45	41.45	36.0	46.0	818.3	808.3	10.00
MW-28	Geoprobe 3230 DT HSA	MW-10468	1/5/2016	Still in use	Monitoring Well/Gauging	841.49	844.31	25.93	8	2	25.25	816.2	13.50	23.50	15.0	25.0	826.5	816.5	10.00
MW-29	Geoprobe 3230 DT HSA	MW-10469	1/4/2016	Still in use	Monitoring Well/Gauging	852.07	852.20	15.10	8	2	15.25	836.8	5.00	15.00	5.0	15.0	847.1	837.1	10.00
MW-30	Geoprobe 3230 DT HSA	MW-10470	1/6/2016	Still in use	Monitoring Well/Gauging	841.21	841.28	14.69	8	2	15.25	826.0	5.00	15.00	5.0	15.0	836.2	826.2	10.00
MW-31	CME 550 HSA	MW-10578	4/19/2016	Still in use	Monitoring Well/Gauging	842.26	845.04	28.20	8	2	25.00	817.3	13.20	28.20	10.0	25.0	832.3	817.3	15.00
MW-31B	CME 550 HSA / Schramm	MW-10578	4/22/2016	Still in use	Monitoring Well/Gauging	842.01	844.94	79.25	10	6	76.00	766.0	68.25	79.25	65.0	76.0	777.0	766.0	11.00
MW-32	CME 550 HSA	MW-10578	4/19/2016	Still in use	Monitoring Well/Gauging	839.81	842.93	29.09	8	2	26.00	813.8	13.09	28.09	10.0	25.0	829.8	814.8	15.00
MW-33	CME 550 HSA	MW-10578	4/15/2016	Still in use	Monitoring Well/Gauging	846.20	849.20	28.30	8	2	27.00	819.2	11.30	26.30	10.0	25.0	836.2	821.2	15.00
MW-33T	CME 550 HSA/Air Rotary	MW-10578	4/14/2016	Still in use	Monitoring Well/Gauging	846.15	849.11	100.35	8	2	96.50	749.7	87.85	97.85	84.0	94.0	762.2	752.2	10.00
MW-34	Hand Auger	MW-10994	3/16/2017	Still in use	Monitoring Well/Gauging	813.99	816.35	7.86	4	2	5.00	809.0	5.36	7.86	2.5	5.0	811.5	809.0	2.50
MW-35	CME 550 HSA	MW-10578	4/20/2016	Still in use	Monitoring Well/Gauging	826.22	829.40	28.42	8	2	26.00	800.2	12.42	27.42	10.0	25.0	816.2	801.2	15.00
MW-36	CME 550 HSA	MW-10578	4/22/2016	Still in use	Monitoring Well/Gauging	858.66	858.47	23.65	8	2	24.50	834.2	8.65	23.65	9.5	24.5	849.2	834.2	15.00
MW-36B	CME 550 HSA / Schramm	MW-10578	4/28/2016	Still in use	Monitoring Well/Gauging	858.49	858.15	47.54	10	6	54.90	803.6	36.64	46.64	44.0	54.0	814.5	804.5	10.00
MW-37	Geoprobe 8040 HSA	MW-10759	8/9/2016	Still in use	Monitoring Well/Gauging	810.93	813.92	18.11	6.25	2	16.00	794.9	7.11	17.11	5.0	15.0	805.9	795.9	10.00
MW-38	Geoprobe 8040 HSA	MW-10759	8/9/2016	Still in use	Monitoring Well/Gauging	810.49	813.28	11.61	6.25	2	9.10	801.4	6.41	11.41	3.9	8.9	806.6	801.6	5.00
MW-39	Geoprobe 8040 HSA	MW-10759	11/29/2016	Still in use	Monitoring Well/Gauging	816.92	819.90	13.01	6.25	2	11.00	805.9	7.01	12.01	5.0	10.0	811.9	806.9	5.00
MW-40	Geoprobe 8040 HSA	MW-10759	11/30/2016	Still in use	Monitoring Well/Gauging	814.75	817.79	13.18	6.25	2	11.00	803.8	7.18	12.18	5.0	10.0	809.8	804.8	5.00
MW-41	Geoprobe 8040 HSA	MW-10759	11/28/2016	Still in use	Monitoring Well/Gauging	816.67	819.68	13.20	6.25	2	11.00	805.7	7.20	12.20	5.0	10.0	811.7	806.7	5.00
MW-42	Geoprobe 8040 HSA	MW-10759	11/28/2016	Still in use	Monitoring Well/Gauging	817.31	820.33	13.40	6.25	2	11.00	806.3	7.40	12.40	5.0	10.0	812.3	807.3	5.00
MW-43	Mobile Drill B57	MW-10964	10/20/2017	Still in use	Monitoring Well/Gauging	815.92	818.12	10.30	8.5	2	7.50	808.42	5.30	10.30	2.5	7.5	813.42	808.42	5.00
MW-43B	Mobile Drill B57	MW-10964	10/20/2017	Still in use	Monitoring Well/Gauging	816.08	818.80	54.40	13.75	4	51.00	765.08	34.40	54.40	31.0	51.0	785.08	765.08	20.00
MW-44	Hollow Stem Auger	MW-10964	1/23/2017	Still in use	Monitoring Well/Gauging	853.82	853.67	9.82	6.25	2	10.00	843.8	4.82	9.82	5.0	10.0	848.8	843.8	5.00
MW-44B	Hollow Stem Auger/Wire Line/Air Rotary	MW-10964	1/23/2017	Still in use	Monitoring Well/Gauging	853.66	853.38	34.50	10.25	4	37.10	816.6	13.50	34.50	16.1	37.1	837.6	816.6	21.00
MW-45	Hollow Stem Auger	MW-10964	1/26/2017	Still in use	Monitoring Well/Gauging	852.39	852.47	14.42	6.25	2	14.00	838.4	4.42	14.42	4.0	14.0	848.4	838.4	10.00
MW-45B	Hollow Stem Auger/Wire Line/Air Rotary	MW-10964	1/25/2017	Still in use	Monitoring Well/Gauging	852.69	852.85	40.30	10.25	4	40.30	812.4	19.00	40.30	19.0	40.3	833.7	812.4	21.30
MW-46	Geoprobe 8040 DT	MW-11117	9/13/2017	Still in use	Monitoring Well/Gauging	842.43	845.47	17.05	8.5	2	14.00	828.4	12.05	17.05	9.0	14.0	833.4	828.4	5.00
MW-47	Geoprobe 8040 DT	MW-11117	9/14/2017	Still in use	Monitoring Well/Gauging	839.89	842.98	22.79	8.5	2	20.00	819.9	12.79	22.79	10.0	20.0	829.9	819.9	10.00
MW-48B	Mobile Drill B57	MW-11117	10/18/2017	Still in use	Monitoring Well/Gauging	829.53	832.34	94.50	13.75	4	91.00	738.5	74.50	94.50	71.0	91.0	758.5	738.5	20.00
MW-49	Geoprobe 8040 DT	MW-11117	9/14/2017	Still in use	Monitoring Well/Gauging	843.65	846.78	23.30	8.5	2	21.00	822.7	8.30	23.30	6.0	21.0	837.7	822.7	15.00
MW-50B	Mobile Drill B57	MW-11247	10/17/2017	Still in use	Monitoring Well/Gauging	847.11	850.34	109.60	13.75	4	106.00	741.1	89.60	109.60	96.0	106.0	751.1	741.1	20.00
MW-51	CME 750 HSA	MW-11508	9/5/2018	Still in use	Monitoring Well/Gauging	828.77	831.92	25.34	6.25	2	22.50	806.3	10.45	25.45	7.3	22.3	821.5	806.5	15.00
MW-52	CME 750 HSA	MW-11508	9/4/2018	Still in use	Monitoring Well/Gauging	826.72	830.09	33.43	6.25	2	28.50	798.2	16.37	31.37	13.0	28.0	813.7	798.7	15.00
MW-53	CME 750 HSA	MW-11508	8/28/2018	Still in use	Monitoring Well/Gauging	837.24	837.37	21.32	8.0	2	21.80	815.4	6.00	21.00	6.0	21.0	831.2	816.2	15.00
MW-54	CME 750 HSA	MW-11508	8/30/2018	Still in use	Monitoring Well/Gauging	840.83	840.79	25.58	8.0	2	25.20	815.6	9.80	24.80	9.8	24.8	831.0	816.0	15.00
MW-55	Geoprobe 8040 DT	MW-11667	3/13/2019	Still in use	Monitoring Well/Gauging	859.84	859.71	25.50	6.0	2	25.50	834.3	10.00	25.00	10.0	25.0	849.8	834.8	15.00
MW-56	Geoprobe 8040 DT	MW-11841	3/12/2019	Still in use	Monitoring Well/Gauging	840.71	843.94	14.30	6.0	2	14.80	825.9	7.30	17.30	4.3	14.3	836.4	826.4	10.00
MW-57	Geoprobe 8040 DT	MW-11841	3/12/2019	Still in use	Monitoring Well/Gauging	842.50	845.63	13.88	6.0	2	14.38	828.1	6.90	16.90	3.9	13.9	838.6	828.6	10.00

Table 6. Well Construction Information
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Installation Method	Permit #	Date Installed	Date Abandoned	Purpose	Ground Surface Elevation (ft amsl)	TOC Elevation (ft amsl)	Measured Depth to Bottom (ft BTOC)	Bore Hole Diameter (in)	Well Dia (in)	Well Depth (ft bgs)	Bottom of Well (ft amsl)	Top of Screen or Open Borehole Interval (ft BTOC)	Bottom of Screen or Open Borehole Interval (ft BTOC)	Top of Screen or Open Borehole Interval (ft bgs)	Bottom of Screen or Open Borehole Interval (ft bgs)	Top of Screen or Open Borehole Interval (ft amsl)	Bottom of Screen or Open Borehole Interval (ft amsl)	Length of Screen or Open Borehole Interval (ft)
Recovery Wells																			
RW-01	HSA	MW-09978	1/28/2015	Still in use	Gauging/LNAPL Recovery	849.49	851.92	20.80	6.25	4	17	832.5	4.44	19.44	2.0	17.0	847.5	832.5	15.00
RW-02	HSA	MW-09978	1/29/2015	Still in use	Gauging/LNAPL Recovery	850.22	852.69	25.72	6.25	4	23	827.2	15.47	25.47	13.0	23.0	837.2	827.2	10.00
RW-03	HSA	MW-09978	1/29/2015	Still in use	Gauging/LNAPL Recovery	850.03	852.34	33.39	6.25	4	31.2	818.8	18.51	33.51	16.2	31.2	833.8	818.8	15.00
RW-04	HSA	MW-09978	1/29/2015	Still in use	Gauging/LNAPL Recovery	852.15	853.93	35.04	6.25	4	33	819.2	14.78	34.78	13.0	33.0	839.2	819.2	20.00
RW-05	HSA	MW-09978	1/30/2015	Still in use	Gauging/LNAPL Recovery	850.99	853.53	38.25	6.25	4	34.5	816.5	22.04	37.04	19.5	34.5	831.5	816.5	15.00
RW-06	HSA	MW-09978	1/30/2015	Still in use	Gauging/LNAPL Recovery	844.21	846.21	38.50	6.25	4	38.5	805.7	20.49	40.49	18.5	38.5	825.7	805.7	20.00
RW-07	HSA	MW-09978	2/2/2015	Still in use	Gauging/LNAPL Recovery	841.01	843.19	38.00	6.25	4	38	803.0	15.18	40.18	13.0	38.0	828.0	803.0	25.00
RW-08	HSA	MW-09978	2/2/2015	Still in use	Gauging/LNAPL Recovery	833.46	835.48	33.50	6.25	4	33.5	800.0	10.52	35.52	8.5	33.5	825.0	800.0	25.00
RW-09	HSA	MW-09978	2/3/2015	Still in use	Gauging/LNAPL Recovery	831.13	835.12	42.13	6.25	4	41.5	789.6	15.49	45.49	11.5	41.5	819.6	789.6	30.00
RW-10	HSA	MW-10006	2/4/2015	Still in use	Gauging/LNAPL Recovery	846.76	848.53	66.51	6.25	4	68.5	778.3	5.27	70.27	3.5	68.5	843.3	778.3	65.00
RW-11	HSA	MW-10006	2/4/2015	Still in use	Gauging/LNAPL Recovery	851.03	852.97	21.40	6.25	4	19.5	831.5	6.44	21.44	4.5	19.5	846.5	831.5	15.00
RW-12	HSA	MW-10006	2/5/2015	Still in use	Gauging/LNAPL Recovery	851.64	854.49	16.90	6.25	4	14	837.6	6.90	16.90	4.0	14.0	847.6	837.6	10.00
RW-13	HSA	MW-10006	2/5/2015	8/31/2018	Gauging/LNAPL Recovery	847.57	847.97	45.53	6.25	4	50	797.6	0.53	45.53	5.0	50.0	842.6	797.6	45.00
RW-14	HSA	MW-10006	2/6/2015	Still in use	Gauging/LNAPL Recovery	826.25	827.54	55.00	6.25	4	55	771.2	5.00	55.00	5.0	55.0	821.2	771.2	50.00
RW-15	HSA	MW-10006	2/10/2015	Still in use	Gauging/LNAPL Recovery	849.48	851.64	36.50	6.25	4	36.5	813.0	1.50	36.50	1.5	36.5	848.0	813.0	35.00
Recovery Sumps																			
RS-01	Trackhoe	MW-09978	12/29/2014	Still in use	Gauging/LNAPL Recovery	847.95	849.13	23.60	NA	4	22.42	825.5	3.18	23.60	2.0	22.4	845.9	825.5	20.42
RS-02	Trackhoe	MW-09978	12/29/2014	Still in use	Gauging/LNAPL Recovery	848.54	849.52	20.00	NA	4	19.02	829.5	2.98	20.00	2.0	19.0	846.5	829.5	17.02
RS-04	Trackhoe	MW-09978	12/30/2014	Still in use	Gauging/LNAPL Recovery	850.36	851.47	10.75	NA	4	9.64	840.7	3.11	10.75	2.0	9.6	848.4	840.7	7.64
RS-05	Trackhoe	MW-09978	12/31/2014	Still in use	Gauging/LNAPL Recovery	847.14	848.31	25.20	NA	4	24.03	823.1	3.17	25.20	2.0	24.0	845.1	823.1	22.03
RS-06	Trackhoe	MW-09978	12/31/2014	Still in use	Gauging/LNAPL Recovery	848.25	849.47	25.18	NA	4	23.96	824.3	3.22	25.18	2.0	24.0	846.2	824.3	21.96
RS-07	Trackhoe	MW-09978	12/31/2014	Still in use	Gauging/LNAPL Recovery	854.06	855.08	16.65	NA	4	15.63	838.4	3.02	16.65	2.0	15.6	852.1	838.4	13.63
RS-08	Trackhoe	MW-09978	12/31/2014	Still in use	Gauging/LNAPL Recovery	852.65	854.24	20.22	NA	4	18.63	834.0	3.59	20.22	2.0	18.6	850.7	834.0	16.63
RS-09	Trackhoe	MW-09978	1/7/2015	Still in use	Gauging/LNAPL Recovery	846.75	847.60	18.85	NA	4	18.00	828.8	2.85	18.85	2.0	18.0	844.8	828.8	16.00
RS-10	Trackhoe	MW-09978	1/7/2015	Still in use	Gauging/LNAPL Recovery	846.28	847.42	20.06	NA	4	18.92	827.4	3.14	20.06	2.0	18.9	844.3	827.4	16.92
RS-11	Trackhoe	MW-09978	1/7/2015	Still in use	Gauging/LNAPL Recovery	846.35	847.44	22.06	NA	4	20.97	825.4	3.09	22.06	2.0	21.0	844.3	825.4	18.97
RS-12	Trackhoe	MW-09978	1/7/2015	Still in use	Gauging/LNAPL Recovery	846.58	847.74	21.29	NA	4	20.13	826.5	3.16	21.29	2.0	20.1	844.6	826.5	18.13
RS-13	Trackhoe	MW-09978	1/8/2015	Still in use	Gauging/LNAPL Recovery	845.39	845.98	19.92	NA	4	19.33	826.1	1.96	19.92	1.4	19.3	844.0	826.1	17.96
RS-14	Trackhoe	MW-09978	1/8/2015	Still in use	Gauging/LNAPL Recovery	844.66	845.97	19.93	NA	4	18.62	826.0	3.31	19.93	2.0	18.6	842.7	826.0	16.62
RS-15	Trackhoe	MW-09978	1/8/2015	Still in use	Gauging/LNAPL Recovery	845.36	846.41	19.93	NA	4	18.88	826.5	3.05	19.93	2.0	18.9	843.4	826.5	16.88
RS-16	Trackhoe	MW-09978	1/8/2015	Still in use	Gauging/LNAPL Recovery	844.56	845.44	19.98	NA	4	19.10	825.5	2.88	19.98	2.0	19.1	842.6	825.5	17.10
RS-17	Trackhoe	MW-09978	1/8/2015	Still in use	Gauging/LNAPL Recovery	843.29	844.22	19.91	NA	4	18.98	824.3	2.93	19.91	2.0	19.0	841.3	824.3	16.98
RS-18	Trackhoe	MW-09978	1/8/2015	Still in use	Gauging/LNAPL Recovery	846.82	847.89	19.98	NA	4	18.91	827.9	3.07	19.98	2.0	18.9	844.8	827.9	16.91
RS-20	Trackhoe	MW-09978	3/19/2015	Still in use	Gauging/LNAPL Recovery	841.73	842.69	11.84	NA	4	9.91	831.8	3.93	11.84	2.0	9.9	839.7	831.8	7.91
Recovery Trench Sumps																			
RT-1A	Trackhoe	MW-09978	1/6/2015	Still in use	Gauging/LNAPL Recovery	852.86	854.06	20.89	NA	4	20.00	832.9	3.20	21.20	2.0	20.0	850.9	832.9	18.00
RT-1B	Trackhoe	MW-09978	1/6/2015	Still in use	Gauging/LNAPL Recovery	853.29	854.15	21.10	NA	4	20.00	833.3	2.86	20.86	2.0	20.0	851.3	833.3	18.00
RT-1C	Trackhoe	MW-09978	1/6/2015	Still in use	Gauging/LNAPL Recovery	853.55	854.55	21.27	NA	4	20.00	833.5	3.00	21.00	2.0	20.0	851.5	833.5	18.00
RT-2A	Trackhoe	MW-09978	1/22/2015	Still in use	Gauging/LNAPL Recovery	815.66	817.48	10.81	NA	4	10.00	805.7	3.82	11.82	2.0	10.0	813.7	805.7	8.00
RT-2B	Trackhoe	MW-09978	1/22/2015	Still in use	Gauging/LNAPL Recovery	816.72	817.61	10.82	NA	4	10.00	806.7	2.89	10.89	2.0	10.0	814.7	806.7	8.00

Table 6. Well Construction Information
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Installation Method	Permit #	Date Installed	Date Abandoned	Purpose	Ground Surface Elevation (ft amsl)	TOC Elevation (ft amsl)	Measured Depth to Bottom (ft BTOC)	Bore Hole Diameter (in)	Well Dia (in)	Well Depth (ft bgs)	Bottom of Well (ft amsl)	Top of Screen or Open Borehole Interval (ft BTOC)	Bottom of Screen or Open Borehole Interval (ft BTOC)	Top of Screen or Open Borehole Interval (ft bgs)	Bottom of Screen or Open Borehole Interval (ft bgs)	Top of Screen or Open Borehole Interval (ft amsl)	Bottom of Screen or Open Borehole Interval (ft amsl)	Length of Screen or Open Borehole Interval (ft)
RT-2C	Trackhoe	MW-09978	1/22/2015	Still in use	Gauging/LNAPL Recovery	816.86	818.06	10.23	NA	4	10.00	806.9	3.20	11.20	2.0	10.0	814.9	806.9	8.00
RT-2D	Trackhoe	MW-09978	1/22/2015	Still in use	Gauging/LNAPL Recovery	817.11	818.12	10.21	NA	4	10.00	807.1	3.01	11.01	2.0	10.0	815.1	807.1	8.00
RT-2E	Trackhoe	MW-09978	1/22/2015	Still in use	Gauging/LNAPL Recovery	817.32	818.25	10.24	NA	4	10.00	807.3	2.93	10.93	2.0	10.0	815.3	807.3	8.00
RT-2F	Trackhoe	MW-09978	1/22/2015	Still in use	Gauging/LNAPL Recovery	817.74	818.57	10.23	NA	4	10.00	807.7	2.83	10.83	2.0	10.0	815.7	807.7	8.00
RT-2G	Trackhoe	MW-09978	1/22/2015	Still in use	Gauging/LNAPL Recovery	819.27	820.07	10.24	NA	4	10.00	809.3	2.80	10.80	2.0	10.0	817.3	809.3	8.00
RT-2I	Trackhoe	MW-09978	1/22/2015	Still in use	Gauging/LNAPL Recovery	819.23	819.51	10.20	NA	4	10.00	809.2	2.28	10.28	2.0	10.0	817.2	809.2	8.00
RT-2J	Trackhoe	MW-09978	1/22/2015	Still in use	Gauging/LNAPL Recovery	817.47	817.63	10.22	NA	4	10.00	807.5	2.16	10.16	2.0	10.0	815.5	807.5	8.00
RT-2K	Trackhoe	MW-09978	3/20/2015	Still in use	Gauging/LNAPL Recovery	816.11	817.40	4.14	NA	4	2.50	813.6	2.64	4.14	1.0	2.5	815.1	813.6	1.50
RT-2L	Trackhoe	MW-09978	3/20/2015	Still in use	Gauging/LNAPL Recovery	817.95	819.54	6.60	NA	4	3.71	814.2	3.89	6.60	1.0	3.7	816.9	814.2	2.71
Piezometers																			
TW-04R	DPT	MW-10006	2/4/2015	8/30/2018	Gauging	852.68	852.64	5.46	2.2	1	5.5	847.2	2.46	5.46	2.5	5.5	850.2	847.2	3.00
TW-05R	DPT	MW-10006	2/4/2015	8/30/2018	Gauging	849.96	849.93	8.87	2.2	1	8.8	841.2	2.87	8.87	2.8	8.9	847.2	841.1	6.00
TW-14R	DPT	MW-10006	2/4/2015	8/30/2018	Gauging	853.47	853.37	6.20	2.2	1	6.5	847.0	2.20	6.20	2.5	6.3	851.0	847.2	4.00
TW-15R	DPT	MW-10006	2/4/2015	8/30/2018	Gauging	850.70	850.62	4.85	2.2	1	5	845.7	1.85	4.85	2.0	4.9	848.7	845.8	3.00
TW-21	DPT	MW-09978	1/22/2015	8/30/2018	Gauging	849.72	849.70	9.54	2.2	1	14	835.7	-0.46	9.54	4.0	9.6	845.7	840.2	10.00
TW-28	DPT	MW-09978	1/23/2015	Still in use	Gauging	851.57	851.42	31.84	2.2	1	30	821.6	11.84	31.84	10.0	32.0	841.6	819.6	20.00
TW-30	DPT	MW-09978	1/23/2015	8/30/2018	Gauging	851.86	851.81	23.15	2.2	1	24	827.9	8.15	23.15	9.0	23.2	842.9	828.7	15.00
TW-34	DPT	MW-09978	1/24/2015	8/30/2018	Gauging	854.92	854.79	25.04	2.2	1	23	831.9	10.04	25.04	8.0	25.2	846.9	829.7	15.00
TW-35	DPT	MW-09978	1/24/2015	8/30/2018	Gauging	854.22	854.10	25.12	2.2	1	23	831.2	10.12	25.12	8.0	25.2	846.2	829.0	15.00
TW-40	DPT	MW-09978	1/24/2015	8/30/2018	Gauging	853.45	853.35	34.05	2.2	1	33	820.5	14.05	34.05	13.0	34.2	840.5	819.3	20.00
TW-41	DPT	MW-09978	1/25/2015	Still in use	Gauging	849.38	849.38	32.15	2.2	1	34	815.4	7.15	32.15	9.0	32.1	840.4	817.2	25.00
TW-42	DPT	MW-09978	1/25/2015	Still in use	Gauging	847.02	846.84	27.50	2.2	1	29.5	817.5	7.50	27.50	9.5	27.7	837.5	819.3	20.00
TW-45	DPT	MW-09978	1/25/2015	Still in use	Gauging	848.26	848.31	36.86	2.2	1	37.5	810.8	11.86	36.86	12.5	36.8	835.8	811.4	25.00
TW-55	DPT	MW-10006	2/5/2015	Still in use	Gauging	846.00	845.93	41.50	2.7	1	43	803.0	11.50	41.50	13.0	41.6	833.0	804.4	30.00
TW-59	DPT	MW-09978	1/30/2015	Still in use	Gauging	834.84	834.78	21.15	2.7	1	22	812.8	6.15	21.15	7.0	21.2	827.8	813.6	15.00
TW-60	DPT	MW-09978	1/30/2015	Still in use	Gauging	828.00	828.03	37.20	2.7	1	41.5	786.5	2.20	37.20	6.5	37.2	821.5	790.8	35.00
TW-64	DPT	MW-09978	2/2/2015	Still in use	Gauging	845.89	845.88	52.85	2.2	1	55	790.9	2.85	52.85	5.0	52.9	840.9	793.0	50.00
TW-65	DPT	MW-09978	2/2/2015	8/30/2018	Gauging	845.66	845.62	44.81	2.2	1	44.5	801.2	9.81	44.81	9.5	44.8	836.2	800.8	35.00
TW-66	DPT	MW-09978	2/2/2015	Still in use	Gauging	820.18	820.31	23.81	2.7	1	24	796.2	3.81	23.81	4.0	23.7	816.2	796.5	20.00
TW-67	DPT	MW-09978	2/3/2015	Still in use	Gauging	852.88	852.71	26.47	2.7	1	27	825.9	6.47	26.47	7.0	26.6	845.9	826.2	20.00
TW-68	DPT	MW-09978	2/3/2015	8/30/2018	Gauging	846.59	846.45	29.96	2.2	1	27	819.6	9.96	29.96	7.0	30.1	839.6	816.5	20.00
TW-69	DPT	MW-09978	2/3/2015	8/30/2018	Gauging	840.38	840.27	51.91	2.2	1	50	790.4	11.91	51.91	10.0	52.0	830.4	788.4	40.00
TW-70	DPT	MW-09978	2/3/2015	8/30/2018	Gauging	842.07	841.95	45.05	2.2	1	43	799.1	10.05	45.05	8.0	45.2	834.1	796.9	35.00
TW-73	DPT	MW-09978	2/3/2015	Still in use	Gauging	850.60	850.53	16.00	2.7	1	16	834.6	6.00	16.00	6.0	16.1	844.6	834.5	10.00
TW-76	DPT	MW-10006	2/4/2015	8/30/2018	Gauging	852.53	852.44	43.62	2.7	1	43	809.5	8.62	43.62	8.0	43.7	844.5	808.8	35.00
TW-81	DPT	MW-10006	2/5/2015	8/30/2018	Gauging	849.48	849.43	7.00	2.2	1	7	842.5	2.00	7.00	2.0	7.0	847.5	842.4	5.00
TW-82	DPT	MW-10006	2/5/2015	8/30/2018	Gauging	849.83	849.64	10.00	2.2	1	10	839.8	2.00	10.00	2.0	10.2	847.8	839.6	8.00
TW-83	DPT	MW-10006	2/5/2015	8/30/2018	Gauging	850.54	850.44	17.00	2.2	1	17	833.5	2.00	17.00	2.0	17.1	848.5	833.4	15.00
TW-84	DPT	MW-10006	2/5/2015	8/30/2018	Gauging	851.38	851.22	13.50	2.2	1	13.5	837.9	3.50	13.50	3.5	13.7	847.9	837.7	10.00
TW-85	DPT	MW-10006	2/5/2015	8/31/2018	Gauging	843.64	843.49	39.00	2.7	1	39	804.6	9.00	39.00	9.0	39.2	834.6	804.5	30.00
TW-86	DPT	MW-10006	2/5/2015	8/30/2018	Gauging	853.28	853.10	6.00	2.2	1	6	847.3	2.00	6.00	2.0	6.2	851.3	847.1	4.00

Table 6. Well Construction Information
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Installation Method	Permit #	Date Installed	Date Abandoned	Purpose	Ground Surface Elevation (ft amsl)	TOC Elevation (ft amsl)	Measured Depth to Bottom (ft BTOC)	Bore Hole Diameter (in)	Well Dia (in)	Well Depth (ft bgs)	Bottom of Well (ft amsl)	Top of Screen or Open Borehole Interval (ft BTOC)	Bottom of Screen or Open Borehole Interval (ft BTOC)	Top of Screen or Open Borehole Interval (ft bgs)	Bottom of Screen or Open Borehole Interval (ft bgs)	Top of Screen or Open Borehole Interval (ft amsl)	Bottom of Screen or Open Borehole Interval (ft amsl)	Length of Screen or Open Borehole Interval (ft)
TW-87	DPT	MW-10006	2/5/2015	8/30/2018	Gauging	852.33	852.25	7.00	2.2	1	7	845.3	2.00	7.00	2.0	7.1	850.3	845.3	5.00
TW-90	DPT	MW-10006	2/6/2015	8/31/2018	Gauging	845.48	845.43	46.50	2.7	1	46.5	799.0	6.50	46.50	6.5	46.6	839.0	798.9	40.00
TW-94	DPT	MW-10006	2/10/2015	Still in use	Gauging	840.75	840.58	40.00	2.7	1	40	800.8	5.00	40.00	5.0	40.2	835.8	800.6	35.00
TW-96	DPT	MW-10006	2/11/2015	Still in use	Gauging	840.52	840.40	28.76	2.7	1	30	810.5	3.76	28.76	5.0	28.9	835.5	811.6	25.00
Vertical Air Sparging Wells																			
VAS-01	Mobile B57 HSA	SCHE03020469	7/28/2016	Still in use	Cupboard Creek Protection	853.269	NS	NA	8.50	2.00	32.20	NA	NA	NA	28.70	31.20	NA	NA	2.50
VAS-02	Mobile B57 HSA	SCHE03020469	7/27/2016	Still in use	Cupboard Creek Protection	852.360	NS	NA	8.50	2.00	27.00	NA	NA	NA	23.50	26.00	NA	NA	2.50
VAS-03	Mobile B57 HSA	SCHE03020469	7/27/2016	Still in use	Cupboard Creek Protection	852.132	NS	NA	8.50	2.00	18.30	NA	NA	NA	14.80	17.30	NA	NA	2.50
VAS-04	Geoprobe 8040 HSA	SCHE03020469	8/4/2016	Still in use	Cupboard Creek Protection	852.056	NS	NA	8.50	2.00	16.70	NA	NA	NA	13.20	15.70	NA	NA	2.50
VAS-05	Mobile B57 HSA	SCHE03020469	7/27/2016	Still in use	Cupboard Creek Protection	851.559	NS	NA	8.50	2.00	13.00	NA	NA	NA	9.50	12.00	NA	NA	2.50
VAS-06	Mobile B57 HSA	SCHE03020469	7/26/2016	Still in use	Cupboard Creek Protection	851.612	NS	NA	8.50	2.00	14.40	NA	NA	NA	10.90	13.40	NA	NA	2.50
VAS-07	Mobile B57 HSA	SCHE03020469	7/26/2016	Still in use	Cupboard Creek Protection	851.603	NS	NA	8.50	2.00	19.40	NA	NA	NA	15.90	18.40	NA	NA	2.50
VAS-08	Mobile B57 HSA	SCHE03020469	7/25/2016	Still in use	Cupboard Creek Protection	851.583	NS	NA	8.50	2.00	22.00	NA	NA	NA	18.50	21.00	NA	NA	2.50
VAS-09	Mobile B57 HSA	SCHE03020469	7/25/2016	Still in use	Cupboard Creek Protection	851.607	NS	NA	8.50	2.00	14.00	NA	NA	NA	10.50	13.00	NA	NA	2.50
VAS-10	Mobile B57 HSA	SCHE03020469	7/25/2016	Still in use	Cupboard Creek Protection	851.411	NS	NA	8.50	2.00	16.10	NA	NA	NA	12.60	15.10	NA	NA	2.50
VAS-11	Mobile B57 HSA	SCHE03020469	7/28/2016	Still in use	Cupboard Creek Protection	852.476	NS	NA	8.50	2.00	25.30	NA	NA	NA	21.80	24.30	NA	NA	2.50
VAS-12	Geoprobe 8040 HSA	SCHE03020469	8/5/2016	Still in use	Cupboard Creek Protection	851.535	NS	NA	8.50	2.00	24.20	NA	NA	NA	20.70	23.20	NA	NA	2.50
VAS-13	Geoprobe 8040 HSA	SCHE03020469	8/5/2016	Still in use	Cupboard Creek Protection	851.701	NS	NA	8.50	2.00	19.60	NA	NA	NA	16.10	18.60	NA	NA	2.50
VAS-14	Geoprobe 8040 HSA	SCHE03020469	8/4/2016	Still in use	Cupboard Creek Protection	851.239	NS	NA	8.50	2.00	16.20	NA	NA	NA	12.70	15.20	NA	NA	2.50
VAS-15	Geoprobe 8040 HSA	SCHE03020469	8/4/2016	Still in use	Cupboard Creek Protection	850.732	NS	NA	8.50	2.00	15.50	NA	NA	NA	12.00	14.50	NA	NA	2.50
VAS-16	Geoprobe 8040 HSA	SCHE03020469	8/3/2016	Still in use	Cupboard Creek Protection	850.305	NS	NA	8.50	2.00	17.90	NA	NA	NA	14.40	16.90	NA	NA	2.50
VAS-17	Geoprobe 8040 HSA	SCHE03020469	8/3/2016	Still in use	Cupboard Creek Protection	849.842	NS	NA	8.50	2.00	19.30	NA	NA	NA	15.80	18.30	NA	NA	2.50
VAS-18	Geoprobe 8040 HSA	SCHE03020469	8/8/2016	Still in use	Cupboard Creek Protection	849.513	NS	NA	8.50	2.00	16.50	NA	NA	NA	13.00	15.50	NA	NA	2.50
VAS-19	Mobile B57 HSA	SCHE03020469	7/26/2016	Still in use	Cupboard Creek Protection	850.465	NS	NA	8.50	2.00	17.20	NA	NA	NA	13.60	16.10	NA	NA	2.50
VAS-20	Mobile B57 HSA	SCHE03020469	7/19/2016	Still in use	Brown's Creek Protection	827.789	NS	NA	8.50	2.00	47.60	NA	NA	NA	44.60	47.10	NA	NA	2.50
VAS-21	Mobile B57 HSA	SCHE03020469	7/19/2016	Still in use	Brown's Creek Protection	826.304	NS	NA	8.50	2.00	53.50	NA	NA	NA	50.00	52.50	NA	NA	2.50
VAS-22	Mobile B57 HSA	SCHE03020469	7/21/2016	Still in use	Brown's Creek Protection	827.394	NS	NA	8.50	2.00	57.00	NA	NA	NA	53.50	56.00	NA	NA	2.50
VAS-23	Mobile B57 HSA	SCHE03020469	7/22/2016	Still in use	Brown's Creek Protection	827.211	NS	NA	8.50	2.00	49.50	NA	NA	NA	46.00	48.50	NA	NA	2.50
VAS-24	Mobile B57 HSA	SCHE03020469	7/5/2016	Still in use	Brown's Creek Protection	826.803	NS	NA	8.50	2.00	58.50	NA	NA	NA	55.00	57.50	NA	NA	2.50
VAS-25	Mobile B57 HSA	SCHE03020469	7/11/2016	Still in use	Brown's Creek Protection	826.411	NS	NA	8.50	2.00	54.00	NA	NA	NA	50.50	53.00	NA	NA	2.50
VAS-26	Mobile B57 HSA	SCHE03020469	7/11/2016	Still in use	Brown's Creek Protection	825.180	NS	NA	8.50	2.00	55.00	NA	NA	NA	51.50	54.00	NA	NA	2.50
VAS-27	Mobile B57 HSA	SCHE03020469	7/8/2016	Still in use	Brown's Creek Protection	826.369	NS	NA	8.50	2.00	54.00	NA	NA	NA	50.50	53.00	NA	NA	2.50
VAS-28	Mobile B57 HSA	SCHE03020469	7/6/2016	Still in use	Brown's Creek Protection	828.930	NS	NA	8.50	2.00	23.10	NA	NA	NA	19.80	22.30	NA	NA	2.50
VAS-29	Mobile B57 HSA	SCHE03020469	7/6/2016	Still in use	Brown's Creek Protection	832.025	NS	NA	8.50	2.00	27.50	NA	NA	NA	24.00	26.50	NA	NA	2.50
VAS-30	Mobile B57 HSA	SCHE03020469	6/21/2016	Still in use	Brown's Creek Protection	831.485	NS	NA	8.50	2.00	52.90	NA	NA	NA	49.40	51.90	NA	NA	2.50
VAS-31	Mobile B57 HSA	SCHE03020469	6/21/2016	Still in use	Brown's Creek Protection	828.337	NS	NA	8.50	2.00	42.00	NA	NA	NA	38.50	41.00	NA	NA	2.50
VAS-32	Mobile B57 HSA	SCHE03020469	6/30/2016	Still in use	Brown's Creek Protection	836.257	NS	NA	8.50	2.00	43.00	NA	NA	NA	39.50	42.00	NA	NA	2.50
VAS-33	Mobile B57 HSA	SCHE03020469	6/29/2016	Still in use	Brown's Creek Protection	840.900	NS	NA	8.50	2.00	52.60	NA	NA	NA	49.10	51.60	NA	NA	2.50
VAS-34	Mobile B57 HSA	SCHE03020469	7/13/2016	Still in use	Brown's Creek Protection	836.585	NS	NA	8.50	2.00	53.50	NA	NA	NA	50.00	52.50	NA	NA	2.50
VAS-35	Mobile B57 HSA	SCHE03020469	7/13/2016	Still in use	Brown's Creek Protection	831.212	NS	NA	8.50	2.00	40.00	NA	NA	NA	36.50	39.00	NA	NA	2.50
VAS-36	Mobile B57 HSA	SCHE03020469	7/7/2016	Still in use	Brown's Creek Protection	831.361	NS	NA	8.50	2.00	33.20	NA	NA	NA	29.70	32.20	NA	NA	2.50

Table 6. Well Construction Information
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Installation Method	Permit #	Date Installed	Date Abandoned	Purpose	Ground Surface Elevation (ft amsl)	TOC Elevation (ft amsl)	Measured Depth to Bottom (ft BTOC)	Bore Hole Diameter (in)	Well Dia (in)	Well Depth (ft bgs)	Bottom of Well (ft amsl)	Top of Screen or Open Borehole Interval (ft BTOC)	Bottom of Screen or Open Borehole Interval (ft BTOC)	Top of Screen or Open Borehole Interval (ft bgs)	Bottom of Screen or Open Borehole Interval (ft bgs)	Top of Screen or Open Borehole Interval (ft amsl)	Bottom of Screen or Open Borehole Interval (ft amsl)	Length of Screen or Open Borehole Interval (ft)
VAS-37	Mobile B57 HSA	SCHE03020469	7/7/2016	Still in use	Brown's Creek Protection	832.454	NS	NA	8.50	2.00	16.50	NA	NA	NA	13.00	15.50	NA	NA	2.50
VAS-38	Mobile B57 HSA	SCHE03020469	7/6/2016	Still in use	Brown's Creek Protection	834.566	NS	NA	8.50	2.00	21.10	NA	NA	NA	16.60	19.10	NA	NA	2.50
VAS-39	Mobile B57 HSA	SCHE03020469	6/22/2016	Still in use	Brown's Creek Protection	835.956	NS	NA	8.50	2.00	42.40	NA	NA	NA	38.90	41.40	NA	NA	2.50
VAS-40	Mobile B57 HSA	SCHE03020469	6/23/2016	Still in use	Brown's Creek Protection	833.753	NS	NA	8.50	2.00	40.00	NA	NA	NA	36.50	39.00	NA	NA	2.50
VAS-41	Mobile B57 HSA	SCHE03020469	6/28/2016	Still in use	Brown's Creek Protection	845.071	NS	NA	8.50	2.00	27.80	NA	NA	NA	24.30	26.80	NA	NA	2.50
VAS-42A	Mobile B57 HSA	SCHE03020469	7/14/2016	Still in use	Brown's Creek Protection	845.304	NS	NA	8.50	2.00	39.30	NA	NA	NA	35.80	38.30	NA	NA	2.50
VAS-43A	Mobile B57 HSA	SCHE03020469	7/15/2016	Still in use	Brown's Creek Protection	843.078	NS	NA	8.50	2.00	66.50	NA	NA	NA	63.00	65.50	NA	NA	2.50
VAS-44A	Mobile B57 HSA	SCHE03020469	7/18/2016	Still in use	Brown's Creek Protection	838.353	NS	NA	8.50	2.00	72.50	NA	NA	NA	69.00	71.50	NA	NA	2.50
VAS-46	Mobile B57 HSA	SCHE03020469	6/24/2016	Still in use	Brown's Creek Protection	839.503	NS	NA	8.50	2.00	20.80	NA	NA	NA	18.00	20.50	NA	NA	2.50
VAS-47	CME-750	SCHE03020469M2	8/27/2018	Still in use	Brown's Creek Protection	848.370	NS	NA	8.00	2.00	33.20	NA	NA	NA	30.20	32.20	NA	NA	2.00
VAS-48	CME-750	SCHE03020469M2	8/16/2018	Still in use	Brown's Creek Protection	846.580	NS	NA	8.00	2.00	35.70	NA	NA	NA	32.70	34.70	NA	NA	2.00
VAS-49	CME-750	SCHE03020469M2	8/28/2018	Still in use	Brown's Creek Protection	849.730	NS	NA	8.00	2.00	33.70	NA	NA	NA	30.70	32.70	NA	NA	2.00
VAS-50	CME-750	SCHE03020469M2	8/16/2018	Still in use	Brown's Creek Protection	850.110	NS	NA	8.00	2.00	27.80	NA	NA	NA	24.80	26.80	NA	NA	2.00
VAS-51	CME-750	SCHE03020469M2	8/15/2018	Still in use	Brown's Creek Protection	851.900	NS	NA	8.00	2.00	30.00	NA	NA	NA	27.00	29.00	NA	NA	2.00
VAS-52	CME-750	SCHE03020469M2	8/14/2018	Still in use	Brown's Creek Protection	851.970	NS	NA	8.00	2.00	34.50	NA	NA	NA	31.50	33.50	NA	NA	2.00
VAS-53	CME-750	SCHE03020469M2	8/14/2018	Still in use	Brown's Creek Protection	852.880	NS	NA	8.00	2.00	26.70	NA	NA	NA	23.70	25.70	NA	NA	2.00
VAS-54	Geoprobe 8040 HSA	SCHE03020469M2	8/13/2018	Still in use	Brown's Creek Protection	852.770	NS	NA	4.25	2.00	19.20	NA	NA	NA	16.20	18.20	NA	NA	2.00
VAS-55	CME-750	SCHE03020469M2	9/7/2018	Still in use	Cupboard Creek Protection	854.710	NS	NA	6.25	2.00	28.90	NA	NA	NA	25.90	27.90	NA	NA	2.00
VAS-56	CME-750	SCHE03020469M2	9/7/2018	Still in use	Cupboard Creek Protection	855.730	NS	NA	6.25	2.00	28.20	NA	NA	NA	25.20	27.20	NA	NA	2.00
VAS-57	CME-750	SCHE03020469M2	9/5/2018	Still in use	Cupboard Creek Protection	856.620	NS	NA	6.25	2.00	31.50	NA	NA	NA	28.50	30.50	NA	NA	2.00
VAS-58	CME-750	SCHE03020469M2	9/5/2018	Still in use	Cupboard Creek Protection	855.980	NS	NA	6.25	2.00	31.30	NA	NA	NA	28.30	30.30	NA	NA	2.00
VAS-59	CME-750	SCHE03020469M2	9/6/2018	Still in use	Cupboard Creek Protection	854.740	NS	NA	6.25	2.00	8.80	NA	NA	NA	6.80	8.80	NA	NA	2.00
Vertical Bedrock Sparging Wells																			
VBS-01	Hollow Stem Auger/Wire Line/Air Rotary	SCHE03020469M	1/28/2017	Still in use	Brown's Creek Protection	NS	NS	38.15	4.00	2.00	38.50	NA	NA	NA	34.50	36.50	NA	NA	2.00
VBS-02	Hollow Stem Auger/Wire Line/Air Rotary	SCHE03020469M	1/28/2017	Still in use	Brown's Creek Protection	NS	NS	31.05	4.00	2.00	31.00	NA	NA	NA	27.00	29.00	NA	NA	2.00
VBS-03	Hollow Stem Auger/Wire Line/Air Rotary	SCHE03020469M	1/27/2017	Still in use	Brown's Creek Protection	NS	NS	36.20	4.00	2.00	36.20	NA	NA	NA	32.20	34.20	NA	NA	2.00

Notes:
amsl = above mean sea level relative to North American Vertical Datum of 1988 (NAVD88). Benchmark is 34.8289659 degrees north, 82.3710354 degrees west (NAD83, 2011), elevation 929.1 ft NAVD88.

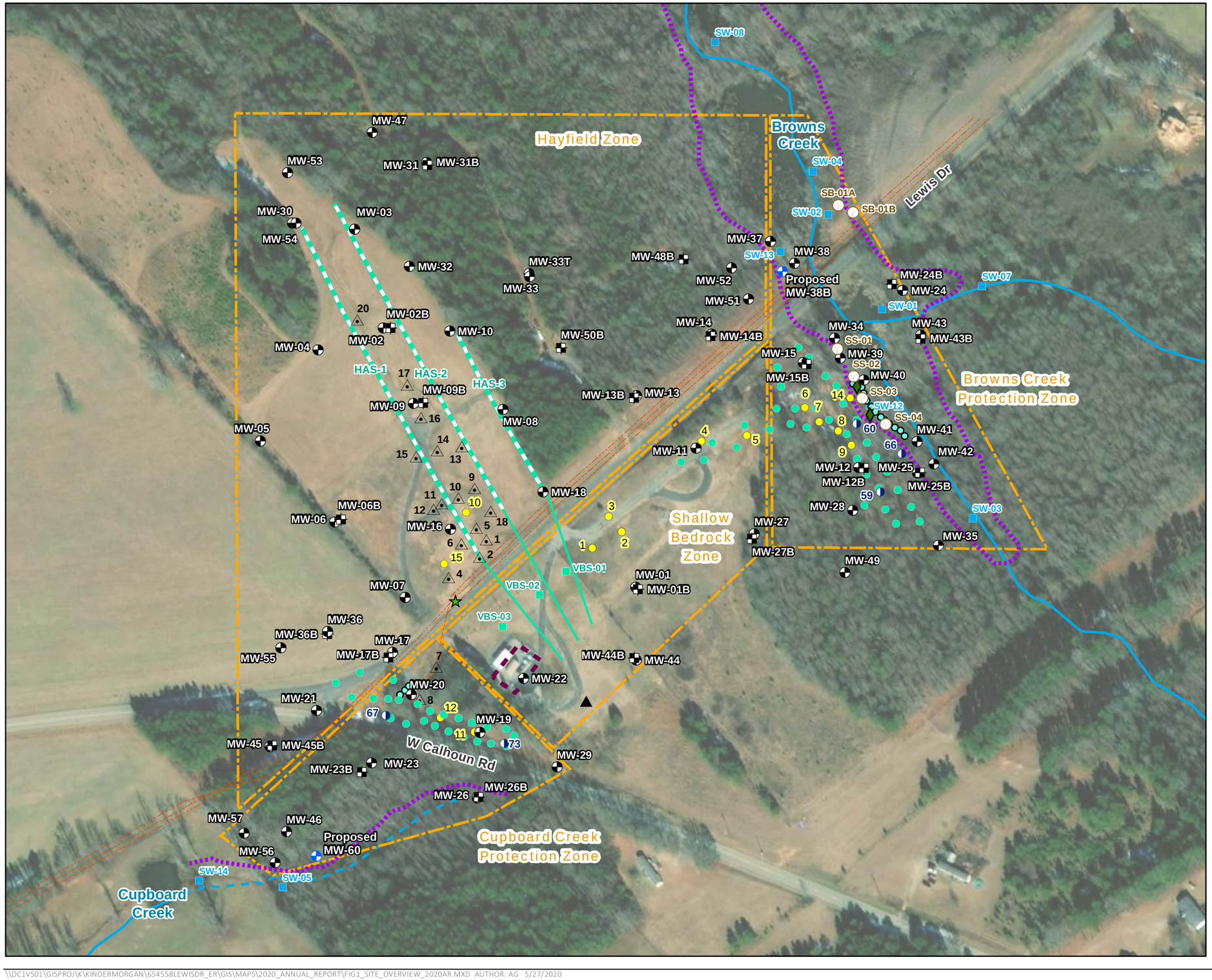
bgs = below ground surface
BTOC = below top of casing
DPT = direct push
ft = feet
HSA = hollow-stem auger
in = inches
NA = not applicable
NS = location not surveyed
RNE = Refusal not encountered
TOC = top of casing
ID = identification
RS = recovery sump
RT = recovery trench
RW = recovery well
TW = temporary well
MW = monitoring well
VAS = vertical air sparging well
VBS = vertical bedrock sparging well

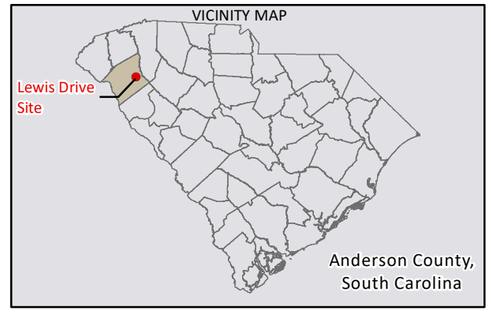
Table 7. Stream Gauge Construction Information
Plantation Pipe Line Company
Lewis Drive Remediation Site, Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Location ID	Installation Method	Date Installed	Stream Bottom Elevation (ft amsl)	Elevation of Zero Mark (ft amsl)
SW-01	Manual	3/29/2016	812.39	812.82
SW-02	Manual	3/29/2016	808.36	808.65
SW-03	Manual	3/29/2016	815.05	815.09
SW-05	Manual	3/29/2016	838.69	838.75
SW-08	Manual	3/29/2016	802.14	802.04
SW-10	Manual	3/29/2016	776.62	778.09
SW-14	Manual	7/18/2017	837.13	NS

Notes:
amsl = above mean sea level relative to North American Vertical Datum of 1988 (NAVD88). Benchmark is 34.8289659 degrees north, 82.3710354 degrees west (NAD83, 2011), elevation 929.1 ft NAVD88.
ft = feet
ID = identification
NS = location not surveyed
SW = surface water

Figures





LEGEND

- Release Point
- Residuum Monitoring Well
- Bedrock Monitoring Well
- Proposed Monitoring Well
- Piezometer
- Recovery Sump
- Soil Boring Location
- Recovery Trench Point
- Recovery Well (4-inch diameter)
- Surface Water Sampling Location
- Septic Tank
- Seep Location
- Vertical Bedrock Sparging Well
- Vertical Saprolite Sparging Well
- Pipeline
- Horizontal Sparging Well Riser
- Horizontal Sparging Well Screen
- Waterbody
- Intermittent Stream
- Inspection Route for Sheen or Distressed Vegetation
- AS System Compound
- Remediation Zone

Base Map Sources:
*Environmental Systems Research Institute (Esri) ArcMap World Imagery, 2018. Basemap features are approximate.
*United States Geological Survey (USGS) National Hydrography Dataset (NHD)

N

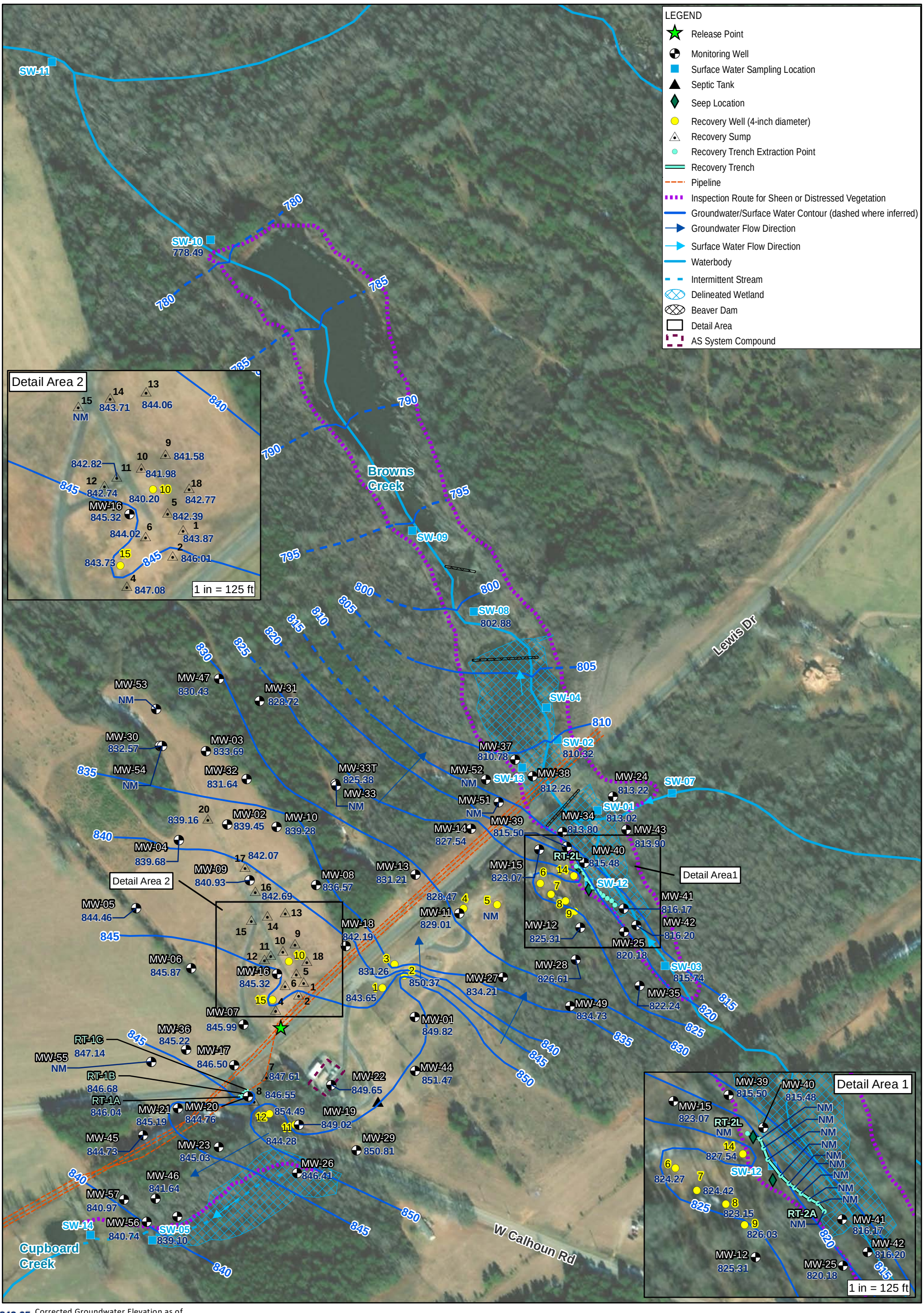
0 200 400

Scale in feet

Figure 1. Site Overview
Lewis Drive Remediation Site
Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Jacobs

\\DC1VS01\GISPROJ\K\KINDERMORGAN\654558LEWISDR_ER\GIS\MAPS\2020_ANNUAL_REPORT\FIG1_SITE_OVERVIEW_2020AR.MXD AUTHOR: AG 5/27/2020



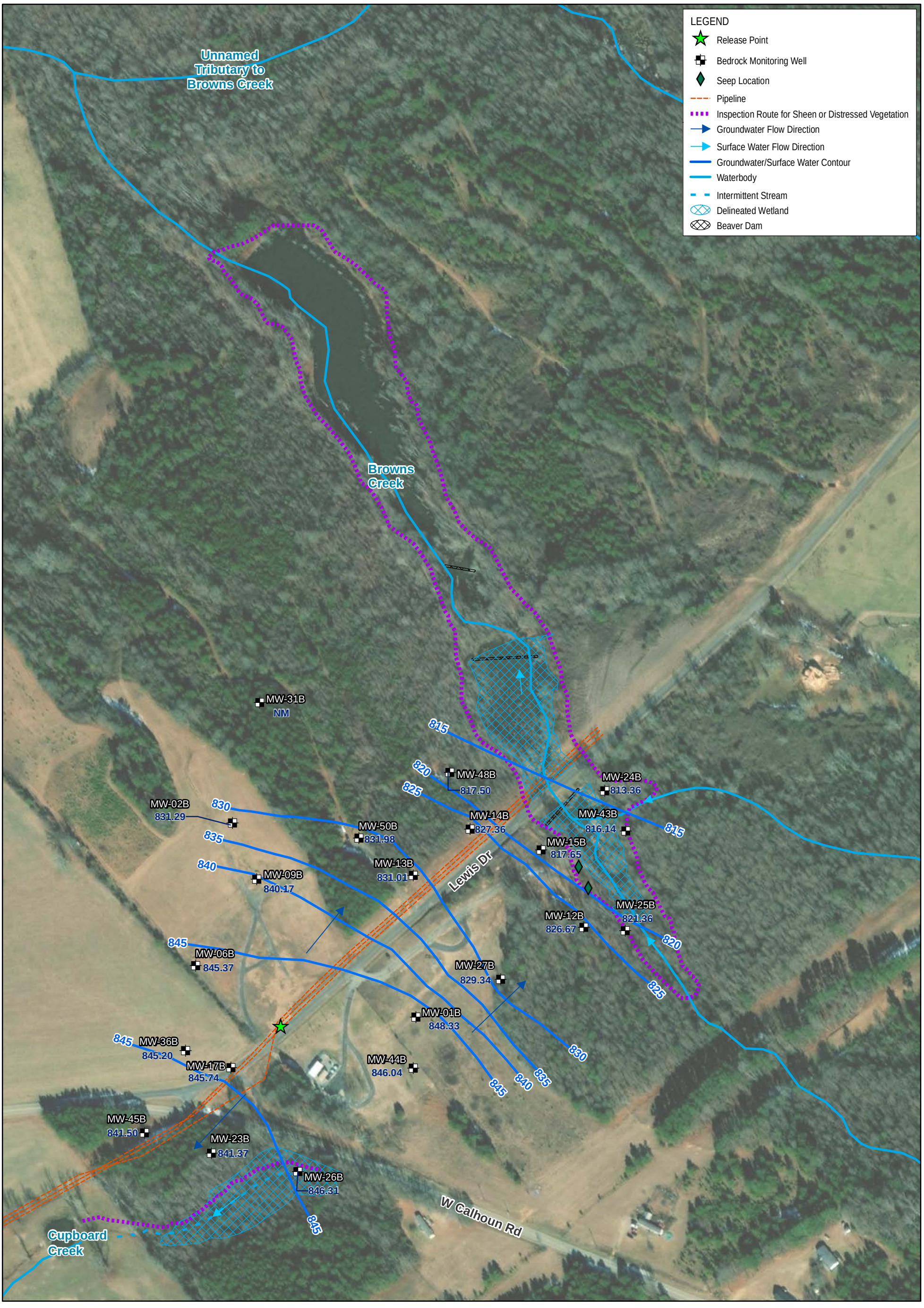
843.65 Corrected Groundwater Elevation as of 3/9/2020 in feet above mean sea level

NM Not measured during this sampling event

Figure 2A. Residuum Groundwater and Surface Water Elevation Map
Lewis Drive Remediation Site
Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Jacobs

\\DC1VS01\GISPROJ\K\KINDERMORGAN\654558LEWISDR_ER\GIS\MAPS\2020_ANNUAL_REPORT\FIG2A_RESIDUUM_GW_ELEV_2020AR.MXD AG017958 5/27/2020



831.98 Corrected Groundwater Elevation as of 3/9/2020 in feet above mean sea level

NM Not measured during this sampling event

Base Map Sources:
*Environmental Systems Research Institute (Esri) ArcMap World Imagery, 2018. Basemap features are approximate.
*United States Geological Survey (USGS) National Hydrography Dataset (NHD)

Figure 2B. Bedrock Groundwater Elevation Map
Lewis Drive Remediation Site
Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Jacobs

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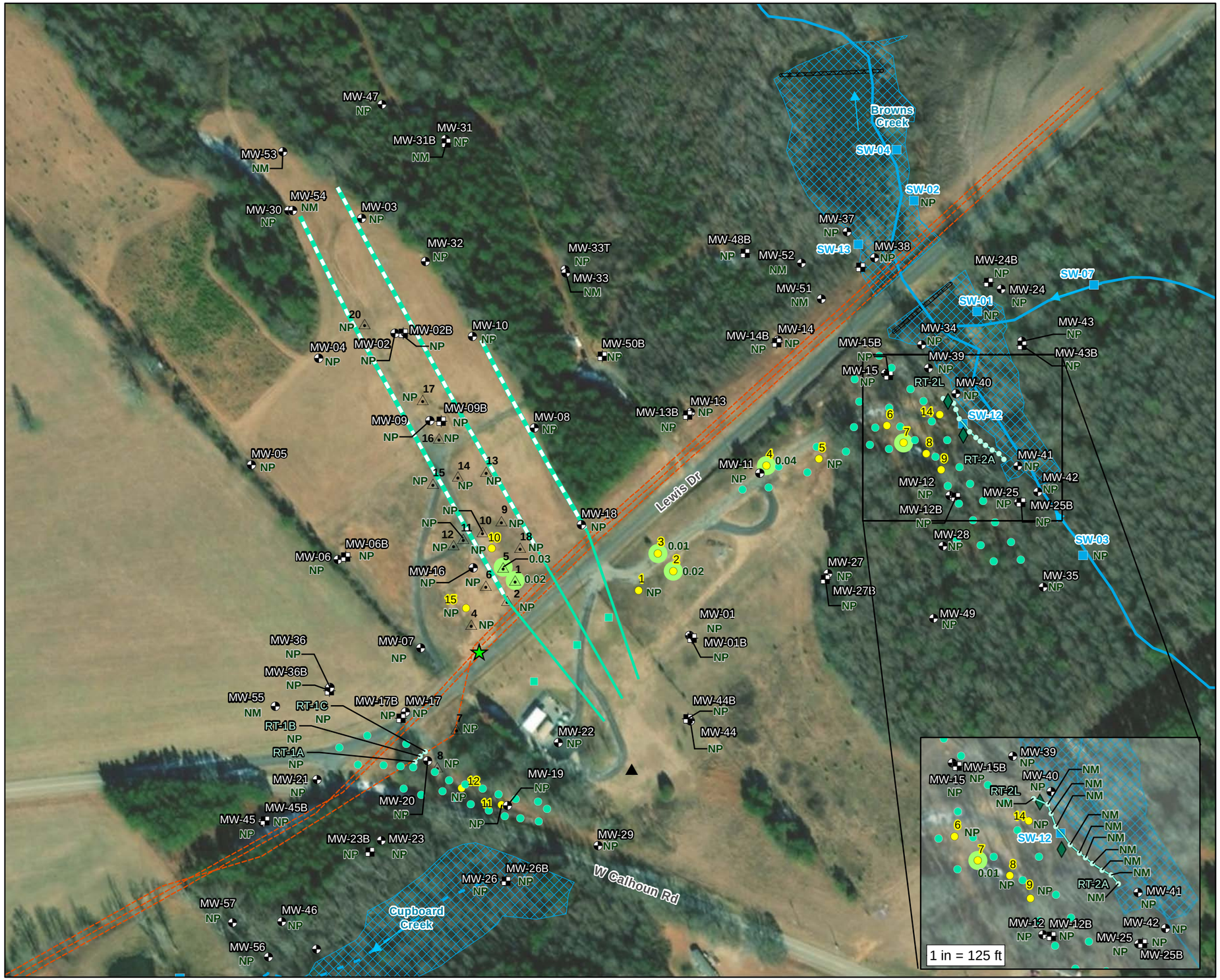


LEGEND

- Release Point
- Monitoring Well
- Bedrock Monitoring Well
- Seep Location
- Recovery Sump
- Recovery Well (4-inch diameter)
- Well Contains Product as of 3/9/2020
- Vertical Bedrock Sparging Well
- Vertical Saprolite Sparging Well
- Surface Water Sampling Location
- Septic Tank
- Recovery Trench Extraction Point
- Recovery Trench
- Surface Water Flow Direction
- Horizontal Sparging Well Riser
- Horizontal Sparging Well Screen
- Pipeline
- Waterbody
- Intermittent Stream
- Delineated Wetland
- Beaver Dam
- Detail Area

0.02 Product thickness in feet as of 3/9/2020
NP No product detected
NM Not measured

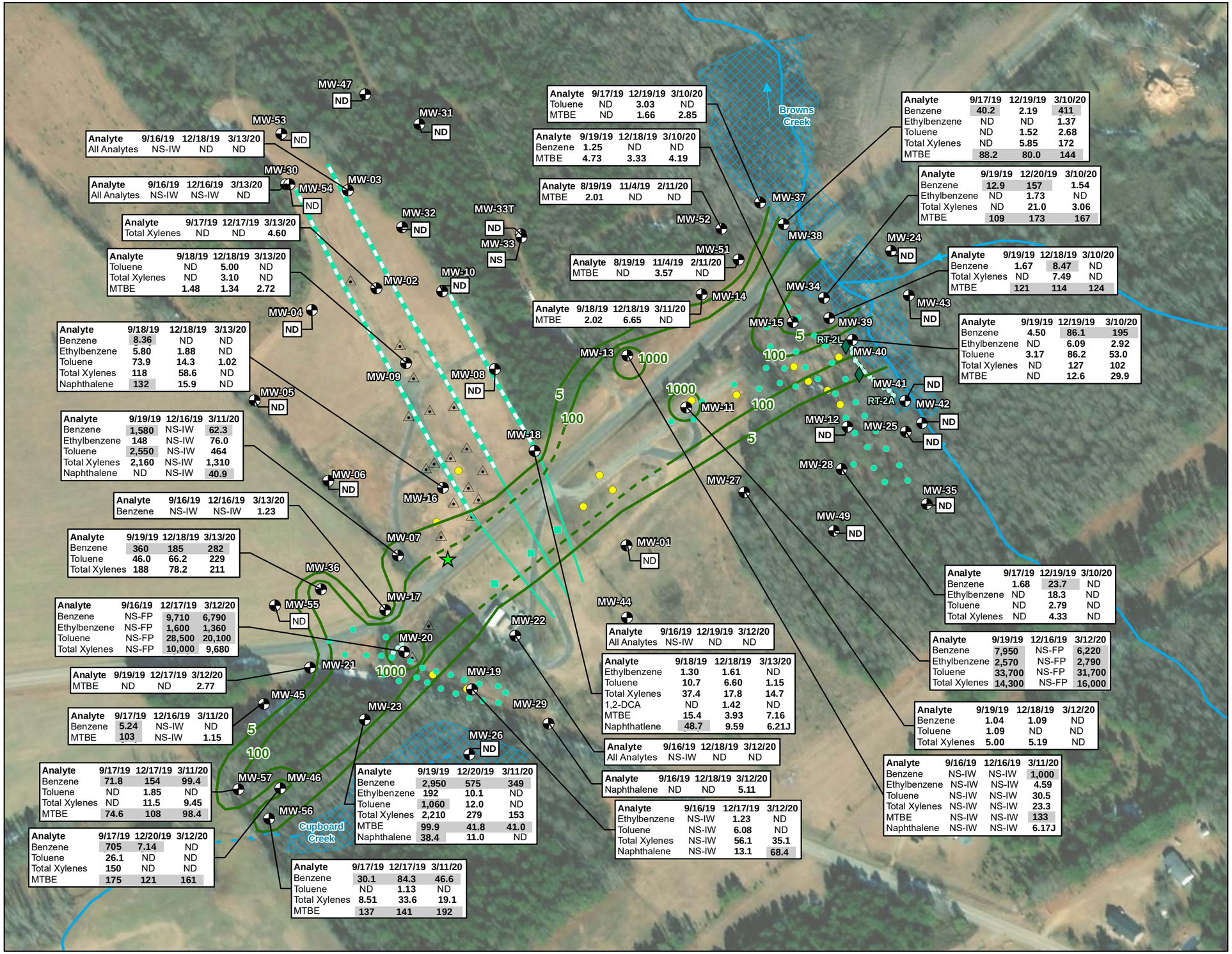
Base Map Sources:
*Environmental Systems Research Institute (Esri) ArcMap World Imagery, 2018. Basemap features are approximate.
*United States Geological Survey (USGS) National Hydrography Dataset (NHD)

N

0 175 350
Scale in Feet

Figure 3. Site Features with Measurable Product
Lewis Drive Remediation Site
Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Jacobs



LEGEND

- Release Point
- Residuum Monitoring Well
- Vertical Bedrock Sparging Well
- Vertical Saprolite Sparging Well
- Seep Location
- Recovery Well (4-inch diameter)
- Recovery Sump
- Recovery Trench Point
- Recovery Trench
- Surface Water Flow Direction
- Dissolved Benzene Plume Extent as of March 2020 (µg/L) (dashed where inferred)
- Waterbody
- Intermittent Stream
- Delineated Wetland

NOTES:

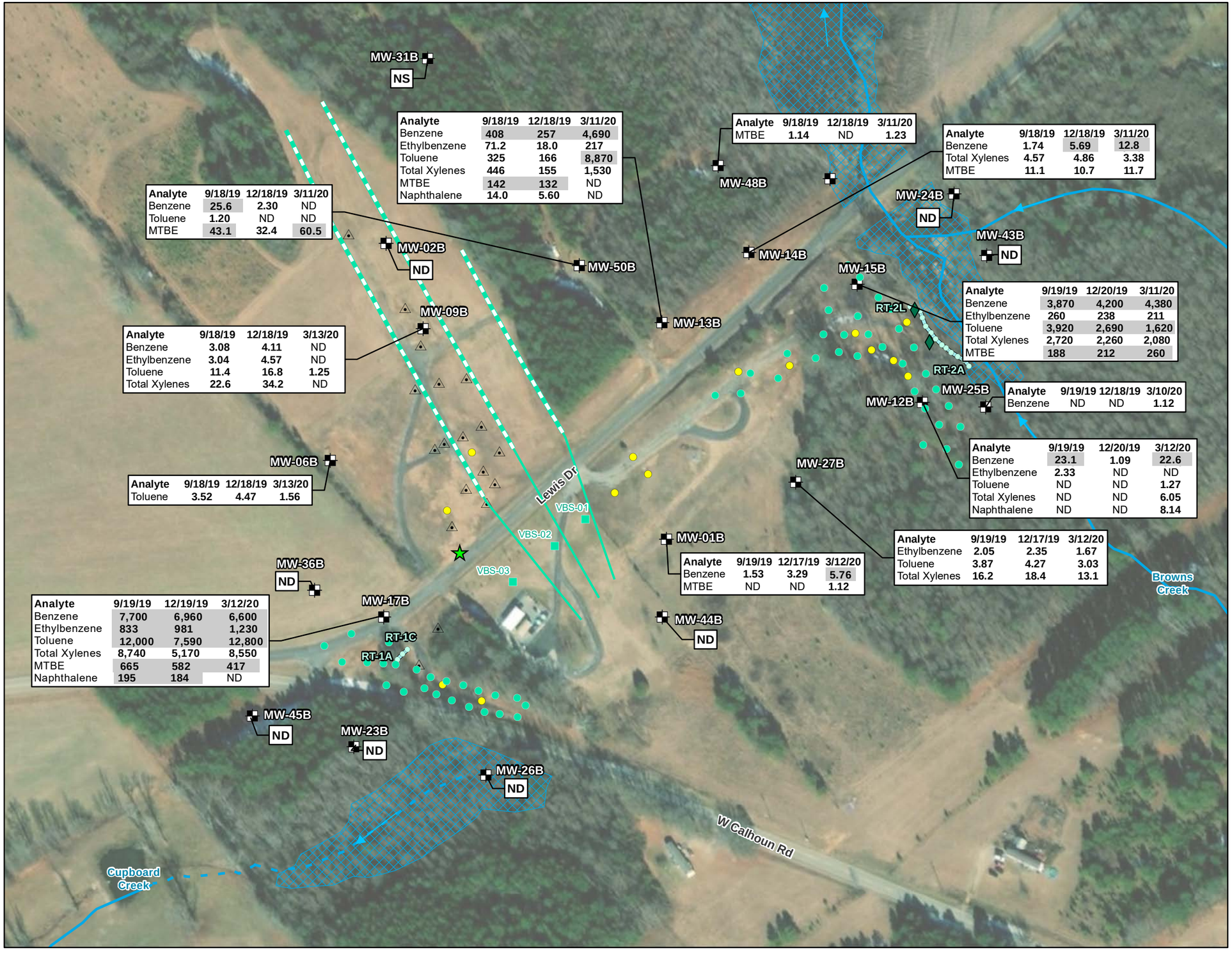
1. Total Xylenes is the sum of m&p xylenes and o-xylene.
2. MTBE = Methyl Tertiary Butyl Ether
3. 1,2-DCA = 1,2-dichloroethane
4. Analyte concentration in microgram(s) per liter (µg/L)
5. Only detected analytes are shown on map.
6. ND = Groundwater was collected and analyzed, but no analytes were detected above the reported sample quantitation limit.
7. NS = Not scheduled to be sampled for this event
8. NS-FP = Sample not collected due to the presence of free product in the well
9. NS-IW = Sample not collected due to insufficient volume of water in well

Gray shading indicates the analyte exceeded risk-based screening levels (RBSLs) identified in South Carolina Underground Storage Tank Management Division Programmatic Quality Assurance Program Plan Revision 3.1, Table D1 "RBSLs for Groundwater", February 2016.

Base Map Sources:
*Environmental Systems Research Institute (Esri) ArcMap World Imagery, 2018. Basemap features are approximate.
*United States Geological Survey (USGS) National Hydrography Dataset (NHD)

Figure 4A. Groundwater Analytical Results in Residuum Aquifer, August/September 2019, November/December 2019, and February/March 2020
Lewis Drive Remediation Site
Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Jacobs



LEGEND

- Release Point
- Bedrock Monitoring Well
- Vertical Bedrock Sparing Well
- Vertical Saprolite Sparing Well
- Seep Location
- Recovery Well (4-inch diameter)
- Recovery Sump
- Recovery Trench Point
- Recovery Trench
- Surface Water Flow Direction
- Horizontal Sparging Well Riser
- Horizontal Sparging Well Screen
- Waterbody
- Intermittent Stream
- Delineated Wetland

NOTES:
All analyte concentrations in microgram(s) per liter (µg/L).
Total Xylenes is the sum of m&p xylenes and o-xylene.
MTBE = Methyl Tertiary Butyl Ether
Only detected analytes are shown on map.
ND = Groundwater was collected and analyzed, but no analytes were detected above the reported sample quantitation limit.
NS = Not sampled during this event.

Gray shading indicates the analyte exceeded risk-based screening levels (RBSLs) identified in South Carolina Underground Storage Tank Management Division Programmatic Quality Assurance Program Plan Revision 3.1, Table D1 “RBSLs for Groundwater”, February 2016.

Base Map Sources:
*Environmental Systems Research Institute (Esri) ArcMap World Imagery, 2018. Basemap features are approximate.
*United States Geological Survey (USGS) National Hydrography Dataset (NHD)

0 175 350
Approximate scale in feet

Figure 4B. Groundwater Analytical Results in Bedrock Aquifer, September 2019, December 2019, and March 2020
Lewis Drive Remediation Site
Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"

Jacobs

Appendix A
Field Notes, Gauging Sheets, and Purge Logs

Location BELTON, SC Date 4/8/19

Project / Client LEWIS DRIVE / KINDER MORGAN

GW SAMPLING NEW WELL LOCATIONS / PRODUCT RECOVERY

PERSONNEL: T. HALL/GVL, J. MORGAN/ATL

WEATHER: PARTLY CLOUDY, 63°/93°F

OBJECTIVE: PRODUCT RECOVERY, WELL GUAGING

H+S - SLIP, TRIPS, FALLS ON WET GRASS

SAFE WORK + PTSP SIGNED

0800: T. HALL ONSITE TO DO OTM ACTIVITIES

0930: J. MORGAN ONSITE WITH EQUIPMENT

0940: H+S MEETING, SLIPS TRIPS + FALLS

0950: CALIBRATE MINI RAE 3000. NO CAL GAS ONSITE. WILL USE FACTORY CALIBRATION MINI RAE II 22022

1000: BEGAN GUAGING MONITORING WELLS LISTED UNDER MONTHLY PRODUCT RECOVERY ON TABLE 1. GUAGING INFO DOCUMENTED ON TABLE 2.

1230: CREW TO LUNCH.

1320: AFTER LUNCH. STOPPED BY FAMILY DOLLAR TO GET MEASURING CUP + WATERS.

1330: HEAVY RAIN AND LIGHTNING MOVED IN AND TEAM BEGAN WAITING IT OUT.

1400: LAST WELL GUAGED. MW-55

1430: CREW BEGAN PRODUCT RECOVERY. SEE TABLE 2 FOR GUAGING AND PRODUCT INFO.

Location BELTON, SC Date 4/8/19

Project / Client LEWIS DRIVE/KINDER MORGAN

GW SAMPLING NEW WELL LOCATIONS/ PRODUCT RECOVERY

1520: ANOTHER STORM STARTED WAITING ON HEAVY RAIN AND LIGHTNING TO STOP.

1600: SAFE TO START WORKING AGAIN CONTINUE PRODUCT RECOVERY.

1625: RW-04 LOWERED 2'.6"

1645: RW-05 LOWERED 1'

1655: RW-07 LOWERED 8".

1720: FINISHED FOR THE DAY. WILL CONTINUE PRODUCT RECOVERY TOMORROW 4/9/19.

1730: TEAM OFFSITE

4/9/19

Location BELTON, SC Date 4/9/19

Project / Client LEWIS DRIVE / KINDER MORGAN

GW SAMPLING. NEW WELL LOCATIONS / PRODUCT RECOVERY

PERSONNEL: T. HALL/GHL, J. MORGAN/ATL

WEATHER: CLOUDY, RAIN 75°/54° F

OBJECTIVE: PRODUCT RECOVERY, GW SAMPLING

H&S - MONITOR WEATHER FOR LIGHTNING.

0730: CREW ONSITE TO CONTINUE PRODUCT RECOVERY & COLLECT GW SAMPLES.

0745: UNABLE TO CALIBRATE MULTIRAE BECAUSE NO CAL GAS

0800: MOBE TO HAYFIELD TO CONTINUE PRODUCT RECOVERY

0815: RS-08. SOCK CHANGED

0830: RS-10

0835: RS-05

0845: RS-01

0850: RS-02

0905: RW-15

0910: TO COMPOUND TO DUMP PURGE BUCKET

0945: RS-14 LOWERED

0955: RS-17 LOWERED

1015: RT-2K SOCK CHANGED

1020: BACK TO COMPOUND TO DUMP PRODUCT

1030: MOBE TO FARMERS PROPERTY TO COLLECT SAMPLE AT MW-55.

1100: SET UP AT MW-55 FOR SAMPLE

Rite in the Rain.

Location BELTON, SC Date 4/9/19

Project / Client LEWIS DRIVE / KINDER MORGAN

GW SAMPLING NEW WELL LOCATIONS / PRODUCT RECOVERY

1120: MW-55-040919 VOC

1145: MW-56-040919 VOC

1200: MW-57-040919 VOC

1205: MW-57-D-040919 VOC

1210: MOBE TO SW-02 LOCATION.

1220: ~~SW-02~~ SW02-040919 VOC

1330: FB01-040919

1340: TB01-040919

1500: J. MORGAN OFFSITE TO TAKE COOLER WITH SAMPLES TO FEDEX TRACKING # 4876 1085 8258

1600: T. HALL OFFSITE. SITE SECURE UPON DEPARTURE

4-9-19

Location BELTON, SC Date 5/13/19

Project / Client LEWIS DRIVE / KINDER MORGAN

PERSONNEL: T. HALL, A. DENNIS, J. MORGAN

WEATHER: SUNNY 75°/64°F

OBJECTIVE: GAUGING SITEWIDE

0800: CREW ONSITE

0820: H+S MEETING, PTSP + SAFE WORK PERMIT SIGNED

0825: CALIBRATE PID II 22532
FRESH AIR - 0 VOC - 100.3

0830: BEGIN GAUGING

1045: PID READING 2000 PPM. WILL NOT DECREASE. CALL RAE TO SEE IF THEY CAN DELIVER NEW ONE.

1100: DRIVER WILL DELIVER NEW PID AT ~ 8:00 AM TOMORROW 5/14.

1200: CREW TO LUNCH

1245: CREW RETURNS FROM LUNCH
CONTINUE GUAGING

1700: CREW OFFSITE

5-13-19

Rite in the Rain.

Location Belton, SC Date 5/14/19

Project / Client Lewis Drive / Kinder Morgan

Personnel T. Hall, J. Morgan, A. Dennis

Weather Sunny & clear, L 48° F / H 72° F

Objective GW Sampling

0730 Onsite

0800 Safety Meeting, PTSP, Safe Work Permit

Began calibration of equipment

YSI Pro DSS

Handheld	# 395601	
Sensor	# 0449560	
0 NTU	# 19040042	
126 NTU	# 19B19050082	
1.413 mS/cm	# 96A1072	
7 pH	# 96B555	ORP # 96B1010
4 pH	# 2809F08	
10 pH	# 96A1578	

	Before	After
0 NTU	0.0	0.0
126 NTU	156.0	126.0
1.413 mS/cm	1.353	1.415
7 pH	7.16	7.00
4 pH	4.08	4.0
10 pH	10.27	10.0
ORP mV	244.6	240.0

MiniRAE PID # 034005 Post Cal 100.2 ppm

Calibration Gas 100ppm #16B1248-100-18

Location Belton, SC Date 5/14/19

Project / Client Lewis River / South Carolina

0810 Shut off dentium system

DO Calibration Actual: 102.0 Post: 97.8

0920: BEGIN SET UP AT MW-17B TO USE TYPHOON PUMP

1010: 28 GALLONS PURGED FROM WELL COLLECT SAMPLE

1015: COLLECT MW-17B-051419

1030: SET UP AT MW-46

1125: COLLECT MW-46-051419

1140: BEGIN SETUP AT MW-23

1230: COLLECT MW-23-051419

1235: COLLECT ~~MW-23-051419-FD~~ TLG

1240: CREW TO LUNCH MW-23-D-051419

1340: CREW RETURNS, RECON PUMPS TO SAMPLE LAST 2 WELLS

1430: BEGIN SETTING UP ON MW-34

1450: WELL NOT RECHARGING QUICKLY

1500: MOVED TO MW-40 WHILE MW-34 RECHARGES.

1600: COLLECT MW-40-051419

1620: BACK TO COMPOUND TO PUT UP EQUIPMENT

1730: PERSONNEL OFFSITE: MW-34 NOT RECHARGING WILL BAIL ON 5-15

1700: COLLECT FB-01-051419

5-14-19

Rite in the Rain

10

Location BELTON, SC Date 5/15/19

Project / Client LEWIS DRIVE / KINDER MORGAN

PERSONNEL: T. HALL, A. DENNIS, J. MORGAN

WEATHER: SUNNY 73° / 54° F

OBJECTIVE: GW + SW SAMPLES

0730: PERSONNEL ONSITE.

0735: HTS, PTSP + SAFE WORK PERMIT SIGNED

0800: CALIBRATE YSI

							NTU	
CAL	DO%	PH 7	PH 4	PH 10	SP cond	ORP	0	126
PRE	95.1	7.01	4.04	9.91	13.72	235.6	0.0	98.2
POST	100.1	7.00	4.00	10.07	1.413	248.0	0.0	126.3

0845: A. DENNIS TO BEGIN COLLECTING SW SAMPLES.

0900: T. HALL + J. MORGAN TO BEGIN COLLECTING GW SAMPLES.

0920: COLLECT MW-54-051519

0930: COLLECT MW-53-051519

0945: COLLECT MW-07-051519

NO SHEEN DETECTED IN BAILER, BUT DID DETECT SLIGHT SHEEN IN VOA. MAY NEED TO DILUTE AT LAB.

0955: MOBE TO MW-55 + MW-36 LOCATION

1010: COLLECT MW-55-051519

1020: COLLECT MW-36-051519

1025: COLLECT ~~A~~ TLH

MW-36-D-051519

Location BELTON, SC Date 5/15/19

Project / Client LEWIS DRIVE / KINDER MORGAN

1105:	COLLECT MW-20-051519
	NO SHEEN WHEN BAILED.
	SHEEN ON VOA'S WHEN SAMPLED
1120:	COLLECT MW-56-051519
1125:	COLLECT MW-57-051519
1130:	COLLECT MW-57-D-051519
1140:	COLLECT MW-26-051519
1200:	PERSONNEL TO LUNCH
1300:	RETURN FROM LUNCH
1400:	COLLECT MW-51-051519
1410:	COLLECT MW-52-051519
1425:	COLLECT MW-15B-051519
1440:	COLLECT MW-39-051519
1445:	RETURN TO COLLECT MW-34 VIA BAILER
1450:	COLLECT MW-34-051519
1455:	COLLECT MW-41-051519
1500:	COLLECT MW-41-D-051519
1520:	COLLECT MW-37-051519
1530:	COLLECT MW-38-051519
1600:	COLLECT FB02-051519
1700:	FB01-051519

Invo: KINCH2MGA-LEWIS Date : 09May19
Customer : P708639 Weight : 10 LBS
Phone : (615)758-5858 COD :
Sat Del : N DV :

Shipping : 0.00
Special : 0.00
Handling : 0.00
0.00 Total : 0.00

Svcs: STANDARD OVERNIGHT
TRCK: 1023 1960 9772

12

Location BELTON, SC Date 5/15/19

Project / Client LEWIS DRIVE / KINDER MORGAN

0920: A. DENNIS MOBE TO FIRST SURFACE WATER LOCATION. PICTURES TO BE TAKEN AND PARAMETERS COLLECTED AT SELECT LOCATIONS. SEE TABLE 2 GAUGING SHEET.

0930 COLLECT SW-11-051519

0940 COLLECT SW-10-051519

0945 COLLECT SW-09-051519

0950 COLLECT SW-08-051519

0955 COLLECT SW-13-051519

1000 COLLECT SW-04-051519

1005 COLLECT SW-02-051519

1010 COLLECT SW-01-051519

1015 COLLECT SW-07-051519

1025 COLLECT SW-12-051519

1030 COLLECT SW-03-051519

1400 COLLECT SW-14-051519

1430 COLLECT SW-05-051519

1500: A. DENNIS BEGINS COLLECTING TROLL DATA.

1630: T. HALL & J. MORGAN BEGIN PACKING COOLER.

1730: PERSONNEL OFFSITE. COOLER TAKEN TO FEDEX BY T. HALL

5-15-19

Location BELTON, SC Date 5/16/19

Project / Client LEWIS DRIVE / KINDER MORGAN

PERSONNEL: T. HALL, J. MORGAN, A. DENNIS
WEATHER: SUNNY 82°/52° F
OBJECTIVE: PRODUCT RECOVERY
0800: PERSONNEL ONSITE
0815: H+S, PTSP + SAFE WORK PERMIT SIGNED
0830: CALIBRATE PID # 034003
POST CAL = 100.9 ppm CAL GAS 100 ppm
LOT # GBH249-100-18
0835: RESTARTED AERATORS AT BC.
0900: BEGIN COLLECTING SOCK WEIGHTS
0940: BEGIN PRODUCT RECOVERY
1130: CREW TO LUNCH
1215: BACK FROM LUNCH. CONTINUE PRODUCT RECOVERY
1230: BAILED MW-08 TO CHECK FOR PRODUCT.
NO PRODUCT DETECTED.
1250: CONTINUED PRODUCT RECOVERY IN BC AREA.
1340: FINISHED PRODUCT RECOVERY.
1400: PACKED UP EQUIPMENT. A. DENNIS TO TAKE BACK TO OFFICE FOR PINE PICKUP.
1500: PERSONNEL OFFSITE. SITE SECURE.

5-16-19

Rite in the Rain

MONDAY

Location BELTON, SC Date 06/03/19

Project / Client LEWIS DRIVE

AUTHOR: M. WARREN

TASK GROUNDWATER AND SURFACE WATER GAUGING

WEATHER MID 80'S/CLOUDY/HUMID

TEAM M. WARREN (FTL), J. MORGAN (SCI), A. DENNIS (GEO)

EQUIPMENT SOLINST 42848
MINIRAE 07723
CAL LOT # GB1-248-100-18
CAL EXP 6/21/2022

0900 TEAM ARRIVES ON SITE AND HOLDS PTSP

0945 TEAM BEGINS GAUGING

1200 TEAM BREAKS FOR LUNCH

1300 TEAM RETURNS FROM LUNCH

1700 TEAM DEPARTS FLECO

06/03/19

Rite in the Rain.

Location BELTON, SC Date 06/04/19

Project / Client LEWIS DRIVE

TASK GROUND WATER AND SURFACE WATER SAMPLING

TEAM M. WARREN, T. HALL, A. DENNIS, J. MORGAN

WEATHER MID 80's / CLOUDY / HUMID

EQUIPMENT Solinst 42848

PID - MiniRAE 3000 037723

YSI Pro DSS unit # 39544

Cable # 17L101164

	Precal	post cal	lot #	exp
0 tds	-3.2	0.0	18397435	11/19
12c tds	116.9	126.0	14B190500082	02/20
1.413 cm	1.416	1.413	8GJ1041	10/19
pH 7	6.70	7.0	9GB555	02/21
pH 4	4.23	4.0	7G1837	09/19
pH 10	10.30	10.00	7LL670	12/19
240 mV	230.1	240.0	9GB141	11/19
DO	98.9%	100%	Bar 768.9	

0730 PTSP about Bio hazards

0740 Began Product Recovery

~~0900~~

0830 MW + TH began hydrosleeve sampling

0900 JM + AD hauled mattress to dump

0930 Began walk to SW location, inspected creek

Location _____ Date _____

Project / Client _____

1020 Collected sample @ SW-11
SW-11-050419

1035 Collected SW-10-050419

1055 Collected SW-09-050419

1110 Collected SW-08-050419

1120 Collected SW-13-050419 + WQ w/ YSI

Temp	23.3 °C
pH	7.87
Cond.	0.105 ms/cm
DO	5.43 mg/L
ORP	43.4 mV
Turb.	42.5 NTU

1200 Lunch break

1315 Collected SW-04-050419 + WQ

Temp	24.7 °C
pH	6.94
Cond.	0.056 ms/cm
DO	4.38 mg/L
ORP	110.4 mV
Turb.	14.7 NTU

1325 Collected SW-02-050419 + WQ

Temp	24.7°C	DO	4.33 mg/L
pH	6.23	ORP	159.6 mV
Cond	0.056 ms/cm	Turb.	16.6 NTU

Location _____ Date _____

Project / Client _____

1340 Collected SW-07-050419 + WQ
Temp 25.6 °C DO 8.03 mg/L
pH 6.55 ORP 106.2 mV
Cond 0.051 mS/cm Turb 95 NTU

1350 Noticed that maintenance crew crossed creek on 4x4 planks directly upstream of SW-07 near pedestrian boardwalk crossing
- Equipment was a skid steer for silt fence removal

1355 Collected SW-01-050419

1410 Arrived @ ~~SW-12~~ SW-03 but not enough flowing water to sample

1420 Opened gate to access SW-14
- no lock on gate chain

1430 Collected SW-14-050419

1440 Finished sampling in cow area; all gates closed as found

1455 Collected SW-12-050419 + WQ
Temp 21.6 °C DO 8.01 mg/L
pH 6.52 ORP 115.8 mV
Cond 0.047 mS/m Turb 173.7 NTU
- YSI probe settled on bottom in soft sediment, water is cloudy but not significantly stained

Location _____ Date _____

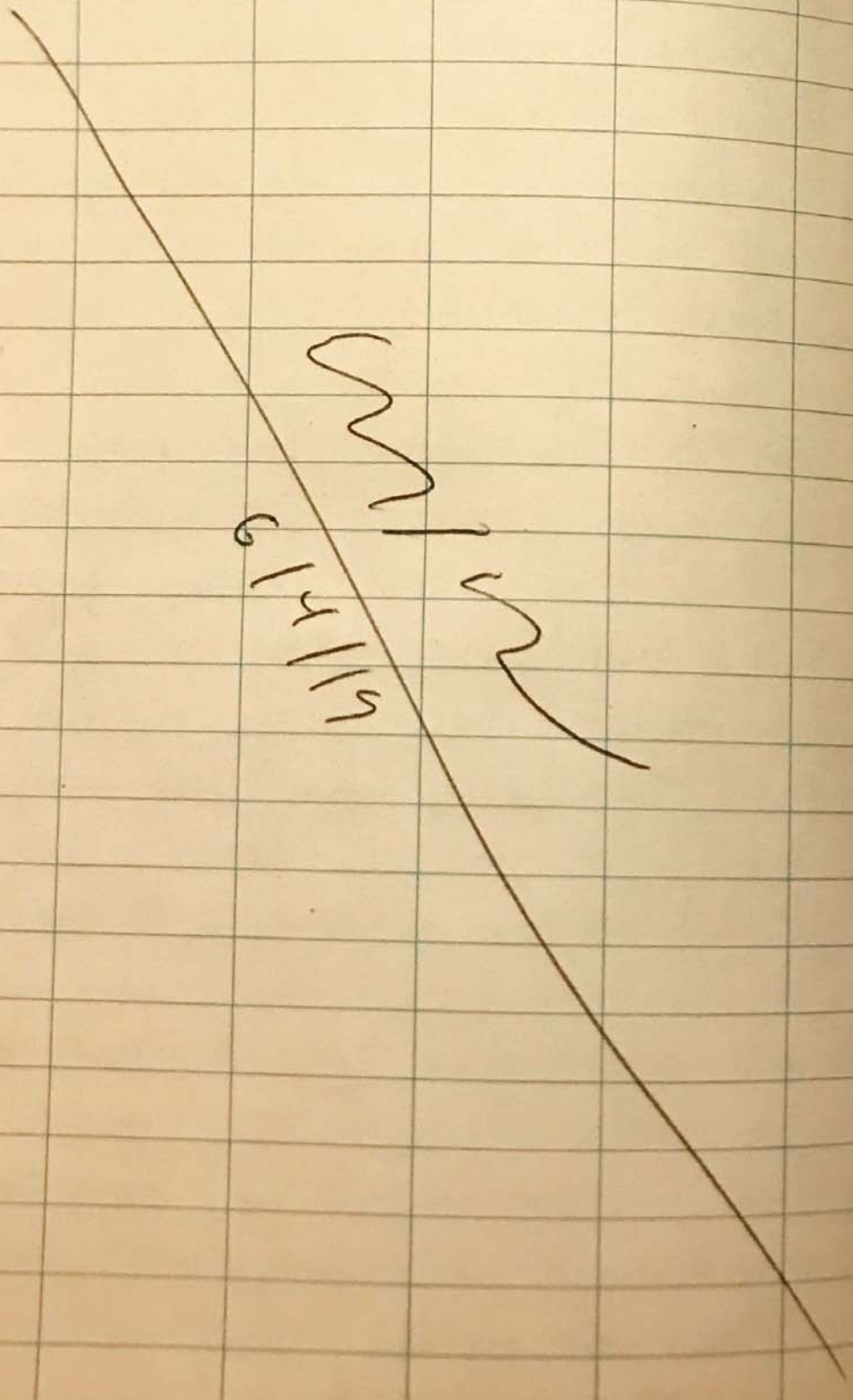
Project / Client _____

1530 Began preparing equipment for low flow
1545 Began purging MW-17
1615 MW-17 pumped dry before 3x well volume had been purged - allowed to recharge
1620 Landowner in grey Toyota Tundra arrived to talk about potential trespassers & gate/fence security going forward
- He mentioned he had talked to Tom Wiley about matress/box spring on site & removal, presence of maintenance crew today & fixing of secondary gate.
- Main concern was security of gate on nortern side of road & how it is open @ random times
- We told him about new signage "Workers Present" for field
1645 Conversation ended w/ Scott Lewis Finished purging well w/ ~2-5x well volume & could not collect a sample

Location _____ Date _____

Project / Client _____

1700 Returned to compound to pack coolers
1745 Coolers to fedex tracking #
1023135 03073



Location BELTON, SC Date 6/4/19

Project / Client LEWIS DRIVE / KINDER MORGAN

PERSONNEL: T. HALL/GVL, M. WARREN/ATL, J. MORGAN/ATL, A. DENNIS/ATL

WEATHER: MOSTLY CLOUDY 84°/68°F

OBJECTIVE: CONT'D PRODUCT RECOVERY & BEGIN COLLECTING SAMPLES.

0700: PERSONNEL ONSITE.

0715: H+S MEETING, SLIPS, TRIPS, FALLS

0730: BEGIN PRODUCT RECOVERY

0830: GATHER EQUIPMENT TO BEGIN SAMPLING.

0905	~~09~~	MW-44-060419	✓
0920		MW-44B-060419	✓
1000		MW-08-060419	✓
1020		MW-18-060419	✓
1030		MW-16-060419	✓
1045		MW-07-060419	✓
1055		MW-06B-060419	✓
1105		MW-06-060419	✓
1120		MW-09B-060419	✓

1140 PERSONNEL TO LUNCH.

1240 PERSONNEL RETURN TO LUNCH

1310	MW-09-060419	✓
1325	MW-02-060419	✓
1335	MW-02B-060419	✓

Location BELTON, SC Date 6/4/19

Project / Client LEWIS DRIVE / KINDER MORGAN

1405	MW-05-060419 ✓
1420	MW-04-060419 ✓
1500	MW-30-060419 ✓
1515	MW-03-060419 ✓
1525	MW-32-060419 ✓
1540	MW-10-060419 ✓
1600	MW-36-060419 ✓
1601	MW-36-D-060419 ✓
1610	MW-36B-060419 ✓
1630	FB01-060419 ✓
1635	TB01-060419 ✓
1730	TEAM DEPARTS FIELD.

06/04/19

Rite in the Rain

Location BELTON, SC Date 6-5-19

Project / Client LEWIS DRIVE / KM

PERSONNEL: T. HALL, M. WARREN, A. DENNIS, J. MORGAN

WEATHER: CLOUDY 86°/70° F

OBJECTIVE: COLLECT GW SAMPLES VIA HYDRASLEEVES

0700: PERSONNEL ONSITE

0710: BEGIN CALIBRATING EQUIPMENT

MINIRAE # 165U4W0409

VOC CAL - 10.0.2

YSI SONDE ID # 041055 DISPLAY 044153

SEE PG 4 FOR LOT #'S

CAL	PRE	POST
NTU 0	0.72	0.0
NTU 126	134.52	126.0
Sp Cond	1.411	1.413
PH 7	7.06	7.00
PH 10	9.99	10.00
PH 4	4.01	4.00
ORP	232.8	240.0
DO	97.4	100.0

0800: Departed compound

✓ 0805 Collected MW-17-060519

0825 Began setup @ MW-22

✓ 0920 Collected MW-22-060519 completing low flow effort for event

Location Belton, SC Date 06/05/19

Project / Client Lewis Drive / KM

✓1005	Collected	MW-47-060519
✓1015	Collected	MW-31-060519
✓1025	Collected	MW-33T-060519
✓1040	Collected	MW-50B-060519
✓1055	Collected	MW-48B-060519
1100	Back @ compand for lunch break	
1230	Back in field to continue sampling	
✓1240	Collected	MW-14B-060519
✓1255	Collected	MW-14-060519
✓1310	Collected	MW-13-060519
✓1315	Collected	MW-13B-060519
✓1340	Collected	MW-42-060519
✓1350	Collected	MW-41-060519
✓1351	Duplicate	MW-41-D-060519
✓1405	Collected	MW-40-060519
✓1415	Collected	MW-39-060519
✓1425	Collected	MW-34-060519
✓1440	Collected	MW-15-060519
✓1515	Collected	MW-43B-060519
✓1520	COLLECTED	MW-43-060519
✓1530	COLLECTED	MW-24-060519
✓1540	COLLECTED	MW-24B-060519
1600	COLLECTED	TB03-060519
1605	TEAM BEGINS PACKING	

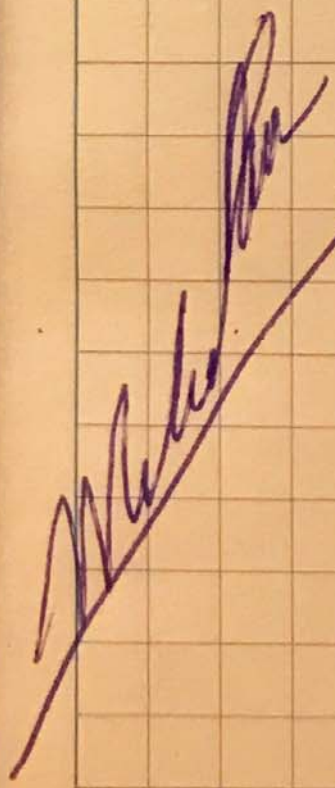
: Location BECTON, SC Date 06/05/19

Project / Client LEWIS DRIVE / KM

160 SOU COOLERS FOR SHIPMENT

1700 TEAM DEPARTS FIELD

06/05/19



16

Location BELTON, SC Date 06/05/19

Project / Client LEWIS DRIVE/KM

TASK GROUNDWATER SAMPLING

TEAM M. WARREN, T. HALL, A. DENNIS, J. MORGAN (2)

WEATHER MID 80's / HUMID / CLOUDY

EQUIPMENT MINIME 037723
LOT # GBI-248-100-18
EXP DATE # 6/21/2020

PTSP THUNDERSTORMS IN THE AREA AROUND 4 pm EST.

0700 TEAM ARRIVES ON SITE AND MOLDS PTSP AND GEARS UP FOR LOW FLOW SAMPLING AND HYDRASLEEVE SAMPLING (2)

✓0815	MW-29-060519	
✓0800	TB02-060519	
✓0830	MW-19-060519	SHEEN
✓0835	MW-20-060519	SHEEN
✓0845	MW-26-060519	
✓0850	MW-26B-060519	
✓0905	MW-23-060519	
✓0906	MW-23-D-060519	
✓0915	MW-23B-060519	
✓0920	MW-46-060519	NO WELL TAG

Location BELTON, SC Date 06/05/19

Project / Client LEWIS DRIVE / KM

0930	MW-45-060519
0935	MW-45B-060519
1005	MW-21-060519
1015	MW-17B-060519
1055	FB02-060519
1100	TEAM BREAKS FOR LUNCH
1200	TEAM RETURNS FROM LUNCH
1240	MW-01-060519
1245	MW-01B-060519
1255	MW-27-060519
1300	MW-27B-060519
1310	MW-11-060519 SHEEN
1311	MW-11-D-060519 SHEEN
1325	MW-12-060519
1330	MW-12B-060519
1345	MW-28-060519
1350	MW-49-060519
1400	MW-35-060519
1435	MW-25-060519
1440	MW-25B-060519
1450	MW-15B-060519
1500	MW-37-060519
1510	MW-38-060519
1600	TEAM BEGINS PACKING

Rite in the Rain

Location BELTON, SC Date 06/05/19

Project / Client LEWIS DRIVE/KM

1600 COOLERS FOR SHIPMENT.

1700 TEAM DEPARTS FIELD

06/05/19

12

Location BELTON, SC Date 6-6-19

Project / Client LEWIS DRIVE / KM

PERSONNEL: T. HALL, M. WARREN, A. DENNIS, J. MORGAN

WEATHER: PARTLY CLOUDY 79°/68°F

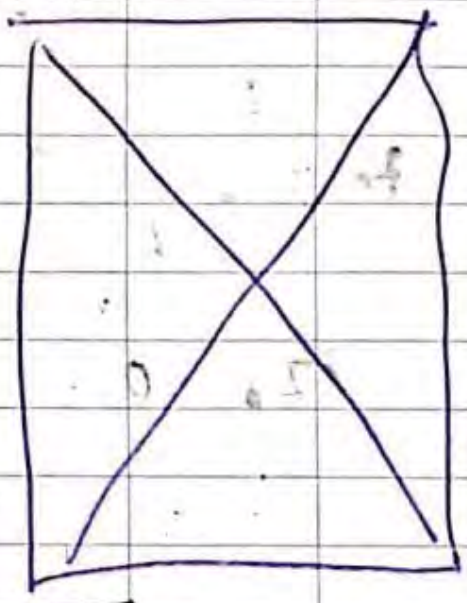
OBJECTIVE: SUBMERSIBLE TECH ONSITE, INVENTORY, DO FOR AS STARTUP

0700: PERSONNEL ONSITE

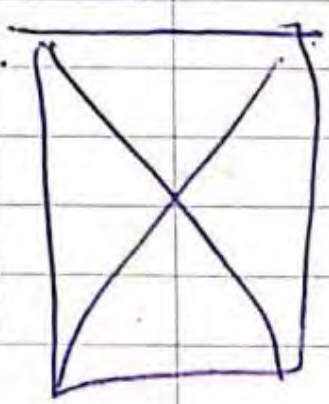
0715: H&S TOPIC SLIPS, TRIPS, FALL, INSECTS

0720: BEGIN CALIBRATING YSI

CAL	PRE	POST
DO	98.3	100.1
NTU 0	-4.03	0.0
NTU 126	119.68	0.0
PH 7	7.01	7.00
PH 4	3.93	4.00
PH 10	9.98	10.00
SP cond	1.387	1.413
ORP	241.2	240.0



WELL ID	DO mg/L	PID (ppm)	WTL
MW-19	0.48	325.2	8.75
MW-20	2.25	172.9	8.30
MW-21	5.92	0.7	12.37
MW-17	0.45	48.8	9.86
MW-11	0.52	1046	24.82



0930 collected SW-01-060619

Temp 23.16 DO 3.49 cond 0.055

pH 6.02 ORP 176.6 Turb 5.58

Location BELTON, SC Date 6/6/19

Project / Client LEWIS DRIVE / ICM

0945 collect SW-07-060619

1005 collect AW-528-060619 (ESC Lvs)
Temp 24.9 DO 5.14 cond 0.171
PH 6.34 ORP 206.5 Turb 0
1005 Collect AW-528-060619
(test America)

Post YSI
temp 24.3 DO ~~47.7~~ 3.96
cond 0.174 PH 6.83
ORP 168.3 Turb 0
PID 0.0-0.0

0830 FB04-060619 (ESC)
~~0900 FB05-060619 (TEST AM)~~
0905 FB03-060619 (ESC)
0910 FB04-060619 (TEST AM)
1030 AW-33920317-060619 (ESC)
1030 AW-33920317-060619 (TEST AM)
1030 TEMP = 26.00 C°
DO = 7.22 mg/L
SPC = 0.045 ms/cm
PH = 5.65
ORP = 246.8 MV
TURB = 0.0 NTU

Rite in the Rain

Location BELTON, SC Date 06/06/19

Project / Client LEWIS DRIVE KM

1033 TEMP = 20.0 °C
DO = 7.19 MG/L
SPC = 0.056 MS/cm
PH = 5.37
ORP = 254.8 mV
NTU = 0.0

1100 TEAM RETURNS TO COMPOUND TO GEAR DOWN, CLEAN, AND PREPARE TO SHIP COOLERS.

1130 M. WARREN DEPARTS FIELD

06/06/19

Location BELTON, SC Date 7/17/19

Project / Client LEWIS DRIVE KINDER MORGAN

AUTHOR: M. WARREN

TEAM: M. WARREN AND T. HALL

WEATHER: MID 90'S, SUNNY, HUMID

TASK GROUNDWATER AND SURFACE WATER GAUGING / SOIL SAMPLING

0900 M. WARREN ARRIVES ON SITE AND PREPARES PTSP.

0930 T. HALL ARRIVES ON SITE AND TEAMS HOLDS PTSP ABOUT HEAT AND HYDRATION. TEAM GEARS UP FOR GW/SW GAUGING AND SOIL SAMPLING

1000 BEGIN GROUNDWATER AND SURFACE WATER SAMPLING

SW-05 DRY

SW-06 DRY

1230 TEAM BREAKS FOR LUNCH

1315 TEAM RETURNS FROM LUNCH

LOT #	EXP:	CAL
96A1072	1/20	1.413 mS/cm → 1.438
96B555	2/21	7.00 → 7.06
96A1010	1/21	4.00 → 3.96
96A1078	1/21	10.00 → 10.15
1904 0042	2/20	0 NTU → 0.0
19B1905 0082	0/20	126.0 NTU → 122.1

Rite in the Rain

16 Location BELTON, SC Date 07/17/19

Project / Client LEWIS DRIVE KINDER MORGAN

AUTHOR: M. WARREN

9GB1010 11/19 240.0MV → 240.0

1400: TEAM SETS UP AT MW-46 FOR LOW FLOW

1410: BEGIN LOW FLOWING

1505: COLLECT MW-46-071719 VOC, SULFATE

MW-46-D-071719

FERROUS IRON: 0 mg/L

EQUIPMENT INTERFACE PROBE: 04565

PUMP: 03127

PRO DSS HANDHELD: 44624

PRO DSS PROBE: 041055

PID: 32876

ISO LOT # GB1248-100-18

ISO EXP DATE: 6/21/2022

PID CALIBRATION → 100.0ppm

1640 MW-56-071719 VOC SULFATE

FERROUS IRON: 0 mg/L

1000 TB01-071719

1700 FB01-071719

1750 MW-57-071719 VOC SULFATE

FERROUS IRON: 0 mg/L

NOTE LAURA LYNN DISTILLED WATER DEEP WELL, OCALA FL, INGLES MARKETS, INC 23:18 16 2 2019 FE

Location BELTON, SC Date 07/17/19

Project / Client LEWIS DRIVE KINDER MORGAN

AUTHOR: M. WARREN

Invoice: KINCH2MGA-DM Date : 31Oct18 Shipping : 0.00
Customer : P678837 Weight : 10 LBS Special : 0.00
Phone : (615)758-5858 COD : Handling : 0.00
SAT Del : N DV : 0.00 Total : 0.00

Svcs: STANDARD OVERNIGHT
TRCK: 4686 6469 1315

1830 TEAM DEPARTS FIELD TO DROP OFF SAMPLES AT FEDEX.

07/17/19

Rite in the Rain.

Location BELTON, SC Date 07/18/19.

Project / Client LEWIS DRIVE

AUTHOR: M. WARREN

TEAM: M. WARREN, T. HALL.

VISITORS: T. WILEY

WEATHER MID 80's, PARTLY CLOUDY, HUMID

TASK GROUNDWATER, SURFACE WATER, AND SOIL SAMPLING

EQUIPMENT: SEE PAGE 16.

0740 M. WARREN ARRIVES ON SITE

0800 T. WILEY AND T. HALL ARRIVE ON SITE

0805 PID CALIBRATION → 100.1 ppm

YSI CALIBRATION

1.413 mS/cm → 1.356

7.00 pH → 7.02

4.00 pH → 3.88

10.00 pH → 10.06

0 NTU → 1.74

126.0 NTU → 125.31

240.0 mV → 241.0

DO % → 100%

0850 TEAM HOLDS PTSP ABOUT ERGONOMICS AND BEGINS LOW FLOW SETUP ON MW-37

0855 START PUMP ON MW-37

0945 MW-37-071819 SULFATE VOC Fe^{2+} = 0.0 mg/L

Location BELTON, SC Date 07/18/19

Project / Client LEWIS DRIVE

AUTHOR: M. WARREN

0958 START PUMP AT MW-38

1110 MW-38-071819 VOC SULFATE Fe^{2+}=0.0 mg/L

1040 SW11-071819 VOC SULFATE Fe^{2+}=0.0 mg/L

1055 SW10-071819 VOC SULFATE Fe^{2+}=2.0 mg/L

1110 SW09-071819 VOC SULFATE Fe^{2+}=0.0 mg/L

1120 SW08-071819 VOC SULFATE Fe^{2+}=0.0 mg/L

1200 LUNCH BREAK

1250 RETURN FROM LUNCH

1305 SW04-071819 VOC SULFATE Fe^{2+}=0.0 mg/L

TEMP = 27.2°C

DO = 2.04 mg/L

COND = 0.056 mS/cm

PH = 6.17

ORP = 108.0

NTU = 13.8

1315 SW02-071819 VOC SULFATE Fe^{2+}=0.0 mg/L

TEMP = 27.9

DO = 3.82 mg/L

COND = 0.052 mS/cm

PH = 6.19

ORP = 109.0

NTU = 10.19

Rite in the Rain

20

Location BELTON, SC Date 7-18-19

Project / Client LEWIS DRIVE / KINDER MORGAN

1325 SW13-071819 VOC SULFATE Fe^{2+} = 0.25 mg/L

TEMP = 30.2°

DO = 6.37 mg/L

Cond = 0.061 ms/cm

PH = 6.17

ORP = -15.6

NTU = 2465.90 NTU

1335 SW01-071819 VOC SULFATE Fe^{2+} = 0.0 mg/L

TEMP = 29.8 °C

DO = 1.39 mg/L

Cond = 0.044 ms/cm

PH = 6.24

ORP = 19.8

NTU = 38.15 NTU

1350 SW07 DRY - PICTURE TAKEN

1400 SW12-071819 VOC SULFATE Fe^{2+} = .25 mg/L

TEMP - 24.4 °C

DO - 5.01 mg/L

cond - 0.056 ms/cm

PH - 5.94

ORP - 126.9

NTU - 14.69

LARGE AMOUNT OF BIOSHEEN PRESENT

1425 SW03-071819 VOC SULFATE Fe^{2+} = 0.25 mg/L

Location BELTON, SC Date 07/18/19

Project / Client LEWIS DRIVE / KINDER MORGAN

1445 SW14-071819 VOC SULFATE Fe^{2+} = 0.0 mg/L

1450 THUNDERSTORMS BEGIN. TEAM SHELTERS FOR THUNDER.

1602 SS01-071819 PID IN HAND AUGUR HOLE W/IN CAPILLARY FRINGE = 0.7 PPM

NOTE: NO ODOR PID DURING HAND AUGERING REACHED 0.7 PPM. WITH A BACKGROUND LEVEL OF 0.6 PPM

1620 SS02-071819

NOTE: STRONG ODOR PRESENT, CAPILLARY FRINGE @ 16"-24" SHEEN PRESENT ON BUCKET TEST. PID IN HAND = 370.0 PPM

1640 SS01 ~~#~~ PID READING W/IN ZIPLOCK BAG = 2.6 PPM

1655 SS03-071819 @ 16" AND 24" @

NOTE: BETWEEN 29" AND 32" bgs, PID = 2.4. BETWEEN 29" AND 32" bgs, PID = 4.6 BELOW 32", PID = 1.7. SAMPLE WAS COLLECTED

Rite in the Rain.

22

Location BELTON, SC Date 07/18/19

Project / Client LEWIS DRIVE/KINDER MORGAN

1655 CONT. B/W 24" AND 32". SLIGHT ODOR PRESENT.

1700 SS02 PID W/IN ZIPLOCK BAG = 574 ppm. PID WAS STEADY AFTER AT ~250ppm.

1740 SS04-071819 PID = 0.8 AUGER B/W 0" AND 20" PID STEADY AT 0.8 WITH A BACKGROUND READING OF = 0.6. NO ODOR/NO SHEEN NOTE PREVIOUS SAMPLING LOCATION WAS W/IN THE TRENCH; THEREFORE, THE CAPILLARY FRINGE WAS ASSOCIATED WITH GRAVEL BACKFILL THAT COULD NOT BE SAMPLED. PID READINGS AT 16" – 24" READ 4.5 ppm. A SLIGHT ODOR AND A SHEEN WAS OBSERVED.

1745 SS03 PID READING W/IN ZIPLOCK BAG = 46.9 ppm AND DROPPED/STEADY AT 10.0 ppm

Location BELTON, SC Date 07/18/19

Project / Client LEWIS DRIVE / KINDER MORGAN

1805 SS-04 PID READING W/IN ZIPLOCK BAG = 2.4 ppm

1000 TB02-071819

1555 TB03-071819

1830 T. HALL DEPARTS FIELD

1900 T. WILEY DEPARTS FIELD

1915 M. WARREN DEPARTS FIELD

07/18/19

Invoice: KINCH2MGA-DM Date : 31Oct18 Shipping : 0.00
Customer : P678837 Weight : 10 LBS Special : 0.00
Phone : (615)758-5858 COD : Handling : 0.00
SAT Del : N DV : 0.00 Total : 0.00

Svcs: STANDARD OVERNIGHT
TRCK: 4686 6469 1326

Rite in the Rain.

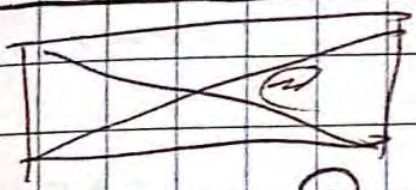
Location BELTON, SC Date 08/07/19

Project / Client LEWIS DRIVE / KINDER MORGAN

TASK: INJECTION PLANNING ON SITE WITH REDOX SUBCONTRACTORS

TEAM: MELISSA WARREN (JACOBS)
MICHEAL TEKLE (JACOBS)

SUBCONTRACTORS: GREG POWERS (REDOX)
GEOFF IVES (REDOX)
ROBERT SULIVAN (REDOX)
IVAN BLACKMAN (REDOX)



KINDER MORGAN PLANTATION: DUSTIN LAY (KM)

1000 M. WARREN AND MICHEAL TEKLE ARRIVE ON SITE. REDOX TEAM DUSTIN LAY, AND TERRY BLACK ON SITE.

1015 TEAM HOLDS PTSP ABOUT THE IMPORTANCE OF COMMUNICATING THE PLAN BEFORE EXECUTING THE TASK.

1030 REDOX UNLOADS ALL MATERIALS (INJECTION) INTO ONSITE STORAGE CONTAINER.

1115 REDOX COMPLETES UNLOADING MATERIALS.

1120 TEAM WALKS TO THE BROWN'S

Rite in the Rain

Location BELTON, SC Date 08/07/19

Project / Client LEWIS DRIVE / KINDER MORGAN

1120 CONT CREEK AREA TO OBSERVE INJECTION POINT FLAGS AND TO CREATE A PLAN. DUSTIN CONFIRMS THE USE OF AN AIR BRIDGE TO COMPLETE THE WORK BY BROWN'S CREEK.

1330 TEAM WALKS TO CUPBOARD CREEK INJECTION LOCATIONS TO OBSERVE INJECTION POIN FLAGGING. DUSTIN CONFIRMS ON PHONE, PATHWAY ADJACENT TO TREELINE TO BE USED.

1300 DUSTIN DEPARTS FIELD FOR LUNCH

1400 TEAM RETURNS TO COMPOUND TO SECURE SUPPLIES AND GREG DEPARTS FIELD.

1420 REMAINING TEAM BREAKS FOR LUNCH / REDOX SUBMITS APPLICATION FOR WATER TRUCK WITH CITY HALL.

1530 M. TECKLIE, M. WARREN, AND DUSTIN RETURN TO SITE

1630 M. TECKLIE, M. WARREN, AND DUSTIN DEPART SITE

Location BELTON, SC Date 08/07/19

Project / Client LEWIS DRIVE / KINDER MORGAN

1700 JACOBS TEAM, IVAN, ROBERT AND GEOFF RETURN TO SITE TO SECURE MATERIALS, DISCUSS PLANS FOR TOMMOROW, AND CONFIRM WATER TRUCK.

1730 TEAM RECONVEINS

1735 M. WARREN AND M. TECKLE CONFIRM THE STORAGE CONTAINER, COMPOUND, GATE ENTERING COMPOUND, GATE ENTERING UPGRADIENT BROWNS CREEK ARE LOCKED

1740 TEAM DEPARTS FIELD.

08/07/19

08/07/19

Rite in the Rain.

Location BELTON, SC Date 08/08/19

Project / Client LEWIS DRIVE

TASK DPT INJECTIONS

TEAM M. WARREN (JACOBS)
M. TEKIE (JACOBS)
GEOFF IVES (REDOX)
ROBERT SULLIVAN (REDOX)
IVAN BLACKMAN (REDOX)

WEATHER: MID 90'S, SUNNY, HUMID

0730 TEAM ARRIVES ON SITE

0745 TEAM DISCUSSES THE DAYS PLAN TO START INJECTIONS ALONG CUPBOARD CREEK INJECTION POINTS. HOLD PTSP ABOUT SLIP, TRIPS, FALLS FROM HOSE LINES, TICKS, THE USE OF SPOTTERS AND BEST COMMUNICATION PRACTICES DURING INJECTIONS

0758 - Redox Tech begin Unloading equipment to setup for injection.

0800 - M. Tekie Called S. Smida to turn on Compressor #1 (turn the breaker back on)

0810 - Turn the breaker on Compressor #1 on and S. Smida restart the System remotely.

Location Belton, SC Date 08/08/19

Project / Client Lewis Drive / PPL

25

Daily Log Cont'd

0820 - M. Tekie went to get fittings for the modified well Cap from the Car.

0830 - Begin making modified fitting for the wells.

0915 - M. Tekie went to get addition fitting for the well Cap from home depot.

1010 - M. Warren Called and Said the Cars are not Slowing down for the traffic Cars and "men working" Signs and Suggested to get "Stop" and "Slow" Sign to Stop traffic when heavy equipment Cross the road.

1017 - Called T. Wiley to get authorization to buy traffic Sign and walkie talkie,

1020 - Got authorization and bought two traffic Signs and two walkie talkie.

1035 - Back to Site (M. Tekie)

1105 - M. Tekie back to the site and Redox Still Setting up on Cupboard Creek area.

1140 - Finished making the modified well Cap.

Rite in the Rain

Daily log Cont'd

1155 - Fitted the modified well Cap on three well around the injection points on Cupboard creek area (See photo)

1245 - Lunch break.

1330 - Back from lunch

1335 - Redox Tech Continue Setup.

1400 - Used the traffic Stop Sign on both side of the road to track the rig across the road.

1425 - Redox Tech got water truck.

1500 - Redox Tech Continue Setup.

1650 - Redox Tech finished Setup and Secured site.

1700 - Field team offsite and end of day.

Michael Tetu 8/18/19

Objective - Begin DPT injection at Cupboard Creek area and demob from the site in the afternoon.

Weather - AM - High 70°, Sunny, PM - High 80°, Sunny

Personnel - See 8/8/19

Equipment - Geoprobe 6610, pumps, forklift, hand tools

Daily log

0730 - M. Tekle / Jacobs & M. Warren / Jacobs arrived onsite

0740 - Redox Tech arrived on site.

0805 - Conducted H&S meeting (Slip, trip, falls, no rushing, traffic)

0815 - Redox Tech begin taking chemical and equipment to cupboard creek area.

0825 - used stop sign when crossing the road with forklift.

0930 - Redox finished setup and taking Chemicals to Cupboard Creek.

0936 - Begin hand augering 0-5' bgs at

Location BELTON, SC Date 08/09/19
Project / Client LEWIS DRIVE

Daily log Cont'd
1014 - Begin Calibrating YSI
YSI # 34563/44151 /pine Lot #

			Exp. date.
PH4	4.03 → 4.00	9GA1010	01/2021
PH7	7.00 → 7.00	9GB555	02/2021
PH10	10.00 → 10.00	9GA1078	1/2021
Cond (mS/cm)	1.354 → 1.413	9GA1072	01/2020
ORP	253.7 → 240.0	9GB1010	11/2019
DO	98.1% → 99.1%		

1020 - Begin DPT at IP04 to 20' bgs.
1025 - Gauged water level in MW-57 = 8.92' btoc
MW-56 = 7.27' btoc

TURB 0.0	3.03 → 0.00	18397435	11/19
TURB 1.26	122.68 → 126.00	1981905008Z	02/20

1030 - DPT refusal at 16' bgs on IP04
1035 - DPT refusal at 16' bgs on IP05
1050 - Redox Begin mixing chemicals.
~ 480 lb Sodium persulfate and
~ 120 lb Calcium peroxide + 270 gal. water.
1125 - Finished mixing chemicals.
1140 - Redox Tech is having issue with the diaphram pump.
1154 - Redox Tech fixed the pump and begin injection at IP04 (see injection form)

Location BELTON, SC Date 08/09/19
Project / Client LEWIS DRIVE

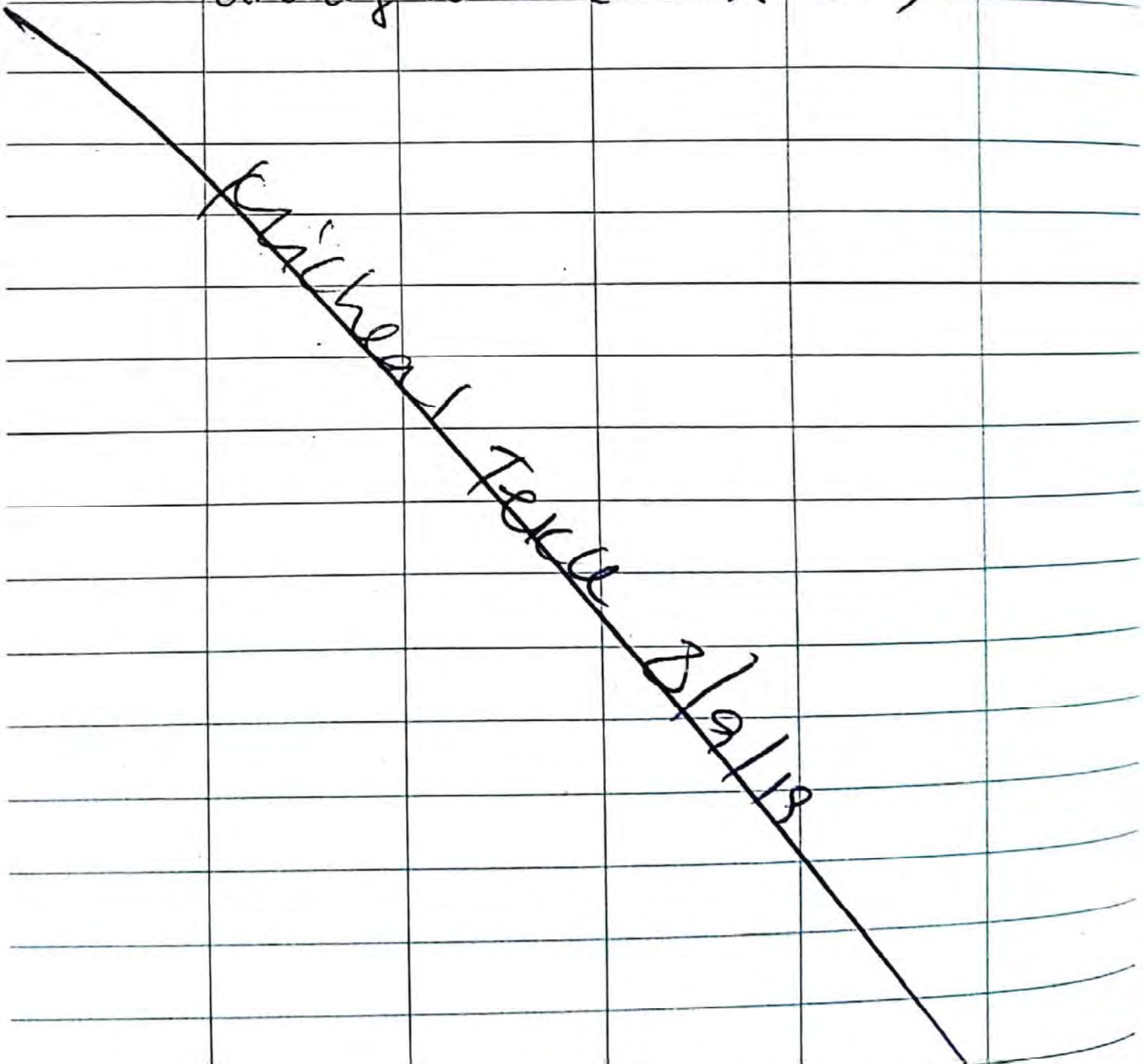
~~Daily Cont'd~~
1425 - MW-57 DTW = 8.85 ~~ft~~ btoc
~~1430 - BEGIN DPT AT IP05 TO 20' BGS~~
1435 - MW-56 DTW = 7.38 btoc
1305 - 1400 - Lunch break.
1440 - Redox Tech begin mixing substrate
~ 480 lb Sodium persulfate
~ 120 lb Calcium peroxide + ~ 290 H2O
1458 - Begin injection at IP-5 (See injection form)
1532 - Checked water level on MW-57,
DTW = 8.13' btoc.
1536 - Finished Injection at IP-5 (360 gal)
1538 - Begin grouting injection point IP-4 and IP-5 using bentonite-cement mix and tremie pipe.
1540 - Checked water level on MW-56,
DTW = 6.38' btoc (some pressure in the well)
1543 - Checked/monitored hose connection on the pump during injection and observed no leak.
1600 - Injection points Colapsed to 0.5' ft bgs and redox Tech will bring tools to push the soil to at least 5' bgs and grout the IP.

Daily log cont'd

1605 - Redox Tech begin getting ready to demob from site.

1721 - Redox Tech finished cleaning site and offsite

1730 - M. Teele & M. Warner offsite and driving home (ATL & CLT).



OBJECTIVE - CONTINUE DPT INJECTION AT CUPBOARD CREEK AREA

WEATHER - M.O 80'S AM M.D 90'S PM

PERSONNEL - M. WARREN (JACOBS)
M. TEKIE (JACOBS)
GEOFF IVES (REDOX)
ROBERT SULLIVAN (REDOX)
IVAN BLACKMAN (REDOX)
BRADFORD BALIFF (REDOX)

PTSP - WEATER, TRAFFIC, BIOHAZARDS, CHAINSAW USE AHA

EQUIPMENT - GEOPROBE 6610, PUMP, FORKLIFT, HAND TOOLS

(2)

DAILY LOG

0900 - M. WARREN AND G. IVES ARRIVE ON SITE.

0930 - M. Tekle and the rest of Redox Tech Crew onsite.

0940 - H&S meeting (slip, trip, falls, biological, traffic, weather)

1005 - Redox Tech begin moving equipt.

Location Belton, SC Date 8/12/19

Project / Client Lewis Dr / PPL

Daily log Contid

1035 - Redox begin grouting IP#4 & IP#5 by using blunt DPT tip to push to 5' bgs and grouting borehole with bentonite - Cement mix.

1050 - Grouted IP#4 & IP#5.

1057 - Begin DPT IP#6 (Cleard 0-5' bgs using hammer probe)

1107 - Refusal at 16' bgs on IP#6.

1125 - Used push probe (hammer probe) to clear 0-5' bgs on IP#7.

1120 - Begin DPT IP#7

1130 - Refusal at 16' bgs on IP#7

1137 - Used hammer probe to clear 0-5' bgs on IP#8

1143 - Begin DPT IP#8

1155 - Refusal at 18' bgs on IP#8

1200 - Gauged water level

Well ID	DTW
MW-57	9.03
MW-58	5.38
MW-46	8.35

1230 - Lunch

1325 - Back from Lunch

Location Belton, SC Date 8/12/19

Project / Client Lewis Dr. / PPL

Daily log contid

1400 - Redox Tech begin mixing chemicals

648 lb Sodium persulfate, X 2

420 lb Calcium peroxide in the tank

+ ~ 270 Gal. H_2O

1415 - Begin field test for Ferrous Iron, Sodium persulfate, and Hydrogen peroxide on groundwater collected from MW-58 (~ 10 feet from IP#8) before injection.

Fe^{+2} = 0.25 mg/L

$Na_2S_2O_8$ = 0.0 mg/L

H_2O_2 = 0.0 mg/L

1439 - Begin injection at IP#8 (See injection form)

1512 - Finished injection at IP#8

1520 - Gauged water level and field test for Fe^{2+}, $Na_2S_2O_8$, and H_2O_2 on MW-58

DTW = 4.87' btoc

Fe^{2+} = 0.25 mg/L

$Na_2S_2O_8$ = 0.0 mg/L

H_2O_2 = 0.0 mg/L

1522 - Begin injection at IP#7 (See injection form)

Location Belton, SC Date 8/12/19

Project / Client Lewis Dr. / PPL

Daily log Cont'd

1551 - Finished injection at IP07

1600 - Begin mixing Chemicals
≈ 480 lb Sodium persulfate
≈ 120 lb Calcium peroxide
+ ≈ 270 H_2O

1625 - Begin injection at IP06
(See injection form)

1700 - Finished injection at IP06 (MH)

1703 - Begin Hammer probe at IP09 & IP10
IP10 to clear 0-5' bgs for utility.

1705 - Begin mixing Chemicals (Same proportion as above)

1710 - DPT IP09 and IP10

1715 - Refusal at 20' bgs on both IP09 and IP10

1718 - Redox Tech begin mixing chemical

1730 - Begin injection on IP10
(See injection form)

1802 - Finished injection at IP10

1810 - Redox Tech begin mixing chemical

1829 - Begin injection at IP09
(See injection form)

1902 - Finished injection at IP09

Location Belton, SC Date 8/12/19

Project / Client Lewis Dr. / PPL

Daily log Cont'd

1915 - Finished injection for the day and went to System building to dump IDW and Stage equipment.

1925 - Dump ≈ 0.25 gal. IDW groundwater into SW tank (there was 200gal. water already in the tank) and Staged equipment.

1935 - All team offsite and end of day.

Michael Tekle 8/12/19

Location Belton, SC Date 8/13/18

Project / Client Lewis Dr. / PPL

Objective - Continue DPT injection at Lewis Drive site on Cupboard creek area.

Personnel - M. Tekle / Jacobs
M. Warren / Jacobs
R. ~~Robert~~ (MT) Sullivan / Redox Tech
I. Blackman / Redox Tech
G. Ives / Redox Tech
B. Baliff / Redox Tech
Z. Poole / Redox Tech

Weather - AM = 81°, P. Cloudy, PM: 93°, P-Cloudy

Equipment - YSI, MultiRAE, WC meter, Geoprobe 6610, air compressor, pump, and hand tools.

Daily log

0730 - Jacobs and Redox Tech team met at the site.

0740 - H&S meeting and Sign PTSP (driving weather, slip, trip, falls, biological (communication)

0805 - Calibrated MultiRAE #
Composite gas
CO = 50 ppm LEL: 58 %
H_2S = 10.1 ppm O_2 = 18 %
100 ppm Isobutylene
VOC = 100 ppm

Location Belton, SC Date 8/13/18

Project / Client Lewis Dr. / PPL

Daily log Cont'd.

0815 - Fresh air calibration
CO = 0.0 LEL = 0.0 VOC = 0.0
H_2S = 0.0 O_2 = 20.9

0823 - Redox Tech begin Setup

0835 - M. Warren went to check cupboard creek.

0847 - M. Warren saw some reddis brown color on the bank of the pond by cupboard Creek and M. Tekle stop work to check the pond with YSI and field test kit.

0900 - B. Waldron / Jacobs onsite and conducted H&S briefing (slip, trip, fall, biological, traffic)

0915 - M. Warren & M. Tekle went to check the pond.

0925 - Color looks like its natural from the soil.

0932 - Collected sample to check with YSI & field test kit.

Sodium Persulfate = 2.1 ppm (mg/L)
Hydrogen peroxide = 0.0 mg/L
Ferrous Iron = 0.0 mg/L

Rite in the Rain

Location Belton, SC Date 8/13/19

Project / Client Lewis Dr / PPL

Daily log Cont'd

0940 YSI - temp = 28.6 °C
DO = 7.9 mg/L
Cond = 0.053 ms/cm
PH = 7.22
ORP = 102.1 mV
Turb = 28 NTU

0950 - Back to start injection; PH, Cond. and ORP did not show sign of the injection daylighting on the pond. The field test kit also confirmed that.

1010 - MW-57 DTW = 9.25

1015 - MW-56 DTW = 7.41

1020 - MW-46 DTW = 8.23

1007 - Redox Begin push probing and installing DPT for injection.

1030 - DPT at 20' bgs on IP11

1045 - Begin grouting IP-06 - IP10 by pushing 0-5' bgs using a blind (HT) blunt DPT tip.

1050 - Finished grouting IP-06 to IP.

1053 - Called J. Ford (Jacobs to talk about the color on the pond and with neutral PH, no bubbling, and since the pond is not soft -

Location Belton, SC Date 8/13/19

Project / Client Lewis Dr. / PPL

Daily log Cont'd

1058 - J. Ford / Jacobs said it is unlikely the color in the pond is from the injection and not consistent with the injection substrate properties.

1110 - DPT at 20' bgs on IP12

1115 - DPT at 19.5' bgs refusal on IP-13

1130 - DPT at 15' bgs refusal on IP-14

1135 - DPT refusal at 14.5' on IP-15

1142 - DPT refusal at 16' on IP-18

1153 - DPT refusal at 16' on IP-19

1200 - Jeffery Mendenhall / SC DEQ, Ryan Ariail / SC DEQ, and B. Waldron came to Cupboard creek area for site visit.

1203 - J. Mendenhall and R. Ariail asked question about how well the ground is taking the injection, injection pressure, daylighting, and injection setup and pump

1212 - J. Mendenhall, R. Ariail, and B. Waldron off from Cupboard creek area

1203 - Begin injection at IP-15

1230 - Finished injection at IP-15 (See injection form)

Location Belton, SC Date 8/13/19

Project / Client Lewis Dr / PPL

Daily log Cont'd

1245 - Lunch

1320 - Back from Lunch

1425 - Begin injection at IP-18 (MT)
(See injection form)

1458 - Finished injection at IP-18 (MT)

1448 - Begin injection at IP-14
(See injection form)

1528 - Finished injection at IP-14

1531 - Begin injection at IP-19 (MT)
(See injection form)

1535 - Gauged wells

	DTW
MW-46	7.79' btoc
MW-56	6.48' btoc
MW-57	5.85' btoc

1537 - Field test kit and YSI reading from sample collected using bailer from MW-57

$Na_2S_2O_8$ = 0.0 mg/L

H_2O_2 = 0.0 mg/L

Fe^{2+} = 0.0 mg/L

YSI - Temp = 24.6°C PH = 5.38

DO = 3.47 mg/L ORP = 253.2 mv

Cond = 0.122 ms/cm Turbidity = 40.67 NTU

Location Belton, SC Date 8/13/19

Project / Client Lewis Dr. / PPL

Daily log Cont'd

1603 - Finished injection at IP-18

1600 - Field test kit measurment on sample collected from MW-56 using bailer.

$Na_2S_2O_8$ = 0.0 mg/L

H_2O_2 = 0.0 mg/L

Fe^{2+} = 0.0 mg/L

1600 - Begin injection on IP-13
(See injection form)

1615 - Checked water level on MW-56 (around 5' away from IP-13)
DTW = 5.38' btoc

1629 - Checked water level on MW-56
DTW = 4.38' btoc

1631 - DPT refusal at 16' bgs on IP-16

1640 - DPT refusal at 16' bgs on IP-17

1640 - Finished injection at IP-13 (MT)

1645 - Begin injection at IP-17
(See injection form)

1651 - Measured DTW and collected groundwater sample from MW-56 using bailer.
DTW = 4.16' btoc.

Location Belton, SC Date 8/13/19

Project / Client Lewis Dr. / PPL

Daily Log Cont'd

1713 - Field test kit measurment
$Na_2S_2O_8$ = 0.0mg/L
H_2O_2 = 0.0mg/L
Fe^{2+} = 0.0mg/L

1715 - YSI readings;
Temp: 24.4°C PH: 5.44
DO = 17.08 mg/L ORP = 287.4mv
Spc. Cond = 0.042 MS/cm Turb: 116.7

1725 - Finished injection at IP-17 (n5' upgradient from MW57)

1730 - Collected groundwater Sample from MW-57 using bailer for field test measurment and YSI parameters.

1735 - Field test measurment
$Na_2S_2O_8$ = 0.0mg/L
H_2O_2 = 0.0mg/L
Fe^{2+} = 0.0 mg/L

1736 - YSI readings;
Temp = 21.7°C PH = 5.46
DO = 3.50 mg/L ORP = 230.5mv
Spc. Cond = 0.037 ms/cm Turbidity = 211.8

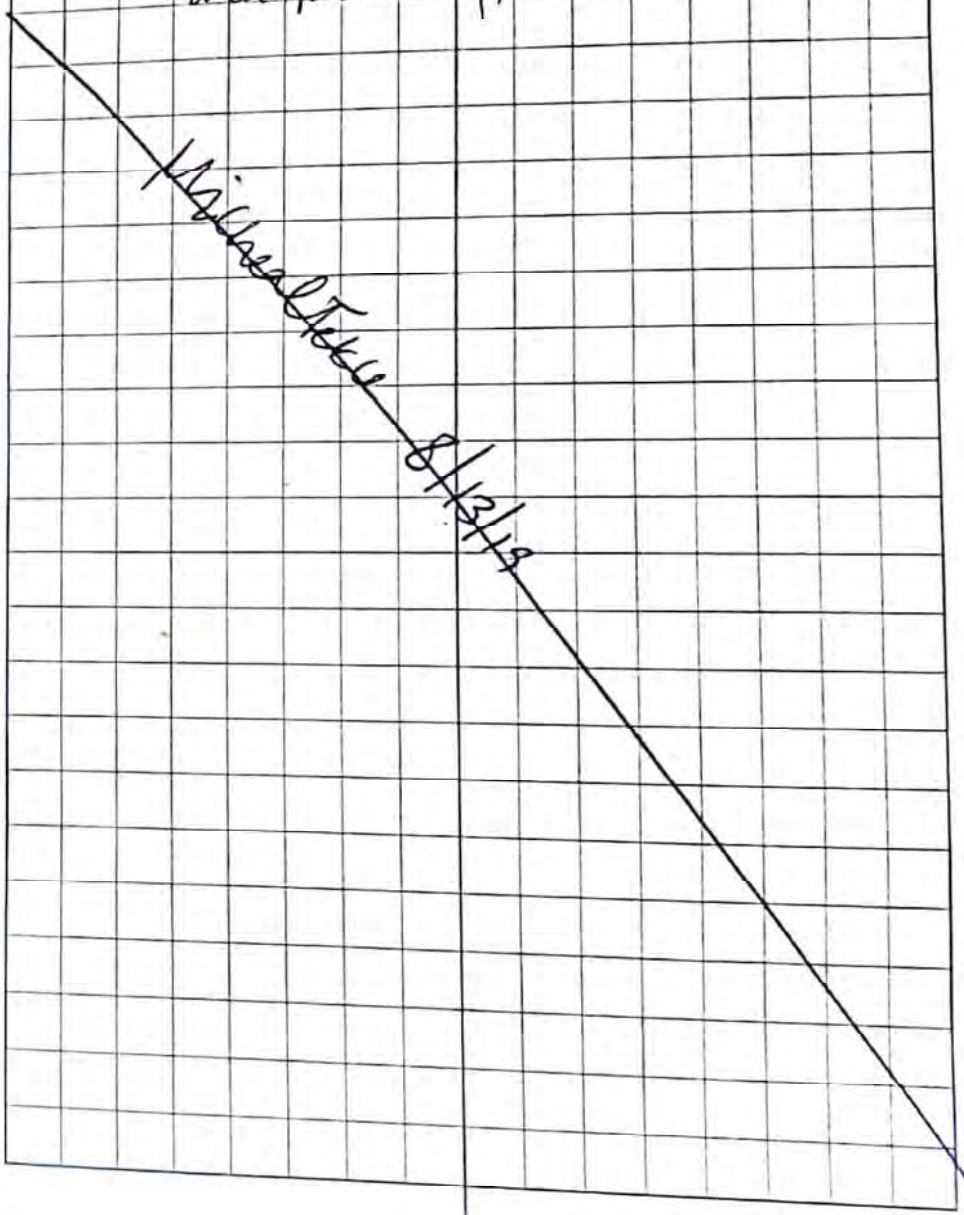
1740 - Went to System building and dumped ~1 gal. IDW groundwater into poly tank (SW tank).

Location Belton, SC Date 8/13/19

Project / Client Lewis Dr. / PPL

Daily Log Cont'd

1800 - Secured the site and Redox Tech and Jacobs offsite.



Location Belton, SC Date 8/14/19

Project / Client Lewis Dr. / PPL

Objective - Continue DPT injection on Cupboard Creek area.

Weather - AM: 70°, cloudy, PM = 95°, Cloudy

Personnel - See 8/13/19

Equipment - See 8/13/19

Daily log

0730 - Jacobs & Redox Tech onsite

0740 - H&S meeting and Sign PTSP (PPE at all times, driving, slip, trip, falls, complacency)

0752 - Begin equipment calibration and Redox Tech begin loading/moving Chemical.

0800 - Calibrated YSI # 04A061 / Pine

YSI		Lot #	Exp. date
PH 4	4.16 → 4.00	See page 28	See page 28
PH 7	7.09 → 7.00		
PH 10	10.14 → 10.00		
Cond	1.390 → 1.413		
ORP	228 → 240.0		
DO			

0820 - Calibrated MultiRAE # 019819 / Pine

Composite gas	Lot #	Exp. date
LO = 50 ppm LEL = 50 %	DBJ-413-1810	04/01/21

Location Belton, SC Date 8/14/19

Project / Client Lewis Dr. / PPL

Daily log cont'd

	Lot #	Exp. date
0823 - 100 ppm Isobutylene		
VOC = 100.1 ppm	CBJ-248-100-5	2/27/23

0825 - Fresh air

CO = 0.0 ppm LEL = 0.0 % VOC = 0.0 ppm

H_2S = 0.0 ppm O_2 = 20.9%.

0828 - Calibrated Turbidity on YSI

		Lot #	Exp. date
0 NTU	-6.29 → 0.0	19B4A0442	02/20
126 NTU	123.42 → 126	19B19A5A082	02/20

0840 - Redox Tech transported chemical to Cupboard Creek area.

0854 - Redox getting ready to grout injection points from yesterday (8/13/19).

0900 - Gauged DTW on MW-56, 57, 46

	DTW
MW-46	8.22' btoc
MW-56	7.52' btoc
MW-57	8.90' btoc

0910 - Redox Finished grouting all eight injection points from 8/13/19 using cement-~~grout~~ Bentonite mix.

0933 - Begin injection at IP 16 (See injection form)

0935 - DPT refusal at 20' bgs on IP 20

0938 - Begin injection at IP-20

(See injection form)

Location Belton, SC Date 8/14/19

Project / Client Lewis Dr. / PPL

Daily log cont'd

0950 - DPT refusal at 16' bgs on IP#3
0959 - Finished injection at IP 16
1021 - Finished injection at IP 20
1047 - Begin injection at IP #3 (see injection form)
1053 - Begin injection at IP 11 (see injection form)
1104 - Daylighting in 8' away from IP-11 (14' bgs)
1105 - Stop injection and putted bentonite granular berm around the daylighting area.
1117 - pulled the injection to 12' bgs (daylighting was at 14' bgs) and begin injection at a low flow rate and 5 psi.
1118 - Saw daylighting again and decided to abandoned IP-11, move to IP-12 and inject whatever left from IP-11 into IP-12.
1116 - Finished IP #3
1123 - Setup on IP12
1130 - Begin injection at IP 12 (see injection form)
1156 - Begin injection at IP #1 (see injection form)
1222 - Daylighting from IP12 at 12' bgs and 5 ft away from the daylight location on IP1.

Location Belton, SC Date 8/14/19

Project / Client Lewis Dr. / PPL

Daily log Cont'd

1222 - Finished injection at IP #1
1235 - Lunch
1330 - Back from Lunch
1427 - Continue injection at IP 12 after pulling it to 10' bgs
1435 - Daylighting from IP 12 and decided to abandoned the point.
1437 - Called T. Wiley and decided to try to put a replacement IP for IP 12 and try to inject the remaining substrate at the new IP.
1440 - moved in 10' North from IP12 and DPT to 14' bgs. and called it IP12A
1444 - Begin injection at IP #2 (See injection form)
1455 - Begin injection at IP 12A (See injection form)
1519 - Finished injection point IP #2.
1523 - DPT refusal at 18' bgs on IP23
1535 - DPT refusal at 18' bgs on IP24
1545 - DPT refusal at 22' bgs on IP21
1538 - Finished injection at IP 12A
1606 - Begin injection on IP 23 (See injection form)

Location Belton, SC Date 8/14/19

Project / Client Lewis Dr. / PPL

Daily log cont'd

1614 - Begin injection at IP-21 (See injection form)

1623 - Gauged MW-46; DTW = 6.52

1628 - Collected Sample from MW-46 for field test measurment & YSI reading.

$Na_2S_2O_8$ = 0.0 mg/L

H_2O_2 = 0.0 mg/L

Fe^{2+} = 0.25 mg/L

YSI : Temp : 25.2°C ORP = 75.5 mV

DO : 2.22 mg/L Turbidity = 63.98

Cond : 0.043 ms/cm

PH : 5.26

1630 - J. Mendenhall / SCDEQ called and said he will Check on us on Friday 8/16/19 to Come to the Site or next week Tuesday.

1642 - Getting back pressure on IP 21

1643 - let it sits for a bit for the pressure to Subside.

1704 - Finished injection at IP 21

1716 - Begin injection at IP ~~24~~ 23 IP24 (See injection form)

1748 - Rain and Thunderstorm forecast in few minute.

Location Belton, SC Date 8/14/19

Project / Client Lewis Dr. / PPL

Daily log cont'd

1750 - Talked to R. Brown / ATL and how to deal with the daylighting and decided to wait for the final word after the meeting / call between R. Brown, N. Ballantyne & L. Schwan on 8/15/19.

NOTE - Finished injection IP-23 at 1638.

1753 - Team demob to system building to dump IDW (~0.25gal) and Stage equipment.

1800 - Offsite and end of day

Michael Tekle 8/14/19

Location Belton, SC Date 8/15/19

Project / Client Lewis Dr. / PPL

Objective - Continue DPT injection at cupboard creek area.

Weather - AM: 82°, P. Cloudy, PM: 93°, P. cloudy

Personnel - See 8/13/19

Equipment - See 8/13/19

Daily log

0730 - Arrived onsite and met Redox Tech.

0740 - H&S meeting (weather, slip, trip, falls, complacency, driving, biological)

0753 - Redox Tech begin loading chemical

0805 - Begin Calibrating MultiRAE

Composite gas	Lot #	Exp. date
CO = 50 ppm LEL = 50% O_2 = 18% H_2S = 10 ppm	DBJ-413-18-10	04/01/21
100 ppm Isobutylene VOC = 100.1 ppm	Lot # CBJ-248-100-S	Exp. date 2/27/23

Fresh air

CO = 0.0 LEL = 0.0 VOC = 0.0

H_2S = 0.0 O_2 = 20.9

0818 - Redox Tech transported chemical to cupboard creek area.

0825 - Went to check the pond downgradient of injection point.

0836 - No sign of daylighting on the pond.

Location Belton, SC Date 8/15/19

Project / Client Lewis Dr. / PPL

Daily log cont'd

0850 - Finished injection at IP-24

0857 - Redox Tech begin grouting injection points and mixing chemical

0914 - DPT at IP 40 to 20' bgs

0923 - DPT at IP 22 (MT) to 20' bgs

0944 - Begin injection at IP 44 (See injection form)

1005 - Gauged wells:

MW-46 = 8.03' btoc

MW-56 = 7.43' btoc

MW-57 = 8.52' btoc

1012 - DPT at IP22 to 20' bgs

1030 - Begin injection at IP22 (See injection form)

1035 - Finished injection at IP40

~~Begin injection at IP 22~~ (MT)

1050 - DPT at IP39 to 20' bgs

1105 - Begin injection at IP39 (See injection form)

1115 - Daylighting around DPT rod on IP39 at 18' bgs.

1116 - Stopped injection and pulled rod to 17' bgs

1119 - Resumed injection at IP39

Location Belton, SC Date 8/15/19

Project / Client Lewis Dr. / PPL

Daily Log Cont'd

1130 - DPT at IP37 to 20'bgs

1135 - Begin injection at IP37 (See injection form)

1210 - Finished injection at IP37

1200 - A little bit daylighting on IP39 at 10'bgs and abandoned the point and DPT to 10'bgs South of the original IP39 to inject the remaining volume.

1206 - Begin injection on IP39A (replacement for IP39).

1212 - DPT at IP36 to 20'bgs

1424 - Begin injection at ~~IP35~~ IP36 (See injection form)

After Lunch

1219 - Finished injection on IP39A

1235 - Lunch

1330 - Back from Lunch

1415 - DPT at IP35 to 20'bgs

1417 - DPT at IP38 to 20'bgs

1420 - Begin injection at IP38 (See injection form)

1458 - Finished injection at IP38

1500 - Small daylighting and bubbling on IP36 at 6'bgs.

Location Belton, SC Date 8/15/19

Project / Client Lewis Dr. / PPL

Daily Log cont'd

1503 - Driller said there was some kind of insect living on the hole where he saw the daylighting coming out and pushed out when fluid coming out on the surface.

1512 - Since the daylighting happened on the last interval on IP37, team decided to move to the next point and inject the remaining amount from IP37 ~~IP35~~ on the next IP.

1532 - Begin injection at IP35; DPT to 20'bgs. (See injection form)

1535 - Begin injection at IP35 + leftover from IP37. (See injection form)

1555 - Collected groundwater sample from MW-46 for field test and YSI measurment.

$Na_2S_2O_8$ = 0.0 mg/L

H_2O_2 = 0.0 mg/L

Fe^{2P} = 0.10 mg/L

YSI Temp = 21.7°C pH = 5.25

DO = 11.37 mg/L ORP = 231.6 mV

cond = 0.041 ms/cm Turbidity = 129.5

Rite in the Rain

Daily Log Cont'd

1600 - DTW at MW-46 = 5.14' btoc
1613 - Finished IP25
1620 - DPT refusal at 18' bgs on IP26
1625 - DPT refusal at 18' bgs on IP34
1632 - Begin injection at IP26
(See injection form
1640 - Begin injection at IP34
1717 - Finished injection at IP26
1720 - Finished injection at IP34
1730 - Demob from cupboard creek area and went to System building.
1745 - Dump ~0.25gal. IDW purge water & put PID on charge.
1800 - offsite and end of day.

Michael Texas 8/15/18

Objective - Finish injection at cupboard creek area and demob.

Weather - 73°, M. Sunny (AM), PM - 92°, cloudy

Personnel - See 8/13/19

Equipment - See 8/13/18

Daily log

0730 - Arrived at the site and met Redox Tech.

0740 - Sign PTSP and H&S meeting (no rushing, slip, trip, falls, weather drink water, driving)

0751 - Calibrate multiRAE

Composite gas

Co = 50

H_2S = 10.1

100 ppm Isobutylene

VOC = 100.1

Fresh air

Co = 0.0

H_2S = 0.0

Lot # Exp. date

LEL = 50 DBJ-413-18-10 4/1/21

O_2 = 18.0

Lot # Exp. date

CBJ-248-100-5 2/27/23

LEL = 0.0 VOC = 0.0

O_2 = 20.9

0758 - Redox begin transporting chemical

0820 - Redox begin mixing chemical

Location Belton, SC Date 8/16/19

Project / Client Lewis Dr. / PPL

Daily log cont'd

0918 - Begin injection at IP28 (See injection form)
0921 - DPT refusal on IP31 at 16' bgs
0928 - DPT refusal on IP32 at 16' bgs
0934 - Begin injection at IP32 (See injection form)
0947 - Finished IP28
0948 - Finished IP32
1002 - DPT refusal at 15' bgs on IP27
1025 - Begin injection at IP27 (See injection form)
1038 - Begin injection at IP31 (See injection form)
1037 - Finished injection at IP 27
1112 - Finished injection at IP 31
1115 - DPT refusal at 16' bgs on IP33
1119 - Begin injection at IP33 (See injection form)
1200 - DPT refusal on IP30 at 12.5' bgs
1207 - Begin injection at IP30 (See injection form)
1200 - Finished injection at IP33
1234 - V. Small daylighting around the DPT rod on IP30 at 6' bgs.

Location Belton, SC Date 8/16/19

Project / Client Lewis Dr. / PPL

Daily log Cont'd

1238 - Begin injection on IP29 (See injection form)
1303 - Added the volume left from IP30 on IP29
1306 - Finished injection at IP29
1325 - Finished all 40 injection points around Cupboard creek area.
1330 - Lunch
1405 - Back from lunch and begin demobing from cupboard creek and abandoning boreholes from injection.
1530 - Finished borehole abandonment and begin loading rig and equipment.
1600 - Containerized ~ 12 gal. of water from the pump Secondary Container in a 5 gal. bucket to dump it to the poly tank.
1655 - Finished demobing from Cupboard Creek area and begin Site restoration.
1740 - Dumped ~ 12 gal. of IDW water
1800 - Redux Tech and Jacobs off site.

Mitchell Tekker 8/16/19

BELTON, SC 08/19/19 MONDAY

LEWIS DRIVE / KINDER MORGAN

TASK GROUNDWATER GAUGING

WEATHER MID 90'S, HUMID, SUNNY

TEAM M. WARREN
T. HALL
B. GARVEY

EQUIPMENT: SOLINST # 045650
@ MINIRAE # 015020

CAL → 100.1 ppm CAL GAS LOT # MBI-248-100-18
@ CAL GAS EX: 12/27/22

PTSP TEAM HELD PTSP WITH REDOX TEAM ABOUT ROAD HAZARDS ALONG LEWIS DRIVE AS WELL AS INCREASED BIO HAZARDS NEAR BROWNS CREEK

0800 TEAM ARRIVES ONSITE, HOLDS PTSP AND BEGINS GEARING UP FOR GROUNDWATER GAUGING @

NOTE: SYSTEM WAS DOWN SINCE SATURDAY 8/17/19.

0925 PRODUCT DETECTED IN MW-20, TEAM BAILED PRODUCT FROM MW-20 UNTIL NO PRODUCT DETECTED AND WILL CHECK

BELTON, SC 08/19/19

LEWIS DRIVE / KINDER MORGAN

0925 CONT FOR RECHARGE ON 08/20/19

1000 GROUNDS MAINENANCE BEGINS CLEARING BROWNS CREEK LOCATION.

1200 TEAM BREAKS FOR LUNCH

1020 SW-05 DRY

1100 SW-03 STAFF GAUGE DRY, BUT THERE IS AN ATACENT STREAM TO COLLECT A SAMPLE

1350 MW-26-081919

410 MW-23-081919

410 MW-23-D-081919

1430 MW-41-081919

1435 MW-39-081919

~~1450~~ 1540 ~~MW-51-081919~~

~~1535~~ ~~MW-52-081919~~

1435 SW-01 WL = 0.08'

1510 MW-53-081919

1520 MW-54-081919

1535 MW-52-081919

1540 MW-51-081919

1555 MW-36-081919

1600 MW-55-081919

1605 FB01-081919

BELTON, SC 08/19/19

LEWIS DRIVE / KINDER MORGAN

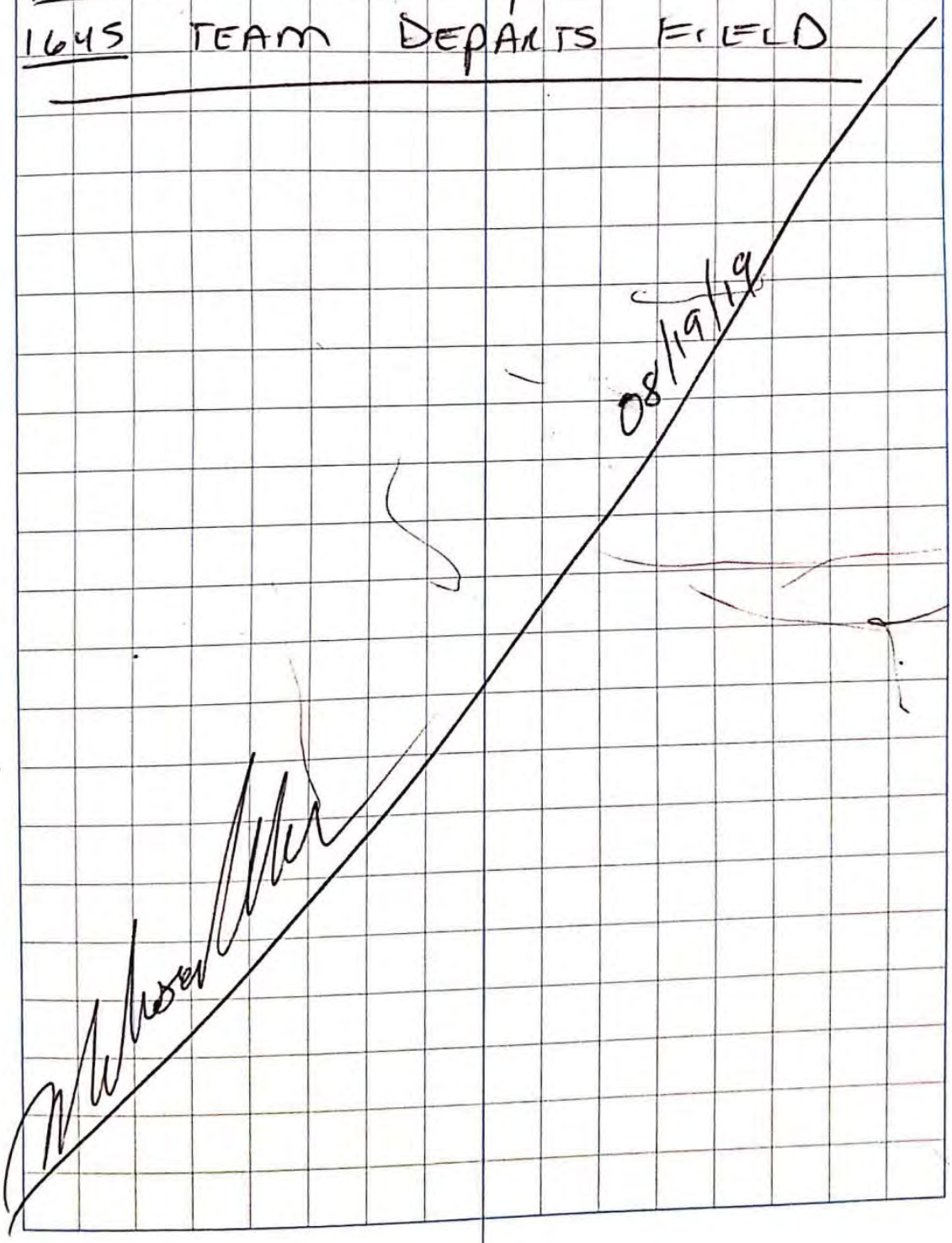
TB01-081919 4v

1300 TEAM RETURNS FROM LUNCH

1025 SW-06 DRY

1645 TEAM DEPARTS FIELD

08/19/19



BELTON, SC 08/20/19
LEWIS DRIVE / KINDER MORGAN

Team: M Warren, B. Garvey, T. Hall
weather: hot & humid; mid-90's.
objective: groundwater sampling with peristaltic pump & typhon pump.
Surface water sampling.

0720 B. Garvey & M. Warren arrived onsite. Standard solutions for calibrating both YSIs.

pH 7.0 - Pine - Lot# 9GB555; ~~Lot #~~ exp 02/2021
pH 4.0 - Pine - Lot# 9GA1010; exp: 01/2021
pH 10.0 - Pine - Lot# 9GA1078; exp: 01/2021
Cond (1.413 mS/cm) - Pine - Lot# 9GA1072; exp: 01/2020
Turb (0.0 NTU) - GFS Chem - Lot# 19040642; exp: 02/2020
Turb (126.0 NTU) - YSI - Lot# 19B1050682; exp: 02/2020
ORP (240 mV) - Pine - Lot# 9GB1010; exp: 11/2019

0820 Calibrate PID - MiniRAE 3000 (# 015020)

Zero cal = 0.0 ppm
Span cal = 100.1 ppm.
Lot info provided on 8/19/19 initial page.

NOTE: TEAM HELD PTSP WITH THE INJECTION TEAM LED BY M. TEKIE.

0820 BEGIN SETUP

BELTON, SC 08/20/19

LEWIS DRIVE / KINDER MORGAN

0750 Calibrate YSI 5-Pro DSS

YSI 37573	pH 7.0	pH 4.0	pH 10.0	Cond 1.413 ms/cm	Turb 0.0 NTU	Turb 126.0 NTU	ORP 240 mV
Before	7.00	3.98	10.01	1.435	-0.80	118.4	237.2
After	7.00	4.00	10.00	1.413	0.00	126.0	240.0

YSI - 37574							
Before	7.24	4.14	10.17	1.277	-1.9	113.1	219.9
After	7.00	4.00	10.00	1.413	0.0	126.0	240.0

0900 SW-08 WL = 0.5'

0915 SW-10 WL = 0.38'

0935 ~~SW11~~ SW11-082019 VOC

0945 SW10-082019 VOC

1000 SW09-082019 VOC

1005 SW08-082019 VOC

0940 MW-37-082019 VOC SULFATE

1020 SW13-082019 VOC SULFATE

PERSULFATE = 0.0 PPM

HYDROGEN PEROXIDE = 0.0 PPM

Fe^{2+} = 0.25 mg/L

1105 SW04-082019 VOC SULFATE

PERSULFATE = 0.0 PPM

HYDROGEN PEROXIDE = 0.0 PPM

Fe^{2+} = 0.00 mg/L

BELTON, SC 08/20/19

LEWIS DRIVE / KINDER MORGAN

1115 [SW02-08 20 19] VOC SULFATE
PERSULFATE = 0.0 PPM
HYDROGEN PEROXIDE = 0.0 ppm
Fe^{2+} = 0.0 mg/L

1145 TEAM BREAKS FOR LUNCH

1245 TEAM RETURNS FROM LUNCH

NOTE WHILE COMPLETING SAMPLE OF MW-37, A REGULATOR VISIT WAS OCCURING, A REGULATOR STOPPED BY TO ASK A FEW QUESTIONS ABOUT SAMPLING TECHNIQUES. WE DISCUSSED THE STRAW METHOD, METHODS OF CONTAINMENT, METHODS OF SAMPLING FOR SULFATE, PERSULFATE, Fe^{2+}, AND HYDROGEN PEROXIDE. TEAM LEFT SHORTLY AFTER TO THE COMPOUND.

1255 TEAM REGAUGES MW-20
DTP = 11.09 DTW = 11.09
A SHEEN OF PRODUCT WAS OBSERVED AFTER GAUGING MW20. PID = 1656 PPM

1300 [MW-20-08 20 19] VOC

BELTON, SC 08/20/19

LEWIS DRIVE / KINDER MORGAN

1310 TEAM BEGINS LOW-FLOW SETUP ON MW-07

1520 SW01-082019 VOC SULFATE

PERSULFATE = 0.0 ppm

HYDROGEN PEROXIDE = 0.0 ppm

Fe^{2+} = 0.0 mg/L

~~1530 SW07-082019~~ DRY

1530 SW-07 DRY

1515 ~~SW~~ MW-07-082019 VOC

1515 VOC MW-07-D-082019

1545 SW12-082019

1555 SW03-082019

1605 SW14-082019 VOC SULFATE

PERSULFATE = 4.0 ppm

HYDROGEN PEROXIDE = 0.0 ppm

Fe^{2+} = 0.0 mg/L

1650 AW-339 20317-082019 PACE

1650 AW-339 20317-082019 CARROL TESTAMERICA

1715 TEAM DEPARTS FIELD

08/20/19

BELTON, SC 08/21/19

LEWIS DRIVE / KINDER MORGAN

TEAM M. WARREN
B. GARVEY
T-HALL

TASK LOW FLOW AND HIGH FLOW
GROUNDWATER SAMPLING

EQUIPMENT YSI SOND ID# 432A
DISPLAY ID# 37573
YSI SOND ID# 37574
DISPLAY ID# 42062
MINIRAE #01502
MINIRAE # 37061
SOLINST # 04560
PERIPUMP # 034010
SOLINST # 033622
TYPHOON # 024078
GENERATOR # 003482

0730 M. WARREN AND B. GARVEY
ARRIVE ON SITE.

0800 T. HALL ARRIVES ON SITE

0810 TEAM HOLDS PTSP W/
M. TECKIE AND REDOX TEAM
TEAM BEGINS TO GEAR
UP FOR GROUNDWATER
SAMPLING

BELTON, SC 08/21/19

LEWIS DRIVE / KINDER MORGAN

0825 CALIBRATIONS (SEE LOT #S YSI 8/20/19)

MINIRAE # 015020 zero cal ⇒ 0.0 ppm

~~MINIRAE # 30-3706~~ span cal ⇒ 100.1 ppm.

MiniRAE # 37061 zero cal ⇒ 0.0 ppm

span cal ⇒ 100.1 ppm

0745 Calibration of YSIs - ProDSS

YSI # 37573 / # 043269

	pH 7.0	pH 4.0	pH 10.0	Cond 1.413	Turb 0.0 NTU	Turb 126.0	ORP 240mV	DO %
~~Before~~								
Before	7.08	4.01	10.01	1.371	1.0	108.7	240.1	107.7
After	7.00	4.00	10.00	1.413	0.0	126.0	240.0	99.5

YSI # 37574 /

Before	7.08	4.14	9.99	1.383	0.9	122.0	242.3	95.8
After	7.00	4.00	10.00	1.413	0.0	126.0	240.0	99.5

0950 MW-46-082119 VOC SULFATE

HYDROGEN PEROXIDE = 0.0 ppm

PERSULFATE = 0.0 ppm

Fe^{2+} = 0.0 mg/L

1020 MW-57-082119 VOC SULFATE

MW-57-D-082119 ~~VOC SULFATE~~

HYDROGEN PEROXIDE = 300 mg/L

SODIUM PERSULFATE = 1,225 mg/L

Fe^{2+} = 0.0 mg/L

BELTON, SC 05/21/19

LEWIS DRIVE / KINDER MORGAN

1145 MW-23-082119 VOC ~~SULFATE~~ ~~HYDROGEN~~ ~~PEROXIDE~~

1200 MW-56-082119 VOC SULFATE

Fe^{2+} = 0.0 MG/L

SODIUM PERSULFATE = 0.0 ppm

HYDROGEN PEROXIDE = 0.0 ppm

1200 S.SMITH TURNED OFF SW AERATORS

1245 TEAM BREAKS FOR LUNCH

1130 FB03-082119

1345 TEAM RETURNS FROM LUNCH

1430 TEAM BEGINS SETUP ON MW-34 FOR TYPHOON PUMPS

1517 MW-34 PURGED DRY, ONE WELL VOLUME WAS PUMPED OVER A COURSE OF 30 MINS. WILL WAIT FOR RECHARGE OVER NIGHT TO SAMPLE WELL.

1530 BEGIN SETUP ON MW-40 FOR TYPHOON PUMP AND BAILING

1610 MW-40-082119

1620 TEAM RETURNS TO COMPOUND

BELTON, SC 08/21/19

LEWIS DRIVE / KINDER MORGAN

TO GEAR DOWN AND PACK SAMPLES. →

✓ TB03 - 082119

1710 B. GARVEY DEPARTS FIELD

1730 M. WARREN AND T. HALL DEPART FIELD →

08/21/19

BELTON, SC 8/22/19

LEWIS DRIVE / KINDER MORGAN

TASK GROUNDWATER SAMPLING

TEAM M. WARREN
B. GARVEY
T. HALL

WEATHER MID 90's, SUNNY, HUMID

EQUIPMENT: SEE DATE 8/21/19.

0730 M. WARREN AND ~~ME~~ B. GARVEY ARRIVE ON SITE AND BEGIN YSI CALIBRATION

0745 Calibrate YSI-ProDSS (#043209 / #37573)

	DO	Cond	0.0 Turb	126 Turb	pH 7.0	pH 4.0	pH 10.0	ORP 240
Before	99.8	1.384	6.0	135.9	6.95	3.96	9.97	232.9
After	99.5	1.413	0.0	126.1	7.00	4.00	10.0	240.0

0810 Calibrate ~~YSI~~ PID - Mini RAE 3000 (#015020)

Zero cal = 0.0ppm

span cal = 100.1 ppm.

0830 TEAM HOLDS PTSP W/ M. TEKLE AND REDEVELOPMENT

0900 TEAM MOVES TO MW-15B TO BEGIN PUMPING WELL

1000 MW-34-082219

1032 FB04-082219

1340 MW-15B-082219

BELTON, SC 08/22/19
LEWIS DRIVE / KINDER MORGAN

— TB04-082219
1110 SW12-082219
1115 TEAM COMPLETES PUMPING AT MW-15B AND WAITS FOR WELL TO RECHARGE FOR A SAMPLE.
1130 TEAM TRANSFERS PURGE WATER TO DRUMS W/IN SECONDARY CONTAINMENT.
1200 TEAM BREAKS FOR LUNCH
1300 TEAM RETURNS FROM LUNCH
1310 TEAM BEGINS SETUP ON MW-12B
1329 BEGIN PUMPING MW-12B
1510 MW-12B-082219
1600 BEGIN SETUP AT 17B.
1640 MW-17B-082219
1700 TEAM RETURNS TO COMPOUND TO GEAR DOWN FOR THE DAY
1800 TEAM DEPARTS FIELD

08/22/19

Objective - Continue injection around Browns Creek and ponds.

Weather - AM: 78°, cloudy, PM: 94°, sunny

Personnel - M. Tekle / Jacobs, R. Sullivan / Redox Tech, G-Ives / Redox Tech I. Blackman / Redox Tech.

Equipment - See 8/20/19

Daily log

0730 - Met Redox Tech at the site

0743 - Conducted H&S meeting (weather, driving, no rushing, communication)

0803 - Calibrate equipment and Redox Tech begin taking Chemical for injection

		Lot #	Eq. date
YSI #	18A00135	See 8/20/19	See 8/20/19
pH4	4.08 → 4.01		
pH7	6.89 → 7.00		
pH10	10.12 → 10.01		
Cond	1.38 → 1.413		
ORP	235 → 240		
DO	98.2 → 100%	Air.	

0828 - Calibrate MultiRAE

Location Lewis Dr. / Belton, SC Date 8/23/19

Project / Client Lewis Dr. / PPL

Daily Log Cont'd

0842 - 100 ppm Isobutylene Lot# Exp. date
VOC = 100.6 ppm CBJ-248-100-5 2/23

0845 - Fresh air Calibration
CO = 0.0 H_2S = 0.0 VOC = 0.0
LEL = 0.0 O_2 = 20.9

0857 - Redox Tech getting ready for injection and mixing chemicals.

0905 - Went to Cupboard creek area to get GPS coordinate for the injection points.

0943 - DPT refusal at 16' bgs on IP64

0950 - Begin injection at IP64
(See injection form)

0957 - Went back to cupboard creek area to finish Collecting GPS coordinates.

1015 - Collected GPS Coordinate of all 40 injection points using Trimble unit with external antena.

1020 - Average accuracy for the points were in 25' and average 20 Satellites on each point.

1022 - Redox finished injection at IP64

Location Lewis Dr. / Belton, SC Date 8/23/19

Project / Client Lewis Dr. / PPL

Daily log cont'd

1103 - Begin injection at IP55
(See injection form)

1108 - NOTE - Injection points close to the 26" pipe line were moved >10 feet from the pipe line.

1148 - Finished injection at IP55.

1205 - Lunch

1210 - M. Tekle went to the hotel to get field test kit

1300 - Back to the Site

1312 - Setup on IP53 for DPT

1335 - DPT refusal at 16' bgs on IP53

1355 - DPT refusal at 8' bgs on IP54

1400 - Called T. Wiley / ATL and decided to put all 360 gal at 6' and 8' bgs on IP54.

1415 - Begin injection at IP54
(See injection form)

1425 - Went to collect groundwater & Surface water parameters (See on page 78)

1443 - Finished injection at IP54

1458 - Begin injection at IP53
(See injection form)

Daily log Cont'd

(47) SW-13	Temp °C	Cond ms/cm	DO mg/L	PH	ORP mV	Fe^{2+} mg/L	mgS_2O_3 mg/L	H_2O_2
SW-01	30.9	0.057	1.41	6.07	78.7	0.25	5.6	0.0
SW-02	28.8	0.052	4.32	6.12	108.9	0.0	2.8	0.0
MW-37	21.7	0.045	3.79	5.00	225.1	0.0	0.0	0.0
MW-38	23.4	0.044	8.21	5.22	182	0.0	1.4	0.0
SW-13	30.6	0.063	4.12	6.33	4.2	0.0	14	0.0

1531 - Finished injection at IP53.

1600 - Clean the site and went to System building to dump IDW.

1637 - Dump purge water IDW in DM09 (in 1 gal.)

1640 - Redox Tech Offsite

1730 - M. Tekle offsite.

Michael Tekle 8/23/19

Location Belton, SC Date 08/19/19

Project / Client Lewis Dr. / PPL

Objective - Setup on Browns creek area and begin injection.

Weather - 83°/94°, P. cloudy

Personnel - M. Tekle / Jacobs
G. Ives / Redox Tech
R. Sullivan / Redox Tech
I - Blackman / Redox Tech

Equipment - Forklift, Geoprobe, and Hand tools.

Daily log

0915 - M. Tekle arrived at Lewis Dr. Site and met Redox Tech and groundwater Sampling team.

0920 - Redox Tech begin moving equipment and setting up around Browns Creek area.

1000 - J. Mendenhall / SC DHEC [redacted] Called and Said he will come to the Site on 8/20 with other project mangers from SC DENR.

1025 - Redox Tech Continue taking equipment around Browns Creek.

1100 - Called D. Lay / Plantation Pipe Line / to come and Check the air bridge Redox Tech planning to build.

Location Belton, SC Date 8/19/19

Project / Client Lewis Dr. / PPL

Daily log Cont'd

(AL) 1110 - D. Lay / PPL Said he will try to come in the afternoon.

1215 - Lunch

1305 - Back from lunch and Redox Tech Still Setting up.

1442 - Redox Tech begin building air bridge.

1525 - D. Lay / PPL came to the Site and agreed to the way Redox is building the air bridge.

1557 - D. Lay / PPL Said he is available to come to the Site to oversee the DPT injection point around the pipe line on Wednesday, 8/21

1600 - Rain and D. Lay / PPL offsite.

1815 - Redox Tech finished building the air bridge and offsite

Michael Tekle 8/19/19

Location Belton, SC Date 8/20/19

Project / Client Lewis Dr. / PPL

Objective - Begin DPT injection on Browns creek area on points far from the pipeline.

Personnel - M. Tekle / Jacobs
B. Garvey / Jacobs
M. Warren / Jacobs
T. Hall / Jacobs
R. Sullivan / Redox Tech
I. Blackman / Redox Tech
G. Ives / Redox Tech

Weather - AM - 70°, Cloudy, PM - 84°, M. Cloudy

Equipment - Forklift, Geoprobe, pump, YSI, MultiRAE, pump, and hand tools

Daily Log

0730 - M. Tekle arrived onsite and met with M. Warren and B. Garvey.

0732 - Redox Tech LLC onsite

0745 - Conducted H&S meeting (slip, trip, falls, weather, communication, biological)

0820 - Redox Tech taking equipment and Chemical to Browns Creek area

0835 - Calibrate MultiRAE

Composite gas		Lot #	Exp. date
CO = 50	H_2S = 10.1	DBJ-413-18-40	4/21
LEL = 50	O_2 = 18.0		

Location Belton, SC Date 8/20/19

Project / Client Lewis Dr. / PPL

Daily log cont'd

0847 -	100ppm Isobutylene VOC = 100.1 ppm	Lot # CBJ-248-100-5	Exp. date 2/2
0852 -	Fresh air Calibration		
	CO = 0.0	O_2 = 20.9	VOC = 0.0
	LEL = 0.0	H_2S = 0.0	
0905 -	Redox Tech begin hammer probing and dpt injection points.		
0915 -	DPT IP 41 to 20' bgs		
0923 -	DPT IP 56 to 20' bgs		
0938 -	DPT IP 57 to 20' bgs		
0946 -	DPT IP 58 to 20' bgs		
1005 -	DTW on MW-37 = 3.32' btoc		
1025 -	DTW on MW-38 = 1.80' btoc		
1030 -	Putted absorbent boom (new pig) downhill between the injection points and the creek (Browns Creek).		
1035 -	NOTE - Redox Tech used air bridge to cross the 26" pipe line.		
1042 -	Redox begin mixing Chemical		
1045 -	Ed Mendenhall (SC DHEC and other folks from SC DHEC onsite.		

Location Belton, SC Date 8/20/19

Project / Client Lewis Dr. Site / PPL

Daily log Cont'd

1055 - Went through Chemical mixing, Substrate proportion, and injection process with SC DHEC team.

1125 - Redox Tech finished mixing Chemical.

1145 - Setup to start injection at ~~IP41~~ IP58.

1149 - Redox Tech is having issue with the pump and decided to get another pump.

1205 - Begin injection at ~~IP41~~ (HT) IP58

1250 - Started raining and SC DHEC team OFFsite.

1255 - SC DHEC team was interested on how we are doing the injection, side effect of the injection to the ecosystem specifically about beavers and asked if we have done any risk assessment. The team also discussed about daylighting procedure, why we selected the specific Chemical (Injectate OBC), driller license grade, and general H&S procedures during chemical mixing and injection.

Location Belton, SC Date 8/20/19

Project / Client Lewis Dr. /PPL

~~Daily log Cont'd~~

1310 - Rain Stopped.

1316 - Finished injection at ~~IP41~~ IP58 (HT) (See injection form)

1345 - Begin injection at ~~IP58~~ (HT) IP41 (See injection form)

1357 - ~~Begin inject~~ (HT) Begin raining.

1405 - Stopped raining.

1520 - Finished injection at ~~IP58~~ IP41 (HT)

1539 - Begin injection at IP57 (See injection form)

1657 - Bubbling on the ground ~ 6' away from IP57 at 8' bgs.

1700 - Pulled rod to 6' bgs and continued injection at IP57.

1703 - Start seeing bubbling again on the ground and decided to setup on IP56 and inject the remaining volume from IP57 on IP56 plus total volume for IP56.

1705 - Begin injection at IP56. (See injection form)

1720 - Called D. Lay/PPL and Confirmed meeting him at the site tomorrow on 8/21 at 7:30 AM.

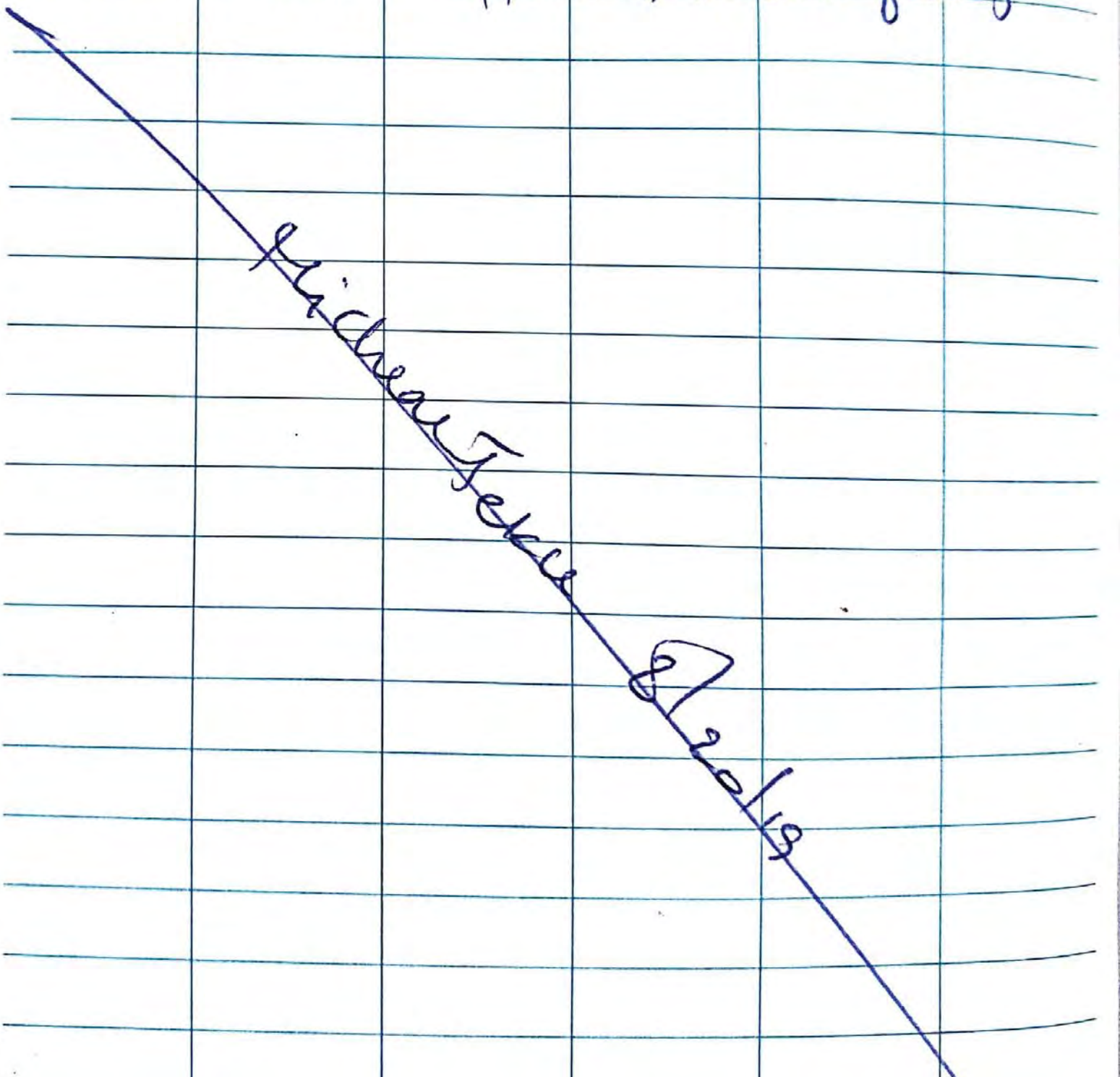
Daily log cont'd

1803 - DTW on MW 37 = 3.84' btoc
DTW on MW 38 = 0.5' btoc

1858 - Finished injection at IP 5b

1910 - Put PID on charge

1918 - Redox offsite and end of day.



Objective - Begin injection on locations close to the pipe line.

Weather - AM: 73°, Sunny, PM: 93°, Sunny

Personnel - See 8/20/19

Equipment - See 8/20/19

Daily log

0730 - Mr. Tekle onsite and met Redox Tech

0740 - Filled PTSP and conducted H&S meeting (driving, biological, working around pipe line, Slip, trip & falls, Communication)

0743 - Dustin Lay / PPL onsite.

0800 - Tyler Hall / Jacobs onsite.

0815 - Redox begin Setting up to start injection on points between the pipe line.

0825 - Calibrate MultiRAE

Composite gas		Lot #	Exp. date
CO = 50	H_2S = 10	PBJ-413-18-10	4/21
LEL = 50	O_2 = 18		

100 ppm Isobutylene	Lot #	Exp. date
VOC = 100 ppm	CBJ-248-100-5	2/23

Location Belton, sc Date 8/21/19

Project / Client Lewis Dr. / PPL

Daily log cont'd

0840 - After measuring the distance between the pipe line and the location of the proposed injection points between the pipe line, D. Lay / PPL called B. Scott / PPL Corrosion Control and B. Scott Said the proposed locations are too close to the pipe line and the change in pH within the soil may cause Corrosion.

0850 - Kinder Morgan Corrosion Control team Said they don't feel Comfortable doing the injection between the pipeline.

0852 - Called T. Wiley / Jacobs and let him know about the Kinder Morgan Corrosion Control team opinion.

0855 - T. Wiley Said he will Call J. Aycock to let him know.

0900 - Skeeter / PPL onsite to oversee the injection between the pipe line.

0950 - J. Aycock called Tim Bentz / PPL Corrosion Control team Supervisor and field team was told to perform injection between the pipe line.

Location Belton, sc Date 8/21/19

Project / Client Lewis Dr. / PPL

Daily log Cont'd

0955 - PPL Said we can do injection between the 26" and 14" pipe lines but not between the 14" and 10" line because there is not enough space between the 14" & 10" pipe lines.

1017 - Begin DPT at IP47, IP51 and IP60 by clearing 0-5' bgs using hand auger.

1042 - Hand augered 0-5' bgs on IP47, 51, and 60.

1048 - DPT refusal at 14' bgs on IP60.

1055 - DPT refusal at 18' bgs on IP51.

1107 - DPT refusal at 12.5' bgs on IP47.

1111 - Begin injection at IP47 (See injection form)

1200 - D. Lay and Skeeter / PPL went for lunch

1227 - Daylighting when injecting at 8' bgs on IP47.

1255 - D. Lay and Skeeter back onsite.

1305 - Collected Sample from a puddle of water down gradient of the injection point using persulfate test kit.

Rain in the Rain

Location Belton, SC Date 8/21/19
Project / Client Lewis Dr. / PPL

Daily log Cont'd
1315 - Persulfate > 300 mg/L
1325 - Collected surface water sample from Browns creek for persulfate test kit.
1328 - Persulfate = 20 mg/L
1335 - Collected groundwater from MW-38 using bailer.
1348 - Persulfate = 7 mg/L
1400 - Called T. Wiley / ATL and talked about the persulfate concentration in the groundwater and surface water.
1405 - T. Wiley said he will call J. Aycock to let him know.
1410 - M. Strong / CLR called and talked about the progress of the work and persulfate detection in the surface and groundwater.
1435 - After talking to J. Aycock, T. Wiley said Jerry is thinking the injection couldn't get to the creek this fast and to rely on visual inspection of the creek than the field test kit.
1438 - Decided to try to inject at IP51 (down gradient of IP47).

Location Belton, SC Date 8/21/19
Project / Client Lewis Dr. / PPL

~~Daily log Cont'd~~
1440 - Redox break for lunch
1510 - Redox back from lunch.
1515 - Skeeter / PPL offsite.
1528 - Begin injection on IP51 (see injection form)
1540 - Daylighting when injecting at 18' bgs on IP51.
1600 - Decided not to try other interval because of the risk of daylighting and how close the point is to the surface water.
1615 - Drove the rig on the air bridge to setup on IP44
1625 - DPT refusal at 7' bgs on IP44
1637 - moved the rig and try DPT
1645 - DPT refusal at 7' bgs
1700 - moved the location for IP44 5' from the orgival location & DPT.
1715 - DPT refusal at 11' bgs
1725 - Decided to clean the site and start injection on IP44 tomorrow.
1825 - Redox offsite and end of day.

Michael Tekle 8/21/19

Location Belton, SC Date 8/22/19

Project / Client Lewis Dr. / PPL

Objective - Continue DPT injection around Browns Creek.

Weather - AM: 75°, Cloudy, PM: 95°, Sunny

Personnel - M. Tekle / Jacobs, B. Garvey / Jacobs, M. Warren / Jacobs, T. Hall / Jacobs, R. Sullivan / Redox Tech, G. Ives / Redox, I. Blackman / Redox Tech.

Equipment - See 8/20/19

Daily log

0730 - Arrived at the site and met Redox Tech.

0742 - Conducted H&S meeting (no rushing, weather, drink water, slip, trip, falls, traffic, biological)

0805 - Redox begin setting up for injection and Jacobs team begin calibrating equipment.

0830 - T. Hall / Jacobs onsite.

0835 - Calibrate YSI #

YSI #		Lot #	Exp. date
PH4	4.16 → 4.01	99A1016	01/21
PH7	6.83 → 7.00	99A1078	1/21
PH10	10.0 → 10.01	99A1072	1/20
Cond	1.38 → 1.413	99B555	02/21
ORP	283 → 240	99B1016	11/19

Location Belton, SC Date 8/22/19

Project / Client Lewis Dr. / PPL

Daily log cont'd

0850 - Calibrate MultiRAE

Composite gas		Lot #	Exp. date
CO = 50	O_2 = 18.1	DBJ-443-18-10	4/21
LEL = 50	H_2S = 10.1		
100 PPM Isobutylene		Lot #	Exp. date
	VOC = 100.8	CBJ-248-100-5	2/23

0905 - Fresh air Calibration

CO = 0.0 O_2 = 20.9 VOC: 0.0

LEL = 0.0 H_2S = 0.0

0915 - Redox Setup on IP44 for injection

0927 - Pressure building on IP44 to 110 psi.

0930 - Steady pressure of 110 psi on IP44 and decided to stop pumping and move to the next location.

0940 - DPT to 20' bgs on IP42

1024 - Begin injection at IP42 (See injection form)

1035 - Talked to J. Ford / RAL about the progress on Browns Creek area.

1104 - Finished injection at IP42.

Location Belton, SC Date 8/22/19

Project / Client Lewis Dr. / PPL

Daily Log Cont'd

1130 - Discussed with Redox Tech about doing the points close to the creek next just in case if there is any daylighting; we will be able to put the remaining volume on the locations upgradient from the creek.

1148 - Redox break for lunch.

1215 - After talking to T. Wiley and J. Ford, team decided to put a forth row of 6 injection points upgradient of Browns creek ~~for the points~~ as a replacement for the points between and around the pipeline.

1248 - Redox back from lunch

1300 - Setup on IP63 for DPT

1310 - Begin DPT on IP63

1315 - Collected groundwater parameter readings

	Temp °C	Cond ms/cm	DO mg/L	PH	ORP mv
SW-13	29.7	0.082	1.54	6.70	-70.3
SW-04	31.1	0.052	6.39	6.52	65.5
SW-02	27.7	0.058	3.61	6.29	20.3
MW-37	21.3	0.051	3.32	5.02	add.1
MW-38	22.3	0.034			

Location Belton, SC Date 8/22/19

Project / Client Lewis Dr. / PPL

Daily Log Cont'd

1350 - DPT to 20' bgs on IP63

1403 - Begin injection on IP63 (See injection form)

1430 - Groundwater came up to the top of casing on MW-38

1432 - Stopped injection.

1500 - Putted a stronger well plug with a key to secure MW-38.

1507 - Resumed injection on IP63.

1516 - Finished injection on IP63

1520 - Setup on IP62 for DPT

1528 - DPT refusal at 18' bgs on IP62

- ~~Daylighting at 10' bgs on IP63~~

1532 - Begin injection on IP62. (See injection form)

1602 - Daylighting at 10' bgs on IP62

1610 - Pulled rod to 8' bgs and continue injection.

1612 - Daylighting at 8' bgs on IP62

1615 - Decided to move to the next IP.

1620 - Setup on IP43 for DPT

1630 - DPT to 20' bgs on IP43

Daily Log cont'd

1640 - Collected water parameter and field test kit from surface water sample locations and monitoring wells.

(WT) SW-13	Temp °C	Cond ms/cm	DO mg/L	PH	ORP	Fe^{2+} mg/L	$H_2S_{(g)}$ mg/L	$H_{2(g)}$ mg/L
SW-04	29.0	0.095	3.37	6.43	-34.0	0.5	3.5	0.0
SW-02	29.6	0.053	5.28	6.29	174.1	0.0	0.0	0.0
MW-37	21.7	0.046	3.34	5.20	124.6	0.0	1.4	0.0
MW-38	23.4	0.044	5.32	5.48	198.1	0.5	1.4	0.0
SW-13	28.9	0.126	2.03	5.1	-28.7	0.0	n6mg/L	>300

1645 - Begin injection at IP43 (See injection form)

1727 - Finished injection

1740 - Secured the site and went to system building to dump IDW water.

1800 - Redox Tech offsite

1840 - Dump IDW water in the drum and offsite.

Michael Tekle

MONDAY

Location BELTON, SC Date 9/16/19

Project / Client LEWIS DRIVE / KINDER MORGAN

TEAM: M. WARREN (FTL), T. HALL, A. DENNIS, C. SUTTON

TASK GROUNDWATER GAUGING, SURFACE WATER GAUGING, PRODUCT RECOVERY

WEATHER HIGH 90'S, SUNNY, HOT

PTSP HYDRATION AND HIGH HEAT

EQUIPMENT (1) MINIRAE # 045285
(2) MINIRAE # 20836
CAL GAS LOT # MB1-248-100-10
CAL GAS EX: 12/27/2022

CALIBRATION MINIRAE #1 → 100.0 ppm

CALIBRATION MINIRAE #2 → 100.1 ppm

0900 TEAM ARRIVES ON SITE AND HOLDS PTSP ABOUT HIGH HEAT AND HYDRATION. (2)

1200 BREAK FOR LUNCH

1300 RETURN FROM LUNCH.

1530 COMPLETE GAUGING, SET UP FOR PRODUCT RECOVERY

1545 BEGIN PRODUCT RECOVERY.

NOTE: SW-05 WAS DRY
SW-03 WAS DRY AT THE STAFF GAUGE.
WATER STREAM IS

Location BELTON, SC Date 09/16/19

Project / Client LEWIS DRIVE / LENNAR MORGAN

NOTE CONT: ADJACENT TO STAFF GAUGE, SW-03 SAMPLE WILL NOT BE COLLECTED.

MW-19 - TOO DRY TO SAMPLE

MW-17 - TOO DRY TO SAMPLE

MW-22 - TOO DRY TO SAMPLE

MW-44 - TOO DRY TO SAMPLE

MW-13 - TOO DRY TO SAMPLE

MW-03 - TOO DRY TO SAMPLE

MW-30 - TOO DRY TO SAMPLE

MW-45 - LOW FLOW

MW-07 - LOW FLOW

1730 TEAM COMPLETES PRODUCT RECOVERY AND RETURNS TO COMPOUND TO GEAR DOWN.

1800 TEAM DEPARTS FIELD

09/16/19

Location BELTON, SC Date 09/17/19

Project / Client LEWIS DRIVE / LINDER MORGAN

TEAM: M. WARREN, A. DENNIS, T. HALL, C. SUTTON

TASK: LOW FLOW GROUNDWATER GAUGING, MISC. TASKS

WEATHER: MID 80'S, SUNNY, HUMID

PTSP: BUG SPRAY, TICK CHECKS, CARE DURING SW INSPECTIONS

EQUIPMENT: SEE PAGE 88.

SOLINST #1 033622

SOLINST #2 045657

YSI HANDHELD #1 041061

YSI HANDHELD #2 ~~043269~~ 036544 (W)

YSI PROBE #1 043269

YSI PROBE #2 041055

CALIBRATION SOLUTIONS

SOLUTION	LOT #	EXP
126.0 NTU	19B1905008	02/20
0 NTU	1904004	02/20
PH 7	96B555	02/21
PH 4	96A1010	01/2021
PH 10	96A1076	1/21
240.0 mV	96B1010	11/19
1.413 mS/cm	96A1072	1/20 (W)

Location BELTON SC Date 09/17/19

Project / Client LEWIS DRIVE / KINDER MORGAN

YSI # 1 CALIBRATION	
ONTU	0.0
126. ONTU	125.8
PH 4	4.00
PH 7	6.94
PH 10	10.00
1.413 ms/cm	1.414
240.0 mV	239.9
O_2	100.2
YSI # 2 CALIBRATION	
ONTU	0.0
126. ONTU	126.0
PH 4	4.00
PH 7	7.00
PH 10	10.01
1.413 ms/cm	1.413
240. mV	235.8
O_2	100.5
MINI RAE CALIBRATION	
# 045255 →	100.1 ppm
# 20838 →	100.0 ppm
EQUIPMENT	
Pump # 1	031271
Pump # 2	014702

Rite in the Rain.

Location BELTON, SC Date 09/17/19

Project / Client LEWIS DRIVE/KINDER MORGAN

✓0800 FB01-091719

✓0950 MW-45-091719 VOC

0900 START PUMP AT MW-07, DRAWDOWN IS QUICK WITH AIR BUBBLES IN TUBING, MAKE ADJUSTMENTS, NO YSI PARAMETERS COULD BE COLLECTED UNTIL WELL WENT DRY AT 0915. NEED TO RETURN AND RECHARGE WELL BEFORE SAMPLING WITH A BAILER.

NOTE: STREAM AERATORS WERE TURNED OFF AT 1600 ON 09/16/19.

✓1050 ~~1035~~ MW-46-091719 VOCs, SULFATE

Fe^{2+} = 0.0 mg/L

HYDROGEN PEROXIDE = 5.0 ppm

PERSULFATE = 2.8 ppm

✓1050 MW-57-091719 VOCs, SULFATE

✓1055 MW-57-D-091719 VOC

Fe^{2+} = 0.0 mg/L

HYDROGEN PEROXIDE = 1,250 ppm.

NOTE: HYDROGEN PEROXIDE WAS CALCULATED TO 1,250 ppm

Location BELTON, SC Date 09/17/19

Project / Client LEWIS DRIVE / LINDEN MORGAN

NOTE CONT: BASED ON A 1:25 DILUTION OF THE SAMPLE PERSULFATE = 70ppm+

NOTE AFTER A 1:25 DILUTION OF THE SAMPLE, CONCENTRATION WAS STILL GREATER THAN 70 ppm. A GREATER DILUTION COULD NOT BE CALCULATED ACCURATELY PAST A 1:25 DILUTION WITH THE EQUIPMENT ON SITE. (2)

✓1150	MW-56-091719	VOC, SULFATE
	Fe^{2+} = 0.0 mg/L	
	HYDROGEN PEROXIDE = 0.0ppm	
	PERSULFATE = 0.0ppm	
✓1405	MW-43B-091719	VOCs
✓1415	MW-43-091719	VOCs
✓1440	MW-24-091719	VOCs
✓1450	MW-24B-091719	VOCs
✓1530	MW-28-091719	VOCs
✓1545	MW-49-091719	VOCs
✓1600	MW-35-091719	VOCs
NO TIME	TB01-091719	TRIP BLANK
1550	MW-37-091719	VOCs, SULFATE

Rite in the Rain.

Location BELTON, SC Date 09/17/19

Project / Client LEWIS DRIVE / KINDER MORGAN

1450 MW-38-091719 VOC, SULFATE

1630 TEAM RETURNS TO COMPOUND TO ORGANIZE EQUIPMENT AND PACK COOLERS

NOTE:

MW-37

Fe^{2+} = 0.0 mg/L

HYDROGEN PEROXIDE = 0.0 PPM

PERSULFATE = 0.0 PPM

MW-38

Fe^{2+} = 0.0 mg/L

HYDROGEN PEROXIDE = 30.0 PPM

PERSULFATE = 0.0 PPM

Invo: KINCH2MGA-LEWIS Date : 11Sep19
Customer : P729890 Weight : 10 LBS
Phone : (615)758-5858 COD :
Sat Del : N DV :

Shipping : 0.00
Special : 0.00
Handling : 0.00
0.00 Total : 0.00

Svcs: STANDARD OVERNIGHT
TRCK: 1203 5780 4396

1645 MW-20: BEGIN ~~PURGING~~ (MW) BAILING PRODUCT FROM MW-20. WELL WAS BAILED 10 TIMES, AND A THIN LAYER OF PRODUCT WAS STILL DETECTED AT 0.01 ft.

DTP= 12.22

DTW= 12.23

Location BELTON, SC Date 09/17/19

Project / Client LEWIS DRIVE / RINDER MORGAN

1700 T. HALL DEPARTS FIELD TO DROP OFF SAMPLES

1730 M. WARREN, A. DENNIS AND C. SUTTON DEPART FIELD

09/17/19

Location BELTON, SC Date 09/18/19

Project / Client LEWIS DRIVE / KINDER MORGAN

TEAM M. WARREN, A. DENNIS, C. SUTTON

TASK GW AND SW SAMPLING

WEATHER MID 70'S, SUNNY, HUMID

EQUIPMENT SEE PG 90 AND 91

PTSD BLACK WIDOWS / HYDRATION

____ TEAM ARRIVES ON SITE AND HOLDS PTSD

MINI RAE CALIBRATION → 100 ppm

YSI #2 CALIBRATION

ONTU → 0

126.0 NTU → 125.3

pH 4 → 3.87

pH 7 → 7

pH 10 → 10

1.413 ms/cm → 1.414

240.0 mV → 232.5

O_2 → 101.0

0747 MW-07: DTP = 12.85 DTW = 12.86 Product in well, bailed well Dry; wait for well to recharge High-concentrations of sediment in water.

0826 MOVE TO MW-08

Location BELTON, SC Date 09/18/19

Project / Client LEWIS DRIVE / KINDER MORGAN

✓0835	MW-08-091819	VOC
✓0850	MW-18-091819	VOC
	☆ DILUTE SAMPLE ☆	
✓0900	MW-16-091819	VOC
✓0910	MW-06B-091819	VOC
✓0920	MW-06-091819	VOC
✓0935	MW-09B-091819	VOC
✓0940	MW-09-091819	VOC
✓1015	MW-02B-091819	VOC
✓1020	MW-02-091819	VOC
✓1050	MW-04-091819	VOC
✓1100	MW-05-091819	VOC
✓1130	MW-32-091819	VOC
✓1145	MW-10-091819	VOC

Calibration Solutions

Solution	Lot #	Exp
126.0 NTU	19B1905008Z	2/20
0 NTU	19040042	2/20
PH7	96B555	2/21
PH4	96A1010	2/21
PH10	96A1078	1/21
240.0 MV	96B141	11/19
1.413 MS/cm	96A1072	1/20

✓1400 FB02-091819

Rite in the Rain

Location BELTON, SC Date 09/18/19

Project / Client LEWIS DRIVE / KINDER MORGAN

✓ NOTIME	TB02-091819	
✓ 1420	MW-47-091819	VOC
✓ 1430	MW-31-091819	VOC
✓ 1445	MW-48B-091819	VOC
✓ 1440	MW-33T-091819	VOC
✓ 1450	MW-50B-091819	VOC
✓ 1510	MW-13B-091819	VOC
✓ 1520	MW-14B-091819	VOC
✓ 1530	MW-14-091819	VOC
1515	SW13-091819	VOC SULFATE
	Fe^{2+} = 1.5	
	HYDROGEN PEROXIDE = 0	
	PERSULFATE = 0	
1450	SW09-091819	VOC
1430	SW11-091819	VOC
1440	SW10-091819	VOC
1500	SW08-091819	VOC
1640	REPLACED LOCK ON RW-14	
1600	A. DENNIS BEGINS COLLECTION OF TROLL DATA.	
NOTIME	TB03-091819	
1555	SW04-091819	VOC SULFATE
	Fe^{2+} = 0	
	HYDROGEN PEROXIDE = 0	
	PERSULFATE = 0	

Location BECTON, SC Date 09/18/19

Project / Client LEWIS DRIVE/KINDER MORGAN

1650 SW12-091819 VOC SULFATE

1605 SW02-091819 VOC SULFATE

SW12 POST INJECTION

$Fe^{2+} = 0$

PERSULFATE = 0

HYDROGEN PEROXIDE = 0

SW02 POST INJECTION

$Fe^{2+} = 0$

PERSULFATE = 0

HYDROGEN PEROXIDE = 0

1625 SW01-091819 VOC SULFATE

$Fe^{2+} = 0$

PERSULFATE = 0

HYDROGEN PEROXIDE = 0

1725 SW14-091819 VOC SULFATE

$Fe^{2+} = 0$

Persulfate = 0

Hydrogen Peroxide = 0

0800 A&D STAFF SHOW UP ON SITE, ONE STAFF MEMBER LEFT TO PICK UP EQUIPMENT TO PURGE POLY TANKS STRAIGHT INTO DRUMS WITHOUT ANY LEAKS. ONE STAFF MEMBER

Rite in the Rain

100 Location BELTON, SC Date 09/18/19

Project / Client LEWIS DRIVE / KINDER MORGAN

STAYED BEHIND. ANOTHER A+D EMPLOYEE ARRIVED TO SEAL THE BASE OF THE POLY TANKS. TEAM COMPLETED THE TRANSFER AND CLEANING OF THE POLY TANKS TO 9 TOTAL DRUMS (DM13-DM21). THE CONTENTS WERE LISTED AS SEDIMENT / RINSE WATER, AAND D DEMOBILIZED FROM THE SITE AT 1230.

1520 GAUGE MW-20
DTP = 11.94
DTW = 12.00

1830 A. DENNIS COMPLETES TROLL DATA COLLECTION. L. SUTTON COMPLETES HYDRASLEEVE WEIGHT DECON WITH LIQUINOX AND D WATER,

1845 TEAM DEPARTS FIELD.

Location: Belton, SC
Date: 09/14/19

Project / Client: Lewis Drive / Kinder Morgan

Team: M. Warren, A. Dennis, C. Sullivan, T. Hall

Task: Hydrasleeve Sampling, Site Inspection

Weather: Mid - 70s, overcast

PTSP: Biological hazards, pinch points

0700: Onsite; equipment check

0710: PTSP and safety meeting

0730: Begin ~~sampling~~ Gauging MW-11 Product level at 30.43. Bailed well 6 times to remove product. ~~W~~ Depth to water at 30.12 ft below top of casing after Bailing; No product detected after 6 Bails.

0830 Replace sock on RS-08 (sock weight 95 grams)

length in rope on RT-1C (13.45')

RT - 1B - (13.46')

RT - 1A - (13.42')

RS - 08 - (13.81')

0950 low-flow on MW-07

Depth to product 12.89 DTW - 12.90

✓0950 [MW-07-091919] Dilute Sample

0855@ Dilute Sample VOC

0855 ~~0850~~ [MW-29-091919] VOC

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Location BELTON, SC Date 09/19/19

Project / Client LEWIS DRIVE / KINDER MORGAN

0910	MW-26-091919	VOC
0920	MW-26B-091919	VOC
0935 ~~0930~~	MW-23-091919	VOC 0935
0930 ~~0935~~	MW-23-D-091919	VOC 0930
0945	MW-23B-091919	VOC
0955	MW-45B-091919	VOC
1010	MW-21-091919	VOC
1025	MW-17B-091919	VOC
1050	MW-44B-091919	VOC
1100	MW-01-091919	VOC
1110	MW-01B-091919	VOC
1120	MW-27-091919	VOC
1125	MW-27B-091919	VOC
1330	MW-12-091919	VOC
1335	MW-12B-091919	VOC
1345	MW-25-091919	VOC
1350	MW-25B-091919	VOC
1405	MW-15-091919	VOC
1420	MW-15S-091919	VOC
~~1425~~	~~FB04-091919~~	~~VOC~~
NO TIME	TB04-091919	TB
1425	FB03-091919	VOC
1515	MW-11-091919	VOC
1535	MW-36-091919	VOC

Location BELTON, SC Date 09/19/19

Project / Client LEWIS DRIVE / KM

1540	MW-36-D-091919	VOC
1545	MW-36B-091919	VOC
1445	MW-41-D-091919	VOC
1440	MW-41-091919	VOC
1455	MW-42-091919	VOC
~~1455~~	~~MW~~	
1435	MW-40-091919	VOC
1425	MW-34-091919	VOC
1430	MW-39-091919	VOC
NO TIME	TB05-091919	@VOC TB
1600	TEAM RETURNS TO COMPOUND TO ORGANIZE EQUIPMENT AND MATERIALS, PACK COOLERS, AND DECON WEIGHTS WITH LIQUINOX AND DI WATER.	
1645	TEAM DEPARTS FIELD	

09/19/19

Rite in the R

Location BELTON, SC Date 10/22/19

Project / Client LEWIS DRIVE / KINDER MORGAN

TASK SURFACE WATER SAMPLING

TEAM M. WARREN, T. HALL

WEATHER MID 60's CLOUDY <1.0" PREC.

EQUIPMENT YSI PRO PLUS SONDE

DISPLAY ID# 429119

HACH 2100Q # 37430

PTSP SLIPS TRIPS AND FALLS AFTER SLIGHT PRECIPITATION

CALIBRATION SOLUTIONS YSI:

PH4 LOT # 96A1010 EXP: 01/2021

PH7 LOT # 96B555 EXP: 02/21

PH10 LOT # 96A1078 EXP: 1/21

240.0mV LOT# 96B1010 EXP: 11/19

1.413 mS/cm LOT# 96A1072 EXP 1/20

HACH 2100Q CALIBRATION

10 NTU	LOT# A8320	2/20
20 NTU	LOT# A8263	1/20
100 NTU	LOT# AB264	1/20
800 NTU	LOT# A8345	3/20

0900 T. HALL ARRIVES ON SITE

0920 M. WARREN ARRIVES ON SITE

NOTE: LAST RAIN EVENT OCCURED 10/19/19. .21" RAINFALL ON 10/22/19. (0.1" RAIN)

Location BELTON, SC Date 10/22/19

Project / Client LEWIS DRIVE / KINDER MORGAN

HACH 2100Q CALIBRATION

10 NTU → 10.1

20 NTU → 19.7 NTU

100 NTU → ~~100~~ 101 NTU

800 NTU → 803 NTU

YSI PRO PLUS CALIBRATION

DO → 91.2% → 100.0%

PH7 → 7.04 → 7.00

PH10 → 10.22 → 10.00

PH 4 → 3.72 → 4.00

1.413 ms/cm → 1.330 → 1.412

ORP → 244.6 → 240.0

1100 TEAM GEARS UP TO SAMPLE

✓ 1150	SW11 - 102219	RUNNING WATER, NO SHEEN
✓ 1205	SW10 - 102219	ORANGE FLOC WL = 0.4
✓ 1215	SW09 - 102219	LIGHT BIO SHEEN
✓ 1235	SW08 - 102219	NO SHEEN WL = 0.7
✓ 1245	SW13 - 102219	NO SHEEN

PH = 6.04

TURBIDITY = 10.64

CONDUCTIVITY = 192.0

TEMP = 19.7

DO = 1.20

ORP = 20.4

Rite in the Rain

106

Location BELTON, SC Date 09/22/19

Project / Client LEWIS DRIVE / KINDER MORGAN

✓1425 SW04 - 102219 ALGAE, NO SHEEN

PH = 6.28

TURB = 6.58

COND = 61.9

TEMP = 19.8

DO = 4.91

ORP = 138.8

✓1435 SW02 - 102219 NO SHEEN OIL = 1.55

PH = 6.14

TURB = 7.47

COND = 60.2

TEMP = 19.7

DO = 5.22

ORP = 145.7

✓1445 SW01 - 102219 NO SHEEN OIL = 0.16

PH = 6.58

TURB = 9.48

COND = 0.044

TEMP = 21.6

DO = 8.43

ORP = ~~94~~ 94.5

✓1450 SW07 - 102219 ★ SMALL POOL NO SHEEN

Location BELTON, SC Date 09/22/19

Project / Client LEWIS DRIVE / KINDER MORGAN

✓1500	SW12 - 102219	NO SHEEN,
	PH = 6.02	NO ODOR
	TURB = 10.4	
	COND = 0.048	
	TEMP = 18.5	
	DO = 3.11	
	ORP = 107.7	
✓1505	SW03 - 102219	NO SHEEN DRY AT WL = ~~STAFF GAUGE~~
✓1525	SW14 - 102219	ALGAE, NO SHEEN
1530	SW05 - DRY	★ SEE PHOTO
NO TIME	TB01 - 102219	
1535	TEAM RETURNS TO COMPOUND TO PACK COOLERS	
1600	DEPART FIELD (M. WARREN)	
1630	DEPART FIELD (T. HALL)	

Rite in the Rain

108

Location BELTON, SC Date 11-4-19

Project / Client LEWIS DRIVE / KM

PERSONNEL: T. HALL / CVL, COLLIN SUTTON / AR
ALEX FURNESS / ATL

WEATHER / SUNNY 61° / 40°F

OBJECTIVE: GAUGING AND H/S SAMPLING

0900: PERSONNEL ONSITE

0915: A. FURNESS SIGNED H+S PLAN

0920: PTSP + SWP SIGNED.

0930: CALIBRATE MINI RAE # 37722
VOC 0 → 100
CALIBRATE MINI RAE # 41736
VOC 0 → 100
CAL GAS LOT # MB1-248-100-10
EXP. 12/27/2020

1000: PRE FILL LABELS AND START PAPERWORK FOR SAMPLING

1020: RUN TO GAS STATION TO GET ICE FOR SAMPLES.

1040: START COLLECTING SAMPLES.

1055: COLLECT MW-20-110419 VOC
DILUTE SAMPLE

1120: COLLECT MW-26-110419

1030: AERATORS SHUT OFF FOR SW SAMPLE

1200: COLLECT MW-54-110419

1210: COLLECT MW-53-110419

Location BELTON, SC Date 11-4-19

Project / Client LEWIS DRIVE / KM

1225: COLLECT	MW-52-110419
1235: COLLECT	MW-51-110419
1240: LUNCH	
1330: RETURN	FROM LUNCH
1355: COLLECT	MW-55-110419
1405: COLLECT	MW-36-110419
1435: COLLECT	MW-41-110419
1450: COLLECT	MW-39-110419
1540: COLLECT	FB01-110419
NO TIME	TB01-110419

1545: PACK COOLER.

1600: REMOVE SOCKS FROM RS-04, RT-1A, RT-1B, RT-1C, NO SOCK IN RT-2K

1620: C. SUTTON OFFSITE TO TAKE COOLER TO FEDEX. TRK# 120357804400

1640: T. HAM & A. FURNESS OFFSITE, SITE SECURE.

11-4-19

Rite in the Rain

0830: CALIBRATE MINIRAE #37722
0 → 100.0 ppm PASS
CALIBRATE MINIRAE # 041736
0 → 100.0 ppm PASS
CAL GAS LOT # MB1-248-100-10
EXP. 12/27/2020
0910: C. SUTTON TO STORE TO GET ICE FOR SAMPLES.
0930: T. HALL + A. FURNESS WALK TO SW LOCATION. SW-11
0940: C. SUTTON BEGIN SET UP AT MW-07 TO BEGIN LOW FLOW
~~0955: COLLECT SW-11~~ DRY
0955: COLLECT SW11-110519 NO SHEEN
1005: COLLECT SW10-110519
A LOT OF IRON FLOCCULANT PRESENT
1020: COLLECT SW09-110519
1030: COLLECT SW08-110519 BIOLOGICAL SHEEN PRESENT
1035: COLLECT SW13-110519 LIGHT SHEEN
1050: COLLECT SW04-110519
1100: COLLECT SW02-110519
1105: COLLECT SW01-110519

Rite in the Rain

Location BELTON, SC Date 11-5-19

Project / Client LEWIS DRIVE / KM

1115: CONFIRMED PRODUCT IN MW-20. LET B. GARVEY KNOW SO TO CANCEL SAMPLE AT LAB.

1140: COLLECT SW12-110519 LIGHT BIOSHEEN

1145: COLLECT SW03-110519

1200: COLLECT SW14-110519

1210: SW07 LOCATION + SW05 DRY

1220: COLLECT MW-56-110519

1230: LUNCH

1330: RETURN FROM LUNCH.

1340: C. SUTTON BEGINS SETUP AT MW-57

1345: T. HALL & A. FURNESS BEGIN SETUP AT MW-37

1410: BEGIN PURGE AT MW-37

1415: BEGIN PURGE AT MW-57

1450: COLLECT MW-37-110519

1510: BEGIN SET UP ON MW-38

1505: * NOT FROM EARLIER APPROX. 1030. C. SUTTON ATTEMPTED TO LOW FLOW MW-07 BUT IN WOULD NOT RECOVER. WELL NOT SAMPLED.

Location BELTON, SC Date 11-5-19

Project / Client LEWIS DRIVE / KM

1510: COLLECT MW-57-110519

1515: COLLECT MW-57-D-110519

1535: COLLECT MW-38-110519

1540: BACK TO COMPOUND TO PACK COOLER AND CLEAN UP

1600: FB01-110519

1610: TB01-110519 ADDED TO COOLER

1630: TEAM OFFSITE. C. SUTTON TO TAKE COOLER TO FEDEX.

TRACKING # 108259909702

11.5.19

Rite in the Rain

Location BELTON, SC Date 11-6-19

Project / Client LEWIS DRIVE/KM

PERSONNEL: T. HALL, C. SUTTON, A. FURNESS

WEATHER: SUNNY 68°/48°F

OBJECTIVE: GW SAMPLING

0800: PERSONNEL ONSITE

0810: PTSP + SWP SIGNED.

0815: CALIBRATE YSI # 044956 DISPLAY # 04L1948

CAL	DO%	PH 7	PH 10	PH 4	SP Cond	ORP	MW10	NW11
PRE	102.0	7.13	10.25	4.17	1.229	248.3	0.01	116.2
POST	100.0	7.00	10.00	4.00	1.413	240.0	0.00	124.0

*SEE PG 110 FROM 11/5 FOR LOT # + EXP

EXCEPT SP Cond 07H9GA 1072 EXP. 1/20

0840: CALIBRATE MINIRAE # 041736

CAL GAS LOT # MB1-248-100.10 EXP 12/27/22

CAL 0 → 100 ppm VOC

0900: GM ONSITE. JIM IVEY + TREY BULLMAN BOTH SIGNED PTSP + SWP.

ONSITE TO REMOVE SILT FENCE NEAR BROWNS CREEK FROM AS INSTALL

0930: MOBE TO MW 15B TO SET UP TYPHOON

0951: BEGIN PURGE AT MW15B.

1055: PUMP FLOW LOWERED. PUMP MAY BE CLOGGED

1110: PUMP BEGINS PUMPING NORMALLY WATER VERY TURBID. DARK COLOR (BLACK).

Location BELTON, SC Date 11-6-19

Project / Client LEWIS DRIVE / KM

1155:	WELL DRY. APPROXIMATLY 100 GALLONS PUMPED FROM WELL.
1220:	TEAM TO LUNCH
1310:	BACK FROM LUNCH
1315:	BEGIN SET UP AT MW-34
1330:	TYPHOON PUMP WOULD ONLY PUMP ~.15 GALLONS OF WATER FROM MW-34. WATER LEVEL WAS STILL ABOVE PUMP IN WELL. BAILED ~.85 GALLONS OF WATER. WELL DRY NOT RECHARGING WILL RETURN LATER TO SAMPLE.
1345:	MOVE TO MW-40 TO BEGIN TYPHOON PUMPING.
1355:	BEGIN PUMPING AT MW-40.
1400:	WELL NOT PUMPING. SAME AS MW-34. WILL REMOVE 5 WELL VOLUMES WITH BAILER THEN SAMPLE.
1415:	COLLECT MW-40-110619
1425:	MOVE TO MW-12B.
1435:	BEGIN SET UP AT MW-12B
1450:	BEGIN PUMPING WITH PUMP# 030258 ONLY PUMPING AT .5 GPM. SWITCH TO PUMP# 020170. NOW PUMPING AT 2.5 gpm.

Rite in the Rain.

Location BELTON, SC Date 11-6-19

Project / Client LEWIS DRIVE / KM

1625: FINISHED PUMPING AT MW-12B
207 GALLONS PUMPED

1630: COLLECT MW-12B-110619

1705: WTL @ MW-15B IS 66.56' BTC

1710: COLLECT MW-15B-110619

1715: WTL @ MW-34 IS 6.56

1720: COLLECT MW-34-110619

1730: PUMP DRUMS INTO STORAGE TANK
WITH SUBMERSIBLE PUMP & HOSE

1740: COLLECT FB01-110619

NO TIME: TB01-110619 ADDED TO COOLER

1800: FINISHED PUMPING DRUMS INTO STORAGE
TANK

1830: TEAM OFFSITE. TRIP TO TAKE
COOLER TO FEDEX.

TRACKING # 812080217450

11-6-19

Location BELTON, SC Date 11-7-19

Project / Client LEWIS DRIVE / KM

PERSONNEL: T. HALL, C. SUTTON, A. FURNESS

WEATHER: MOSTLY CLOUDY 66°/52°F

OBJECTIVE: CONT'D GW SAMPLING VIA TYPHOON

0800: PERSONNEL ONSITE

0815: PTSP + SWP SIGNED.

0820: BEGIN CALIBRATING YSI # 04A948

CAL	DO%	PH7	PH4	PH10	S.Cond	ORP	NTU 0	NTU 126
PRE	96.3	6.91	4.12	9.96	1.410	237.5	7.24	109.61
POST	100	7.00	4.00	10.00	1.413	240.0	0.00	126.0

★SEE PG 110 from 11/5 for lot # + Exp #

Except pH 4.00 lot # 96A1010 Exp # 01/2021

0900: MOBE TO MW-17B AFTER LOADING UP DRUMS INTO TRUCK

0920: BEGIN PUMPING AT 17B @ 3.5 gpm

0955: 80 GALLONS PUMPED FROM MW-17B

1000: COLLECT MW-17B-110719

1010: CLEAN UP AREA + MOVE TO MW-46

1015: BEGIN SET UP AT MW-46

1025: BEGIN PUMPING AT MW-46

1040: 10.5 gallons pumped from MW-46

1050: COLLECT MW-46-110719

1055: PACK UP AND MOVE TO MW-23

1100: BEGIN SETUP AT MW-23.

1107: BEGIN PUMPING AT MW-23.

Rite in the Rain.

118 Location BELTON, SC Date 11-7-19

Project / Client LEWIS DRIVE / KM

1115:	8.0 gallons PUMPED FROM MW-23
1120:	COLLECT MW-23-110719
1125:	COLLECT MW-23-D-110719
1130:	BACK TO COMPOUND.
1150:	LUNCH
1250:	RETURN FROM LUNCH
1300:	BEGIN DECONNING EQUIPMENT & PUMPING PURGE WATER FROM DRUMS TO STORAGE TANK. TANK #1 @ 400 GALLONS. TANK #2 EMPTY.
1305:	COLLECT FB01-110719
NO TIME:	TB01-110719
1330:	FINISH SITE INSPECTION LOG
1400:	FINISH SITE CLEANUP & PACKING UP EQUIPMENT.
1420:	C. SUTTON TO TAKE COOLER TO FEDEX.
1430:	C. SUTTON & A. FURNESS OFFSITE.
1530:	T. HAM OFFSITE

11-7-19

Location BELTON, SC Date 12/16/19

Project / Client LEWIS DRIVE / KINDER MORGAN

TEAM M. WARREN (FTL/SCC), T. HALL, A. DENNIS, C. SUTTON

WEATHER 50°F / 65°F PARTLY CLOUDY

OBJECTIVE GROUNDWATER AND SURFACE WATER GAUGING AND PRODUCT RECOVERY

EQUIPMENT: SOLINST #1 042925
SOLINST #2 046465

0700 M. WARREN, A. DENNIS, T. HALL ARRIVE ON SITE AND BEGIN SETTING UP.

0745 C. SUTTON ARRIVES ON SITE, TEAM BEGINS EQUIPMENT CALIBRATION

EQUIPMENT: MINIRAE #1 - 037717
MINIRAE #2 - 042922
LOT # CBJ-248-100-5
EXP DATE: 02/27/2023

MINIRAE #1 CALIBRATION → 100.0 ppm
MINIRAE #2 CALIBRATION → 100.1 ppm

0720 T. HALL TURNS OF SURFACE WATER AERATORS AND DUMPS RAIN GAUGE

0815 TEAM BEGINS GAUGING.

1100 TEAM BREAKS FOR LUNCH

1200 TEAM RETURNS FROM LUNCH

1210 TEAM RESTARTS GAUGING

Rite in the Rain.

Location BEITON, SC Date 12/16/19

Project / Client LEWIS DRIVE / KINDER MORGAN

1300	TEAM COMPLETES GAUGING AND MOVES ONTO PRODUCT RECOVERY		
1509	TEAM COMPLETES PRODUCT RECOVERY AND MOVES BACK TO COMPOUND		
1530	A. DENNIS BEGINS COLLECTING TROLL DATA.		
1540	T. HALL FIXES CAP ON MW-03 AND PLACES ROCK AROUND THE RW-14 DAYLIGHTING AREA		
1550	M. WARREN AND C. SUTTON MOVE TO MW-11, MW-08, AND MW-15 TO BAIL FOR PRODUCT.		
1555	MW-11	DTW =	31.625
		DTP =	~~30.~~ 31.642
		DTB =	32.0
1605	~~MW-08~~ MW-18	DTP =	—
		DTW =	18.46 * SPARGE INFLUENCE
		DTB =	19.58
		DTW =	18.95
1615	~~MW-18~~ MW-08	NO PRODUCT	

Location BELTON, SC Date 12/16/19

Project / Client LEWIS DRIVE / KINDER MORGAN

1630 TEAM RETURNS TO COMPOUND TO GEAR DOWN

1640 TEAM DEPARTS FIELD

12/16/19

Location BELTON, SC Date 12/17/19

Project / Client LEWIS DRIVE / KINDER MORGAN

TEAM M. WARREN (FTL/SSC), T. HALL, A. DENNIS, C. SUTTON

WEATHER LOW 60'S, CLOUDY, RAINY, POSSIBLE THUNDERSTORMS AT 11 AM. OVERNIGHT RAIN OF APPX 0.25".

OBJECTIVE GROUNDWATER SAMPLING WITH LOW FLOW

0800 TEAM ARRIVES ON SITE AND BEGINS GEARING UP FOR LOW FLOW SAMPLE COLLECTION.

EQUIPMENT:

- MINIRAE # 037717 (A)
- MINIRAE # 042927 (B)
- LOT # CBT-248-100-5
- EXP DATE 2/27/23
- SOLINST # 045651 (A)
- SOLINST # 046465 (B)
- LOW FLOW PUMP # 024460 (A)
- LOW FLOW PUMP # 031278 (B)
- YSI HANDHELD # 04310 (A)
- YSI PROBE # 41058 (A)
- YSI HAND HELD # 046289 (B)
- YSI PROBE # 044738 (B)

Location BELTON, SC Date 12/17/19

Project / Client LEWIS DRIVE / KINDER MORGAN

							ONTU	ORP
YSI A	DO	COND	PH4	PH7	PH10	~~ORP +240.0~~ CS	126 ONTU	
Pre		1.374	3.82	7.23	10.26	2.30	241.2	114.62
Post	99.6	1.413	4.0	7.00	10.00	0.00	240.0	126.0
YSI B	DO	COND	PH4	PH7	PH10	~~ORP +240.0~~ CS ONTU ORP	126 ONTU	
Pre		1.369	3.83	7.19	10.24	1.30	245.7	114.86
Post	99.6	1.413	4.0	7.0	10.08	0.00	239.6	126.0

~~pH4 CS~~	lot #	EXP	Mnf	
pH 4.0	2804882	~~9/25 CS~~ 3/20	VWR chemi->	
pH 7.0	2808ES2	~~3/20 CS~~ 8/20	VWR	
pH 10.0	96B956	~~8/20 CS~~ 8/20	Pine	
COND	240 mV/cm	96I170	9/20	Pine
ORP	1.413	96H881	5/20	Pine
ONTU	1849	0741	2/20	GFS chem
126 NTU	19E	1918125	3/20	YSI

0907 Gassed RT-2K DTW = 0.45

0915 Gassed RS-08 DTW = 14.69

Strong odor, Strong pressure

0935 MW-22 PID = 13.4

DTW = 9.48

DTB = 10.30

1008 MW-22 BEGIN PUMP

1021 MW-22 WENT DRY

0955 MW-27 BEGAN PUMP

1015 MW-27 WENT DRY

Rite in the Rain

Location BELTON, SC Date 12/17/19

Project / Client LEWIS DRIVE / KINDER MORGAN

1045	AFTER MW-27 RECHARGED, WELL WENT DRY
1045	TEAM BREAKS TO ALLOW THUNDERSTORMS APPROACHING TO PASS.
1145	TEAM RETURNS. YSI USED BY TH AND CS HAD A BAD TURBIDITY READER. TEAM DECIDED TO HAVE ONE TEAM HYDRASLEEVES AND ANOTHER TEAM LOW FLOW.
✓1225	MW-29-121719 VOC
✓1240	MW-20-121719 DILUTE SAMPLE
✓1255	MW-26-121719 VOC
✓1300	MW-26B-121719 VOC
✓1315	MW-23B-121719 VOC
✓1330	MW-45B-121719 VOC
✓1340	MW-21-121719 VOC
✓1430	MW-19-121719 VOC
1350	A. DENNIS BAILS MW-19 FOR PRODUCT CONFIRMATION. AIR SPARGING SYSTEM WAS ON, AND NO

Location BELTON, SC Date 12/17/19

Project / Client LEWIS DRIVE / KINDER MORGAN

PRODUCT WAS DETECTED WITH THE OIL/WATER INTERFACE PROBE. NO PRODUCT WAS OBSERVED WITHIN BAILER. TEAM SAMPLES WELL.

1415 CHECK MW-22 FOR RECHARGE DTW = 9.53. SAMPLE WILL BE COLLECTED WITH A BAILER.

1435 ~~MW-22-121719~~ (MW)

TEAM WILL COLLECT SAMPLE WITH PUMP INSTEAD.

1500	MW-44B-121719	VOC
1510	MW-01-121719	VOC
1515	MW-01B-121719	VOC
1530	MW-27B-121719	VOC
1535	MW-27 DTW = 28.52	
1545	MW-12-121719	VOC
1605	MW-35-121719	VOC
1625	FB01-121719	VOC
NO TIME	TB01-121719	TB
1610	MW-49-121719	VOC
1555	MW-56-121719	VOC

Rite in the Rain.

126 Location BELTON, SC Date 12/17/19

Project / Client LEWIS DRIVE / KINDER MORGAN

1335	MW-57-D-121719	VOC SULFATE
1330	MW-57-121719	VOC SULFATE

Invo: KINCH2MGA-LEWIS Date : 11Dec19
Customer : P746132 Weight : 10 LBS
Phone : (615)758-5858 COD :
Sat Del : N DV : 0.00

Shipping : 0.00
Special : 0.00
Handling : 0.00
Total : 0.00

Svos: STANDARD OVERNIGHT
TRCK: 1982 4807 4465

1700 TEAM DEPARTS FIELD

12/17/19

Location Belton, SC Date 12/18/15

Project / Client Lewis Drive / Kinder Morgan

Team Melissa Warren (FTL/SSC), T. Hall, A. Dennis, C. Sutton

Weather Low of 31, high of 49, Sunny

Objective Groundwater sampling with low flow and hydrasleeve

0700 Team arrives and begins gearing up for low flow sampling

Equipment See page 122. Fine en route to replace defective YSI and MiniRAEs

YSI ~~A~~ F cs	DO%	COND	ORP	PH 4	PH 7	PH 10	ONTU	126 NTU
Pre	98.8	1.2109	236.8	4.12	7.37	10.34	~~0.44~~ cs	tccs
Post	100.3	1.414	240.3	4.00	7.00	10.00	~~0.00~~ cs	tccs

YSI ~~B~~ A cs	DO	COND	ORP	PH 4	PH 7	PH 10	ONTU	126 NTU
Pre	~~Defective - Did not use~~ cs							
Post								

MiniRAE A calibrated 0.0 / 100.1

YSI A is defective. Used B

Changed turbidity calibration solutions

0 NTU	18490107411	2/20	GFS Chem
126 NTU	19B1405008Z	2/20	YSI

Unable to calibrate turbidity sensor on YSI A and B. MiniRAEs would not charge overnight.

Location BELTON, SC Date 12/18/19

Project / Client LEWIS DRIVE / KINDER MORGAN

✓0915	MW-08-~~18~~ 1819
✓0925	MW-16-121819
✓1015	MW-04-121819
✓1020	MW-03-121819
✓1030	MW-32-121819
✓1045	MW-02-121819
✓1050	MW-02B-121819
✓1105	MW-10-121819
1220	M. WARREN AND T. HALL ARRIVE AT MW-28. AFTER MEASURING DTW AND TOTAL DEPTH FOR THE LOW FLOW LOG (DTW = 23.32 DTB = 26.09), THE WELL WILL BE SAMPLED VIA HYDRASLEEVE DUE TO THE 2.77 FT OF WATER COLUMN. TEAM MOVES TO MW-18.
1120	TEAM BREAKS FOR LUNCH
1220	TEAM RETURNS FROM LUNCH.
0930	T. HALL CALLS PINE TO TROUBLESHOOT PROBLEM WITH BOTH YSI PRO DSS'
# 410588 & 044738	#'S ~~037717, 042962~~. NTU WOULD NOT CALIBRATE ON EITHER. TRAVIS FROM PINE WALKED THROUGH RESETING BOTH NTU PROBES BACK TO FACTORY →

Location BELTON, SC Date 12/18/19

Project / Client LEWIS DRIVE / KM

0930 CONT'D SETTINGS. ONCE THIS WAS DONE, BOTH RWFS RECALIBRATED FOR NTL. #41058 NTL 0 = 3.48 → 0.00
NTL 126 = 34.58 → 126.

✓1350 MW - 18 - 121819
✓1510 MW - 05 - 121819
✓1530 MW - 27 - 121819
✓1535 MW - 27 - D - 121819
✓1435 @1555 MW - 22 - 121819
✓1610 FB02 - 121819
✓NOTIME TB02 - 121819
✓1540 MW - 15 - 121819
✓1420 MW - 43B - 121819
✓1410 MW - 43 - 121819
✓1340 MW - 24 - 121819
✓1330 MW - 24B - 121819
✓1445 MW - 36 - 121819
✓1030 MW - 13B - 121819
✓0930 MW - 31 - 121819
✓0945 MW - 33T - 121819
✓1015 MW - 50B - 121819
✓1250 MW - 09 - 121819
✓0915 MW - 47 - 121819
✓1450 MW - 36B - 121819

Rite in the Rain

130

Location BELTON, SC Date 12/18/19

Project / Client LEWIS DRIVE / KINDER MORGAN

1000	MW-48B-121819
1540	MW-39-121819
1255	MW-09B-121819
1045	MW-14-121819
1100	MW-14B-121819
1000	MW-04-121819
0955	MW-06B-121819
1600	MW-25-121819
1620	MW-41-121819
1605	MW-25B-121819
1610	MW-42-121819

Invo: KINCH2MGA-LEWIS Date : 11Dec19
Customer : P746133 Weight : 10 LBS
Phone : (615)758-5858 COD :
Sat Del : N DV :

Shipping : 0.00
Special : 0.00
Handling : 0.00
0.00 Total : 0.00

Svcs: STANDARD OVERNIGHT
TRCK: 1382 4807 4613

1700 M.W ARNEN DEPARTS FIELD TO DROP OFF SAMPLES.

1715 AD, TH, CS. DEPART FIELD

Location BELTON, SC Date 12/19/19

Project / Client LEWIS DRIVE / KINDER MORGAN

TEAM M. WARREN (FTL/SSC), T. HAIL, C. SUTTON, A. DENNIS.

WEATHER LOW 25 F, HIGH 45 F

OBJECTIVE LOW FLOW, HIGH FLOW, AGRICULTURAL WELL SAMPLING.

0700 TEAM ARRIVES ON SITE TO BEGIN SETTING UP FOR LOW FLOW AND HIGH FLOW SAMPLING

EQUIPMENT SEE PAGE 127. T. HAIL TALKED W/ PINE ENVIRONMENTAL ON 12/18/19 TO FIX YSI TURBIDITY CALIBRATIONS, NO CHANGE TO EQUIPMENT.

YSI A	DO	PH4	PH7	PH10	COND	ORP	0 NTU	126 NTU
Pre	101.4	3.90	6.98	9.75	1.412	245.8	7.31	34.04
Post	100.0	4.00	7.00	10.00	1.413	240.0	0.00	126.0

YSI B	DO	PH4	PH7	PH10	COND	ORP	0 NTU	126 NTU
Pre	98.4	4.10	7.30	10.28	1.404	247.9	10.18	121.92
Post	100.0	4.00	7.00	10.00	1.413	240.0	0.00	126.0

Hach 044492	20 NTU	100 NTU	800 NTU	10 NTU
Post	20.1	100.0	812	9.15

MiniRae 042922 calibrated at 100.1

0730 TEAM HOLDS PTSP AND CONTINUES TO GEAR UP FOR DAY.

0755 CS AND TH MOVE TO MW-44

Location BEITON, SC Date 12/19/19

Project / Client LEWIS DRIVE / LINDEN MORGAN

	TO BEGIN LOW FLOW
0800	M. WARREN AND A. DENNIS MOVE TO ISB TO BEGIN HIGH FLOW.
0900	BEGIN HIGH FLOW AT MW-ISB.
0952	COMPLETE HIGH FLOW AT MW-ISB AND BEGIN TO MONITOR FOR RECHARGE
1029	START PUMP AT MW-34
1029	END HIGH FLOW AT MW-34 MONITOR FOR RECHARGE.
1303	START PUMP AT MW-40
1322	END PUMP AT MW-40, MONITOR FOR RECHARGE
1340	MW-40-121919 VOC
1400	CONTINUE MONITORING RECHARGE AT MW-34 AND MW-ISB,
1410	RETURN TO MW-34 TO REPUMP ADDITIONAL VOLUME FROM WELL.
1550	BEGIN PUMP 17B.
1625	MW-17B-121919 VOC
1630	MW-17B-D-121919 VOC
0915	MW-44-121919 VOC
1045	MW-37-121919 VOC SULFIDE

Location BELTON, SC Date 12/19/19

Project / Client LEWIS DRIVE / KINDER MORGAN

1345	MW-38-121919	VOC SULFATE
1635	MW-28-121919	VOC
1605	AW-339203i7-121919	VOC
1535	AW-528-121919	VOC

* AW-339203i7-121919 AND AW-528-121919 WERE COLLECTED IN DUPLICATE AND SENT SEPERATELY TO PACE ANALYTICAL AND TEST AMERICA.

1700 TEAM RETURNS TO COMPOUND TO PUMP DRUMS, DECON, AND PACK COOLERS

1730 TEAM DEPARTS FIELD

12/19/19

Rite in the Rain.

Location BEITON, SC Date 12/20/19

Project / Client LEWIS DRIVE / KINDER MORGAN

TEAM M. WARREN (FTL/SSC), T. HALL, A. DENNIS, C. SUTTON

OBJECTIVE HIGH FLOW SAMPLING AND SURFACE WATER SAMPLING

WEATHER LOW 28 F, SUNNY, HIGH MID 40S

EQUIPMENT SEE PAGE 127.

0730 TEAM ARRIVES ON SITE AND HOLDS PTSP ABOUT LAST DAY ON THE SITE AND COMPLACENCY.

YSI A	DO	PH4	PH7	PH10	COND	ORP	ONTU	126 NTU
Pre	96.5	3.95	7.09	10.06	1.370	236.6	0.34	114.15
Post	100.0	4.00	7.00	10.00	1.413	240.0	0.00	126.0

YSI B	DO	PH4	pH7	pH10	COND	ORP	ONTU	126 NTU
Pre	100.3	4.11	7.03	9.96	1.382	237.3	7.32	121.26
Post	100.0	4.00	7.00	10.00	1.413	240.0	0.00	126.0

MiniRAE 042922 calibrated at 100.0

✓1000	SW11 - 122019	VOC
✓1017	SW10 - 122019	VOC
✓1045	SW09 - 122019	VOC
✓1053	SW08 - 122019	VOC
✓1105	SW13 - 122019	VOC SULFATE ✓
1130	Crew to Lunch	
1305	SW04 - 122019	VOC SULFATE ✓
1320	SW02 - 122019	VOC SULFATE ✓
1350	SW01 - 122019	VOC SULFATE ✓

Location Belton, SC Date 12/20/19

Project / Client Lewis Drive / Kinder Morgan

1355	SW07-122019	VOC
1415	SW12-122019	VOC SULFATE
1425	SW03-122019	VOC
1310	SW05 is dry	
1535	FB04-122019	VOC/FB
1510	MW-46-122019	VOC SULFATE
1420	MW-23-122019	VOC
0855	MW-34-122019	VOC
0840	MW-15B-122019	VOC
0845	MW-15B-D-122019	VOC
1452	SW04-122019	VOC SULFATE
1115	MW-12B-122019	VOC
1530	TEAM RETURNS TO STAGING AREA TO PACK COOLERS AND CREATE AN INVENTORY	

12/20/19

Location BELTON, SC Date 11/8/2020

Project / Client LEWIS DRIVE HINDER MORGAN

TEAM M. WARREN (FTL/SSC)
T. HALL (JACOBS)

WEATHER MID 50's, SUNNY, CLEAR

OBJECTIVE SW SAMPLING AND VBS LOCATING

EQUIPMENT YSI HANDHELD # 43854
SONDE 10 # 41058
TRIMBLE # 044074
SCHONSTEDT #

YSI CALIBRATION

SOLUTION	LOT #	EXP	BEFORE	AFTER
0 NTU	18490107 41	02/20	0.0	0.0
126.0 NTU	19B19050082	02/20	41.2	125.7
1.413 ms/cm	96E1018	1/20	1.810	1.413
pH4	2804882	03/20	4.11	4.00
pH7	96E1325	02/21	7.15	7.05
pH10	96B956	2/21	9.82	10.10
240.0 mV	96H881	05/20	263.0	239.6
DO			99.8	100

1120: TEAM BEGINS HIKE TO SW-11

1150: COLLECT SW-11

1200: COLLECT SW-10 WL = .80'

1210: COLLECT SW-09 BIOSHEEN PRESENT

1220: COLLECT SW-08 WL = 1.05'

1230: COLLECT SW-13 BIOSHEEN PRESENT

Location BELTON, SC Date 1-08-2020

Project / Client LEWIS DRIVE/KM

LOCATION	PH	NTU	mS/c Sp Cond	TEMP °C	DO mg/L	ORP mV
SW-13	6.19	42.2	0.095	8.5	9.36	112.6
SW-02	6.13	19.49	0.042	9.3	10.10	129.4
SW-04	5.83	33.99	0.045	8.6	8.62	108.2
SW-12	6.08	17.72	0.043	8.3	9.43	213.2
SW-14	5.82	775	0.063	11.9	12.39	186.7
SW-01	6.13	24.1	0.04	9.3	9.62	160.1

✓1245: COLLECT SW-04

✓1250: COLLECT SW-02

✓1310: COLLECT SW-01 WL = 1.96'

✓1320: COLLECT SW-07

✓1335 COLLECT SW-03 WL: 1.48'

*NEEDS NEW STAKE

✓1345 COLLECT SW-12

1400: LUNCH

1430: RETURN FROM LUNCH

✓1445: COLLECT SW-14

1450: ARRIVE AT SW-05 LOCATION. WATER PRESENT

LOCATION	PH	NTU	Sp Cond	TEMP C°	mg/L DO	ORP
SW-05	4.66	0.0	0.053	9.8	5.60	273.5

✓1455: COLLECT SW-05

1510 TEAM BEGINS PACKING COOLERS AND LOCATING VBS LOCATIONS

Rite in the Rain

138 Location BELTON, SC Date 01/08/20

Project / Client LEWIS DRIVE - KINDER MORGAN

Invoice: KINCH2MGA-DM Date : 13Mar19 Shipping : 0.00
Customer : P699206 Weight : 10 LBS Special : 0.00
Phone : (615)758-5858 COD : Handling : 0.00
Sat Del : N DV : 0.00 Total : 0.00

SVCS: STANDARD OVERNIGHT
TRCK: 4876 1079 9211

1/7/2020 AT 1000 IS WHEN STREAM AERATORS WERE TURNED OFF FOR THE SURFACE WATER SAMPLING EVENT

1/8/2020 STREAM AERATORS WERE RESTARTED AT 1600.

1545 TEAM LOCATES, STAKES, AND LABELS VBS-1, VBS-2, AND VBS-3.

1600 TEAM CLEANS AREA BEFORE DEPARTING FIELD.

1700 TEAM DEPARTS FIELD

1/8/20

Location BELTON, SC Date 2/10/20

Project / Client LEWIS DRIVE / KINDER MORGAN

PERSONNEL: T. HALL/GVL, M. WARREN/ATL, COLLINSUTTON/ATL

WEATHER: CLOUDY 55°/50°F

OBSECTIVE: GAUGING + HS DEPLOY & SAMPLING

0930: PERSONNEL ONSITE.

0935: S. SMIDA ONSITE AS WELL DOING OTM

0945: SAFE WORK PERMIT COMPLETED. PTSP COMPLETED

1145 SW13 @ - 021020

1200 SW10 - 021020 0.45 ft

1215 ~~SW09~~ SW09 - 021020 DRY ~~0.45 ft~~

1235 ~~SW13~~ SW13 - 021020

Fe^{2+} = 1.0 mg/L

H_2O_2 = 0.0 mg/L

PERSULFATE = 0.0 mg/L

Loc.	°C Temp	mg/L DO	spc.	PH	ORP	NTU
SW-13	9.3	8.42	87.4	6.00	79.8	12.82
SW-04	10.1	3.18	65.5	5.89	75.2	3.86
SW-02	9.5	9.21	41.1	6.00	121.5	12.39
SW-12	10.3	9.15	40.8	6.28	110.2	13.49
SW-14	9.4	8.22	56.7	5.75	127.7	465
SW-05	8.3	5.6	30.3	5.05	240.7	2.96

Rite in the Rain

Location BELTON, SC Date 02/10/20

Project / Client LEWIS DRIVE / ICM

1528 SW04-021020 VOC SULFATE

Fe^{2+} = 0.0

PERSULFATE = 0.0

H_2O_2 = 0.0

1542 SW02-021020 VOC SULFATE

Fe^{2+} = 1.0 mg/L

PERSULFATE = 0.0

H_2O_2 = 0.0

1705 SW06 dry - picture taken

1630 SW14-021020 VOC Sulfate

Fe^{2+} = 0.0

Persulfate = 0.0

H_2O_2 = 0.0

1656 SW05-021020 VOC sulfate 0.34 ft ADD

Fe^{2+} = 0.0

Persulfate = 0.0

H_2O_2 = 0.0

1530 SW07-021020

1540 SW03-021020

1535 SW01 Dry - picture taken

1400 Fran onsite. M. Wasden makes contact

@

@

Location BELTON, SC Date 02/10/20

Project / Client LEWIS DRIVE / KM

Equipment: MiniRAE # 926664
Lot # EBI-248-100-S
Exp Date 1/30/2022
YSI Handheld # 046291
YSI Probe # 044739

YSI	DO	COND	PH4	pH7	pH10	ORP	ONTU	124NTU
Pre	103.7	1.429	4.16	7.15	10.16	250.7	0	143.3
Post	100.0	1.413	4.00	7.00	10.00	240.0	0	124.0

YSI Calb. Soln	lot #	Exp	Mfn
0 NTU	18324721	3/31/20	LaMotte
124 NTU	P16197800 15	7/31/20	YSI
DO	600243-0804	9/30/2049	3M
ORP 240mV	96E1369	2/28/20	Hanna
pH 10	27012942	6/8/19	VWR
pH 7	28052406	4/19/20	VWR
pH 4	96A1010	1/31/21	-
Cond. 1.413	96A1072	1/31/20	Aurical

MiniRAE Pre: 99.4 Post: 100.1

~~Soln:~~	~~Lot #~~	~~Exp~~	~~Mfn~~ CS
1220	SW08 - 021020		
1400	SW12 - 021020		

MiniRAE Soln:	Lot #	Exp	Mfn
	EBI-248-100-S	1/30/22	Gasco

Rite in the Rain

142

Location BELTON, SC Date 02/10/20

Project / Client LEWISDRIVE/KM

Invo: KINCH2MGA-LEWIS Date : 05Feb20 Shipping : 0.00
Customer : P754957 Weight : 10 LBS Special : 0.00
Phone : (615)758-5858 COD : Handling : 0.00
Sat Del : N DV : 0.00 Total : 0.00

Svcs: STANDARD OVERNIGHT
TRCK: 1382 4821 9294

1705 TEAM RETURNS TO COMPOUND TO GEAR DOWN AND PACK COOLERS.

1800 DEPART FIELD

02/10/20

Location BELTON, SC Date 02/11/20

Project / Client LEWIS DRIVE / LCM

Personnel: T. Hall, M. Warren, C. Sutton

Weather: Rain, CLEAR AFTER LUNCH 50°/70°F

Objectives: Gauging & high-flow/low-flow sampling

YSI handheld # 39559

YSI probe # 458088

YSI	DO	COND	pH4	pH7	pH10	ORP	240 mV	126 mV
Pre	102.1	~~0.976~~ 0.992	4.16	7.10	10.05	254.2	240.0	99.66
Post	100.0	1.413	4.00	7.00	10.00	240.0	0.00	126.0

Calibration Sln.	lot #	Exp.	Mfr.
ORP	1849010741	2/20	GFS Chem
126 mV	19G1928001S	2/20	YSI
4 pH	2809F08	9/20	VWR
7 pH	9GH1160	8/21	Pine
10 pH	9GA1078	1/21	Pine
1.413 mS/cm cond	9GA1072	1/20	Pine
240 mV ORP	9GH769	5/20	Pine

MiniRAE # 042931

MiniRAE Calibration: 100 ppm isobutylene

Calibration Soln: C_4H_8 100 ppm 34LS-248-100

lot # - CB5-248-100-S Exp - 2/27/23 Pine

0800: COMPLETE GAUGING AND DEPLOYMENT OF MS.

1030: COMPLETE DEPLOYMENT EXCEPT MW-41

Rite in the Rain

Location BELTON, SC Date 02/11/20

Project / Client ~~DOO~~ LEWIS DRIVE / ILM

1100:	TEAM TO LUNCH
1145:	RETURN FROM LUNCH
1200:	FED EX ONSITE TO DELIVER CAL-GAS
1230:	SET UP AT MW-12B TO BEGIN HIGH FLOW.
1240:	DEPLOY 2 PUMPS FOR MAXIMUM FLOW
1330:	TOTE FULL TO DUMP TOTE THEN CONTINUE PURGING.
✓1510	MW-41-021120
✓1520	MW-40-021120
✓1525	MW-34-021120
✓1530	MW-39-021120
1608	MW-27B DTW=29.13 ft bTOC
1608	MW-25B DTW= 3.11 ft bTOC
1614	MW-27B DTW=29.11 ft bTOC
1618	MW-25B DTW=3.09 ft bTOC
1626	MW-27B DTW=29.11 ft bTOC
1626	MW-25B DTW=3.08 ft bTOC
✓1635	MW-51-021120
✓1705	MW-52-021120
1638	MW-25B DTW=3.09 ft bTOC
1638	MW-27B DTW=29.11 ft bTOC
✓1720	MW-12B-021120
1730	TEAM RETURNS TO COMPOUND

Location BELTON, SC Date 02/11/20

Project / Client LEWIS DRIVE / KM

1730 CONT TO GEAR DOWN AND PACK COOLERS.

NOTIME | TB02 - 021120 |

1740 | FB01 - 021120 |

Invo: KINCH2MGA-LEWIS Date : 05Feb20 Shipping : 0.00
Customer : P754956 Weight : 10 LBS Special : 0.00
Phone : (615)758-5858 COD : Handling : 0.00
Sat Del : N DV : 0.00 Total : 0.00

Svcs: STANDARD OVERNIGHT
TRCK: 1382 4821 9592

1800 TEAM DEPARTS FIELD

2/11/20

Rite in the Rain.

24 LW

Location BELTON, SC Date 02/11/20

Project / Client LEWIS DRIVE / KM

TEAM: M. WARREN, T. HALL, C. SUTTON

WEATHER: MID 50'S WITH HEAVY RAIN

TASK GW GAUGING / HYDRA SEQUE

EQUIPMENT; SOLINST # 045080

PID # 042875 LOT # EB1-248-100-S

EXP: 11/30/22

MFN / CASCO

PRE 99.4 POST 100.)

0700 TEAM ARRIVES ON SITE

YSI CALIBRATION

HANHELD # 19B104555

PROBE # 044739

	LOT #	EXP #	FROM	TO
COND	9GA1072	1/20	1.055	1.413
pH4	2809F08	9/20	4.16	9.0
pH7	9GH1160	8/21	2.07	7.00
pH10	9GA1078	1/21	9.92	10.00
ΦTURB	19A81074	2/20	2.14	0.0
TURB	19G1928015	2/20	102.42	124.20
DO	—	—		
ORP	9GH769	5/20	~~248.0~~ 248.9	240

1255 ARRIVE AT MW-37 TO BEGIN LOW FLOW SET UP.

1310 START PUMP

1355 COLLECT MW-37-021120

Location BELTON, SC Date 02/11/20

Project / Client LEWIS DRIVE / KM

1410 BEGIN SETUP FOR LOW FLOW AT MW-38.

1425 START PUMP

1515 COLLECT MW-38-~~0220~~0211220

1540 M. WARREN TO HIGH FLOW PUMP MW-12B

02/11/20

Location Belton, SC Date 4/12/2020

Project / Client Lewis Drive / LM

Team: C. Sutton, M. Warren, T. Hall

Weather: mostly cloudy - chance of rain
mid to high 50s

Equipment: YSI Handheld (A) # 39559
YSI Probe (A) # 044739
YSI Handheld (B) # 046291
YSI Probe (B) # 45808

YSI (A)	DO	COND	pH 4	pH 7	pH 10	ORP	ONTU	126 NTU
Pre	96.4	0.816	4.20	7.10	9.95	241.0	-1.70	122.77
Post	100.0	1.413	4.0	7.0	10.0	240.0	0.00	126.0

YSI (B)	DO	COND	pH 4	pH 7	pH 10	ORP	ONTU	126 NTU
Pre	99.8	0.653	3.95	6.93	9.96	238.8	-1.70	114.15
Post	100.0	1.413	4.0	7.0	10.0	240.0	0.00	126.0

Typhoon pump (A) # 029227
Typhoon pump (B) # 031360
Control Box (A) # 033473
Control Box (B) # 021467
Solinist (A) #
Solinist (B) #
MiniRAE (A) # 042875
MiniRAE (A) Calibration 0 ppm @ 0 ppm. 100 ppm @ 99.6
MiniRAE (B) # 042931
MiniRAE (B) Calibration 0 ppm @ 0 ppm. 100 ppm @ 100 ppm

~~0930~~ MW-14B DTW = 14.85

Location BELTON, SC Date 02/12/20

Project / Client LEWIS DRIVE / KM

0938	MW-12B	DTW = 8.90 ft BTOC
0953	MW-14B	DTW: 14.85 ft BTOC
0953	MW-12B	DTW = 9.10 ft bTOC
1035	MW-14B	DTW = 14.85 ft BTOC
1035	MW-12B	DTW = 10.23 ft BTOC
1320	MW-15B =	DTW = 69.10
1625	MW-23-021220	VOC
1626	MW-23-D-021220	VOC
1640	MW-57-021220	VOC, SULFATE
1600	MW-45-021220	VOC
1727	MW-17B-021220	VOC
1729	Sheen on Sample in lab dilute.	HS
1740	MW-20-021220	DILUTE VOC
1741	MW-20-D-021220	DILUTE VOC
1800	MW-26-021220	VOC
1805	FB02-021720	VOC
No time	TB03-021220	TRIP

Invo: KINCH2MGA-LEWIS Date : 11Dec19
Customer : P746134 Weight : 10 LBS
Phone : (615)758-5858 COD :
Sat Del : N DV :

Shipping : 0.00
Special : 0.00
Handling : 0.00
0.00 Total : 0.00

Svce: STANDARD OVERNIGHT
TRCK: 1382 4807 4546

Rite in the Rain.

Location BELTON, SC Date 02/12/20

Project / Client LEWIS DRIVE / KM

1815 TEAM RETURNS TO COMPOUND TO GEAR DOWN AND PACK SAMPLE COOLERS.

1845 TEAM DEPARTS FIELD

02/12/20

Location BECTON, SC Date 02/13/20

Project / Client LEWIS DRIVE/KM

TEAM M. WARREN, C. SUTTON, T. HALL

WEATHER CLOUDY, WINDY, RAIN, MID 60'S

EQUIPMENT ~~YSI HAN~~ SEE PAGE 26

YSI (A)	DO	COND	pH 4	pH 7	pH 10	ORP	0 NTU	126 NTU
Pre	95.5	2.920	3.90	7.01	9.97	233.4	1.45	120.30
Post	100.0	1.413	4.00	7.00	10.00	240.0	0.00	126.0

YSI (B)	DO	COND	pH 4	pH 7	pH 10	ORP	0 NTU	126 NTU
Pre	100.1	3.110	4.06	7.05	10.00	231.6	0.07	114.50
Post	100.0	1.413	4.00	7.00	10.00	240.0	0.00	126.0

MiniRAE (A) 0 ppm @ 0 ppm. 100 ppm Isobutylene @ 100.1 ppm

MiniRAE (B) 0 ppm @ 0 ppm. 100 ppm Isobutylene @

0855 M. WARREN STARTS SETUP ON MW-46 FOR LOW FLOW AND POST INJECTION PARAMETER COLLECTION

1010 MW-46-021320 VOC SULFATE

0855 T. HALL AND C. SUTTON BEGIN SETUP FOR HIGH FLOW PUMPING AT MW-60B

1410 MW-53-021320

1655 MW-15B-021320

1450 MW-07-021320 DILUTE

1420 MW-54-021320

1155 MW-56-021320 VOC SULFATE

0800 FB03-021320

1010 MW-46-021320 VOC SULFATE

Rite in the Rain

30

Location BELTON, SC Date 2/13/20

Project / Client LEWIS DRIVE / KM

1700 RETURN TO COMPOUND TO GEAR DOWN AND PACK COOLERS

1900 TEAM DEPARTS FIELD,

Invo: KINCH2MGA-LEWIS Date : 05Feb20 Shipping : 0.00
Customer : P754956 Weight : 10 LBS Special : 0.00
Phone : (615)758-5858 COD : Handling : 0.00
Sat Del : N DV : 0.00 Total : 0.00

Svcs: STANDARD OVERNIGHT
TRCK: 1382 4821 9607

02/13/20

Location Belton. SC Date 2/12/20

Project / Client Lewis Drive/KM

Team: C. Sutton and T. Hall

Weather: 40°F-60°F, Sunny

Equipment: YSI Handheld # 046291

YSI probe # 45808

MiniRAE # 042931

Honda WX10T pump # 039518

YSI	DO	COND	pH4	pH7	pH10	ORP	ONTU	126 NTU
Pre	100.1	1.468	3.86	7.08	10.17	254.2	2.24	129.63
Post	100.0	1.413	4.00	7.00	10.00	240.0	0.00	126.0

miniRAE calibration: 0 ppm @ 0 ppm. 100 ppm Isobutylene @ 100.1 ppm

YSI Calibration Soln.	Lot #	Exp.	Mfr
pH 4	96E1020	01/2021	Pine
pH 7	96H1160	08/2021	Pine
pH 10	96K672	11/2021	Pine
ONTU	19040042	02/2020	GFS
126 NTU	19619280015	02/2020	YSI
COND 1.413 mS/cm	96L177	12/2020	Pine
ORP 240 mV	96H1160	08/2021	Pine
100 ppm Isobutylene	CB3-24X-100-5	2/27/23	Pine

Interface ~~Water level~~ gs meter (A): 046495

Interface meter (B): 042925

1105 ~~MW-5B~~ MW-03 DTW = 18.41

1110 DTW @ MW-13 = 19.90

BEFORE PURGING @ 50 R

Location LEWIS DRIVE Date 2/12/20

Project / Client KM / LEWIS DRIVE

1120	DTW @ MW-13B = 19.93
1135	DTW @ MW-13B: 19.92
1236	DTW @ MW-13B = 19.95
1457	DTW @ MW-13B = 19.95
1105	BEGIN PURGE AT MW-50B
1300	LUNCH
1350	RETURN FROM LUNCH
1435	CONT'D PURGE AT MW-50B
1507	TOTE FULL. EMPTY TOTE
1540:	CONT'D PURGE
16151	PURGE AT MW-50B COMPLETE 1000 GALLONS PURGED.
1630:	CLEAN UP & EMPTY TOTE.
1640:	ATTEMPTED TO PUMP AT MW-36
1720:	1" WILL NOT WORK FOR THE 2" WELLS. CANNOT COLLECT WATER LEVELS.
1740:	WILL GO TO LOWES AND GET FITTINGS TO USE 3/8" POLY.
1800:	TEAM OFFSITE.

2/12/20

Location BELTON, SC Date 2-18-2033

Project / Client LEWIS DRIVE / KM

Team: C. Sutton and T. Hall

Weather: mid 50s, cloudy / rainy

equipment: See page 31

YSI	DO	COND	pH4	pH7	pH10	ORP	ONTU	126.0NTU
Pre	99.9	1.481	3.95	6.98	9.96	235.6	0.32	126.77
Post	100.0	1.413	4.00	7.00	10.00	240.0	0.00	126.0

MiniRAE 0ppm @ 0.0ppm. 100ppm Isobutylene @ 100.1 ppm

0700: ~~TEAM~~ ONSITE

0720: SWP + PTSP SIGNED

0730: YSI CALIBRATED

0745: PID CALIBRATED

0800: MOBE TO MW-36

0835: BEGIN PURGE AT MW-36

0845: MW-36 DRY

0850: CHECK RECHARGE AT MW-36

0857: WELL RECHARGED

0905: MOBE TO MW-11

0935: BEGIN PURGE AT MW-11

0945: STOP PURGE AT MW-11. 5 GALLONS REMOVED

~~SET UP~~ (TH) 1005: SET UP AT MW-13B

1030: PUMPED FOR ~ 2 MINS. PUMP STARTED PUMPING AIR

Rite in the Rain

Location BELTON, SC Date 2-18-20

Project / Client KINDER MORGAN/JACOBS

1100: TRIED SWITCHING TUBING TO SEE IF IT MAY HAVE BEEN CLOGGED. IT WAS NOT.

1200: TEAM TO LUNCH.

1250: TEAM RETURNS FROM LUNCH

1325: BEGIN PURGE AGAIN AT MW-13B. AFTER SWITCHING TO 3/8" TUBING.

1400: WELL STILL SEEMS TO BE GETTING AIR.

1420: SPOKE TO M. WARREN. AFTER SOME TROUBLESHOOTING THAT DID NOT WORK WE WELL CAL MW-13B GOOD.

1440: WAITING OUT THUNDERSTORMS IN THE AREA.

1500: BACK TO COMPOUND TO EMPTY TOTE AND GATHER SAMPLING SUPPLIES.

1545: MOBE TO PLANE TO COLLECT MW-36 & MW-55

1620 COLLECT MW-36-021820

1635 COLLECT MW-55-021820

1650 COLLECT MW-50B-021820

Location BELTON, SC Date 2-18-20

Project / Client KINDER MORGAN / JACOBS

1705 :	COLLECT	MW-11-021820
1735 :	COLLECT	MW-13B-021820
1750 :	COLLECT	FB01-021820
1800 :	TB01-021820 ADDED TO COOLER	
1830 :	TEAM OFFSITE, THAN TO FED EX WITH SAMPLES.	

2-18-20

Invo: KINCH2MGA-LEWIS Date : 05Feb20
Customer : P754856 Weight : 10 LBS
Phone : (615)758-5858 COD :
Sat Del : N DV :

Shipping : 0.00
Special : 0.00
Handling : 0.00
0.00 Total : 0.00

Svce: STANDARD OVERNIGHT
TRCK: 1382 4821 9629

Rite in the Rain

Location Belton, SC Date 2/19/2020

Project / Client Lewis Dine / Kim

Team: C. Sutton and T. Hall

Weather: low 50s, cloudy

Equipment: See page 31

YSI	DO	COND	pH4	pH7	pH10	ORP	ONTU	TEMP
Pre	100.9	1.536	4.02	7.03	10.01	229.1	-0.59	135.19
Post	100.0	1.413	4.00	7.00	10.00	240.0	0.00	126.00

Mini RAE calibrated 0ppm @ 0ppm. 100 ppm Isobutylene at 100.2 ppm

0700: TEAM ONSITE

0715: COMPLETE PTSP + SWP.

0720: CALIBRATE YSI + PID

0750: GATHER EQUIPMENT TO COMPLETE WELL DEVELOPMENT

0830: TO TRASH DUMP TO GET RID OF TRASH.

0850: BEGIN UNEARTHING VBS-02.

0930: TEXT TOM WILEY ABOUT WELL SIZE. APPEARS TO BE ONLY 1". TOM SENDS WELL CONSTRUCTION DIAGRAMS.

0950: BEGIN SETTING UP ON WELL. WTL @ 5.50. ft bgs.

0955: BEGIN PURGE. WELL DRY UPON PUMPING FOR 1 MIN.

1010: WELL SLOW TO RECHARGE.

Location BELTON, SC Date 2-19-20

Project / Client LEWIS DRIVE/KM

1025:	~~WELL~~ VBS-02 ONLY RECHARGED 1 ft IN 30 MIN
1045:	TD = 30.84
1050:	WTL @ 25.49 AT VBS-02 WILL LET VBS-02 RECHARGE AND MOVE TO VBS-03
1055	OPEN VBS-03. WTL @ 8.45 ft bgs DTB = 35.58 bgs
1100:	BEGIN PUMPING AT VBS-03
1103:	WELL DRY. REMOVED TUBING. WTL = 28.05.
1132:	VBS-02 DTW = 25.35
1135:	VBS-03 DTW = 27.74
1152:	VBS-02 DTW = ~~25~~ 25.31
1153:	VBS-03 DTW = 27.72
1205:	SPOKE TO T. WILEY/ATL. TALKED ABOUT WELLS NOT RECOVERING. AND VBS-01 BEING UNDERWATER AND UNABLE TO DEVELOP.
125:	BEGIN PACKING UP EQUIPMENT
1300:	TEAM OFFSITE.

2-19-20

Rite in the Rain

Location BELTON, SC Date 03/09/20

Project / Client LEWIS DRIVE

TEAM: M. WARREN (FFL), C. SUTTON (GEO), T. HALL (TECH), A. FURNESS (ENV. SCI)

WEATHER: MID 40's / PARTLY CLOUDY

OBJECTIVE:

- GROUNDWATER ~~SAM~~ GAUGING
- SURFACE WATER GAUGING
- PRODUCT RECOVERY

0700 TEAM ARRIVES ON SITE

0715 HOLD PTSP ABOUT LONG DAY OF GAUGING AND REPETATIVE MOTIONS.

Equipment: MiniRAE (1) 02475
MiniRAE (2) 046986

Calibration Soln: lot # Mfn Exp date
100 ppm Isobutylene FBJ-248-100-2 Pine 7/19/23

Calibration:

MiniRAE (1) 0ppm @ 0.0ppm. 100.0 ppm Isobutylene @ 100.0 ppm

MiniRAE (2) 0ppm @ 0.0 ppm. 100.0 ppm Isobutylene @ 100.0 ppm

0820 BEGIN GROUNDWATER AND SURFACE WATER GAUGING.

1050 BREAK FOR LUNCH

1150 RETURN FROM LUNCH AND CONTINUE GAUGING.

Rite in the Rain

Location BELTON, SC Date 03/09/20

Project / Client LEWIS DRIVE / KM

1545	M. WARREN AND T. HALL BEGIN PRODUCT RECOVERY (PR)
1830	M. WARREN AND T. HALL STOP PR AFTER RW-02 AND WILL RESUME IN THE MORNING.
1830	TEAM MEETS AT COMPOUND TO GEAR DOWN AND DISCUSS NEXT DAY PLANS

03/09/20

Location BELTON, SC Date 03/10/20

Project / Client LEWIS DRIVE / KM

TEAM: M. WARREN, T. HALL, C. SUTTON, A. FURNESS.

WEATHER MID 60'S

OBJECTIVE HIGH FLOW.

SEE BOOK 2 03/10/20 FOR EQUIPMENT AND CALIBRATION INFORMATION

0700 TEAM ARRIVES ON SITE

0740 TEAM HOLDS PTSP AND CONTINUES TO GEAR UP.

0750 CALIBRATE PIDs

#046986 → 100.0

#045285 → 100.1

0815 MOBE TO MW-15B TO BEGIN HIGH FLOW.

0910 BEGIN PUMPING AT MW-15B

1000 MW-15B DRY BEGIN COLLECTING RECOVERY DATA EVERY 30 MIN

1030 BACK TO COMPOUND TO EMPTY TOTE AND DECON.

1120 TEAM TO LUNCH

1220 TEAM BACK ONSITE

1300 SPOKE TO SCOTT AT PINE. HE IS SHIPPING NEW MOTOR FOR GEO SUB # 038215.

Rite in the Rain.

Location BELTON, SC Date 3-10-20

Project / Client LEWIS DRIVE / KM

1310	BEGIN PURGE AT MW-13B
1348	WELL DRY - MW-13B
1354	BEGIN RECHARGE DATA COLLECTION EVERY 5 MIN.
1437	BEGIN PURGE AT MW-07
1442	WELL DRY AFTER PUMPING 3.5 GALLONS
1444	BEGIN COLLECTING RECHARGE DATA EVERY 2 MIN.
1516	BEGIN PURGE AT MW-45
1519	MW-45 DRY. AFTER PUMPING ~3 GALLONS
1600	BEGIN SET UP AT MW-36
1605	BEGIN PURGE AT MW-36
1612	STOPPED PURGING. PURGED OVER 5 WELL VOLUMES
1614	BEGIN COLLECTING RECOVERY DATA.
1620	MOVE TO MW-23
1635	BEGIN PURGING AT MW-23
1644	STOPPED PUMPING. PUMPED 5 WELL VOLUMES
1700	BACK TO COMPOUND TO DECON.
1830	TEAM OFFSITE.

3-10-20

Location BELTON, SC Date 03/10/26

Project / Client LEWIS DRIVE

PERSONELL: M. WARREN, T. HALL, C. SUTTON, A. FURNESS.

WEATHER: MID 60'S / PARTLY CLOUDY

OBJECTIVE: COMPLETE PR, HIGH FLOW PUMPING, HYDRASLEEVES AND LOW FLOW.

YSI	Calibration solution	Lot #	exp.	manufacturer
pH4		961282	04/24	Pine
pH7		96K721	11/21	Pine
pH10		9GB956	02/24	Pine
∅ Turb		19330173	10/20	GFS
Turb		19J193800 90	09/20	YSI
Cond		962170	09/20	Pine
ORP		96K142	04/20	Pine

YSI 1 - # 044947

YSI 2 - # 044948

YSI 1	DO	cond	pH4	pH7	pH10	ORP	∅ Turb	Turb
Pre	103.8	1.414	4.03	6.99	9.95	255.1	-1.10	113
Post	103.1	1.413	4.00	7.00	10.0	240.0	0.00	124

YSI 2	DO	cond.	pH4	pH7	pH10	ORP	∅ Turb	Turb
Pre	105.4	1.116	3.76	7.24	10.70	235.6	-2.04	83.97
Post	101.4	1.413	4.00	7.00	10.00	240.0	0.00	124.00

Location BELTON, SC. Date 03/10/20

Project / Client LEWIS DRIVE

45E-3 # 039544

	DO	cond	pH4	pH7	pH10	orp	ORP	Temp
Pre	100.4	1.423	3.87	6.94	9.97	256.1	0.00	111.3
post	101.7	1.413	4.00	7.00	10.00	240.0	0.00	124.0

~~0935~~	MW-12-031020	VOC MNA
~~1000~~	MW-28-031020	VOC MNA
~~1020~~	MW-49-031020	VOC
~~1035~~	MW-35-031020	VOC MNA
~~1050~~	MW-25-031020	VOC MNA
~~1100~~	MW-25B-031020	VOC
1120	BREAK FOR LUNCH	
1220	RETURN FROM LUNCH	
~~1230~~	MW-42-031020	VOC, MNA
~~1245~~	MW-41-031020	VOC
~~1250~~	MW-41-D-031020	VOC
~~1300~~	MW-40-031020	VOC MNA
~~1315~~	MW-39-031020	VOC
~~1325~~	MW-34-031020	VOC
~~1335~~	MW-15-031020	VOC MNA

*ONLY 2 VOC BOTTLES
*LOW VOLUME FOR SECOND 125 mL POLY BOTTLE

~~1355~~	~~MW-25B-031020~~	~~VOC~~ (2)
~~1400~~	~~MW-25-031020~~	~~VOC~~ (2)

Rite in the Rain

Location ~~LEWIS~~ BELTON, SC Date 03/10/20

Project / Client LEWIS DRIVE

1420	MW-43-031020	VOC
1425	MW-43B-031020	VOC
1440	MW & AF RETURN TO COMPOUND TO SET UP FOR LOW FLOW AT MW-37 AND MW-38	
1515	ARRIVE TO MW-37 AND MW-38 TO BEGIN LOW FLOW	
1535	START PUMP AT MW-37	
1540	START PUMP AT MW-38	
1615	MW-37-031020	VOC ✓ SULFATE ✓
1640	MW-38-031020	VOC ✓ SULFATE ✓
1700	MW, AF, TH, AND CS RETURN TO COMPOUND TO GEAR DOWN AND PACK COOLERS	
1720	FB01-031020	VOC
NOTIME	TB01-031020	TB
1400	MW-24-031020	VOC
1355	MW-24B-031020	VOC
1800	TEAM COMPLETES QC OK COOLERS.	
1805	T. HALL DEPARTS FIELD TO DROP OFF COOLERS.	
1830	MW, CS, AF DEPART FIELD →	

03/10/20

Location Benton, SC Date 03/11/20

Project / Client Lewis Dam

Personell: M. Warren, T. Hall, C. Sutton, A. Furney

Weather: High of 70; partly cloudy

Objectives: calibrate high flow pumping, hydrosleeves and low flow

YSI 1 - 044947

YSI 2 - 039544

YSI 3 -

YSI Calibration Solution	lot #	exp.	manufacturer
pH4	961282	09/21	Pine
pH7	96K721	11/21	Pine
pH10	96B956	02/21	Pine
Ø Turb	19330173	10/20	GFS
T-b	19519380090	09/20	YSI
Cond.	96Z170	04/20	Pine
ORP	96K142	09/20	Pine

YSI 1	DO	cond	pH4	pH7	pH10	ORP	Ø turb	turb
pre	10.9	1112	4.02	7.01	10.04	246.2	1.94	88.7
post	102.4	1413	4.00	7.00	10.00	240.0	0.00	124.0

YSI 2	DO	cond	pH4	pH7	pH10	ORP	Ø turb	turb
pre	102.0	1148	4.12	7.08	10.02	236.5	0.2	122.6
post	101.0	1413	4.00	7.00	10.00	240.0	0.0	124.0

YSI 3	DO	cond	pH4	pH7	pH10	ORP	Ø turb	turb
pre	100.8	1066	3.98	6.97	9.99	237.2	0.08	72.77
post	101.0	1413	4.00	7.00	10.00	240.0	0.00	124.0

Rite in the Rain

Location BELTON, SC Date 03/31/20

Project / Client LEWIS DRIVE/KM

0900 BEGIN GW SAMPLING

✓0920	MW-23-031120	VOC
✓0925	MW-23-D-031120	VOC
✓0930	MW-45-031120	VOC
✓0945	MW-07-031120	VOC
✓1015	MW-15B-031120	VOC
✓1030	MW-14-031020	VOC
✓1035	MW-14B-031020	VOC
✓1045	MW-13B-031020	VOC

0800 AERATORS TO BROWNS CREEK TURNED OFF

✓1055	MW-13-031120	VOC
✓1115	MW-48B-031120	VOC

1145 TEAM RETURNS TO COMPOUND TO GEAR DOWN AND BREAK FOR LUNCH.

1245 RETURN FROM LUNCH

✓1335	MW-50B-031120	
✓1350	MW-33T-031120	
✓1400	MW-31-031120	
✓1410	MW-47-031120	
✓1605	MW-57-031120	VOC, SULFATE
✓1610	MW-56-031120	VOC, SULFATE

1700 MW, CS RETURN TO COMPOUND

Location: BELTON, SC Date 3/11/20

Project / Client LEWIS DRIVE / KM

1200 CONT TO GEAR DOWN AND PACK COOLERS. ②

✓ 1730 FB02-031120

✓ TB02-031120

Invo: KINCH2MGA-LEWIS Date : 04Mar20 Shipping : 0.00
Customer : P758897 Weight : 10 LBS Special : 0.00
Phone : (615)758-5858 COD : Handling : 0.00
Sat Del : N DV : 0.00 Total : 0.00

Svcs: STANDARD OVERNIGHT
TRCK: 1663 5752 7574

1830 TEAM DEPARTS FIELD

3/11/20

Rite in the Rain

Location BELTON, SC Date 3-11-20

Project / Client LEWIS DRIVE / KM

PERSONNEL: T. HALL, M. WARREN, C. SUTTON, A. FUGATE

WEATHER: SUNNY 70°/52°F

OBJECTIVE GW SAMPLING

0700 PERSONNEL ONSITE

0710 H+S MEETING

0720: CALIBRATE PID'S

045285 → 100.1

046986 → 100.0

0740 GATHER EQUIPMENT TO BEGIN PUMPING AT MW-50B.

0800 TURNED OF BCA-01 + BLA-02

0830 BEGIN SETTING UP TO PURGE AT MW-50B

0850 BEGIN PURGE AT MW-50B.

1110 TARGET VOLUME REACHED.

1111 BEGIN RECOVERY DATA COLLECTION

1145 FINISH RECOVERY

1200 TEAM TO LUNCH

1300 BACK FROM LUNCH

1320 SET UP AT MW-12B

1355 BEGIN PURGE AT MW-12B

1420 STOPPED PURGE. TARGET VOLUME REACHED

1440 BACK TO COMPOUND TO EMPTY TOTES

Rite in the Rain

8

Location BELTON, SC Date 3-11-20

Project / Client LEWIS DRIVE/KM

1530	BEGIN SETUP AT MW-17B
1540	BEGIN PURGE AT MW-17B
1545	WELL DRY AFTER PUMPING @ 18GPM FOR 5 MIN.
1550	AFTER 5 MIN RECHARGE BEGIN PUMPING AGAIN @ 6 GPM.
1635	REACHED 5 WELL VOLUMES BEGIN RECOVERY DATA AT MW-17B
1715	FINISHED RECOVERY DATA AT MW-17B.
1720	BACK TO COMPOUND TO EMPTY TOTE OF PURGE WATER.
1740	BEGIN CLEAN-UP.
1830	TEAM OFFSITE

3.11.20

Location ~~Benton, SC~~ BELTON, SC Date 5/12/20

Project / Client Lewis Drive

Personell: M. Warren, T. Hall, C. Sutton, A. Furness

Weather: High of 71°F; Partly cloudy

Objectives: Continue collecting hydrosleeves, continue with low flows and collect surface water samples

YSI 1 - # 04A947

YSI Calibration Solution	lot #	exp. date	manufacturer
pH 4	9GZ282	04/21	Pine
pH 7	9G K721	11/21	Pine
pH 10	9GB956	02/21	Pine
ORP	9GK142	08/20	Pine
0 Turb	9GL170	09/20	Pine
Turb	193 I938 0090	09/20	YSI
Cond	19330173	10/20	OFS

YSI 1	DO	pH 4	pH 7	pH 10	cond	orp	0 turb	4 turb
pre	101.6	3.98	7.00	10.02	1394	229.9	2.99	138.56
post	101.9	4.00	7.00	10.00	1413	240.0	0.00	124.00

✓0845	MW-26B-031220	VOC
0855	~~MW-26-031220~~	~~VOC~~
✓0855	MW-26-031220	VOC
✓0910	MW-23B-031220	VOC
✓0925	MW-45B-031220	VOC
✓0945	MW-21-031220	VOC
✓1000	MW-17B-031220	VOC ✱DILUTE✱
1020	~~MW-17-031220~~	~~VOC~~

Location BELTON, SC Date 03/12/20

Project / Client ~~WELL~~ LEWIS DRIVE / KM

1000	DETECTED < 0.01 ft OF PRODUCT IN MW-17B WITH SOUNDER. CONFIRMED PRODUCT WITH BAILER.	
1020	COME BACK TO MW-17 FOR LOW FLOW	
✓1030	MW-20-031220	VOC MNA
1100	RETURN TO COMPOUND	
1120	BREAK FOR LUNCH	
1220	RETURN FROM LUNCH	
✓1230	MW-19-031220	VOC MNA
✓1250	MW-29-031220	VOC
~~✓~~1300	RETURN TO COMPOUND TO LABEL BOTTLES.	
✓1350	MW-44-031220	VOC
✓1400	MW-44B-031220	VOC
✓1410	MW-01B-031220	VOC
✓1420	MW-01-031220	VOC, MNA
✓1440	MW-27B-031220	VOC
✓1450	MW-27-031220	VOC
✓1500	MW-12B-031220	VOC
✓1515	MW-11-031220	VOC, MNA
✓1540	MW-2R-031220	VOC, MNA
✓1555	FB03-031220	VOC
—	TB03-031220	VOC

Rite in the Rain.

Location BELTON, SC Date 03/12/20

Project / Client LEWIS DRIVE

Invo: KINCH2MGA-LEWIS Date : 04Mar20
Customer : P758897 Weight : 10 LBS
Phone : (615)758-5858 COD :
Sat Del : N DV :
Svcs: STANDARD OVERNIGHT
TRCK: 1663 5752 7696

Shipping :	0.00
Special :	0.00
Handling :	0.00
0.00 Total :	0.00

Invo: KINCH2MGA-LEWIS Date : 04Mar20
Customer : P758897 Weight : 10 LBS
Phone : (615)758-5858 COD :
Sat Del : N DV :
Svcs: STANDARD OVERNIGHT
TRCK: 1663 5752 7600

Shipping :	0.00
Special :	0.00
Handling :	0.00
0.00 Total :	0.00

1600 HEAVY RAINS AND THUNDER BEGINS. TEAM SHELTERS IN PLACE UNTIL STORM PASSES.

1600 CONTINUE COCs AND

1645 TH,CS CONTINUE COLECTING LOW FLOW PARAMETERS.

1700 TEAM RETURNS TO COMPOUND TO GEAR DOWN AND CONTINUE PACKING COOLERS,

1730 TEAM DEPARTS FIELD

03/12/20

Melissa Allen

Location BELTON, SC Date 3-12-20

Project / Client LEWIS DRIVE / KM

PERSONNEL: T. HALL, C. SUTTON

WEATHER: CLOUDY 73°/63°F

OBJECTIVE: SW SAMPLING

0700	PERSONNEL ONSITE		
0720	PTSP + SAFE WORK PERMIT COMPLETED		
0730	CALIBRATE PIDs		
	045285 → 100.1		
	046986 → 100.1		
0750	GATHER EQUIPMENT FOR SW SAMPLING		
0820	BEGIN HIKE TO SW-11		
0915	COLLECT	SW11-031220	VOC
0925	COLLECT	SW10-031220	VOC
0935	COLLECT	SW09-031220	VOC
	NEW STAKES ADDED TO SW11 + SW10		
0945	COLLECT	SW08-031220	VOC
1015	COLLECT	SW13-031220	VOC + MNA
1040	COLLECT	SW04-031220	VOC + MNA
1050	COLLECT	SW02-031220	VOC + MNA
1100	TEAM TO LUNCH		
1200	RETURN FROM LUNCH		
1300	COLLECT	SW01-031220	VOC, MNA
1310	COLLECT	SW07-031220	VOC

Rite in the Rain

10

Location BELTON, SC Date 3-12-20

Project / Client LEWIS DRIVE / KM

1325	COLLECT SW12-031220	VOC + MNA
1335	COLLECT SW03-031220	VOC
1415	COLLECT SW14-031220	VOC + MNA
1455	COLLECT SW05-031220	VOC
1505	BEGIN PURGE AT MW-46	
1540	COLLECT MW-46-031220	VOC + SULFATE
1620	COMPLETE SETUP AT MW-17 TO BEGIN LOW FLOW	
1630	BEGIN PURGE AT MW-17	
1637	MW-17 WENT DRY, WILL SAMPLE NEXT DAY.	
1700	RETURN TO COMPOUND TO GEAR DOWN.	
1730	TEAM DEPARTS FIELD	

03/12/20

Location Belton, SC Date 03/13/20

Project / Client Lewis Drive

Personell: M. Warren, T. Hall, C. Sutton, A. Furness

Weather: High of 62°F; mostly cloudy; chance of light rain

Objectives: Complete hydrasleeve sampling, collect TROLL data; Cover daylighting areas, repair DS-15, and Slope on potential location for SW-15

0800 M. WARREN BEGINS TROLL DATA COLLECTION.

0825 MW-29 TROLL STOPPED LOGGING DATA ON 12/31/19. M. WARREN RESET TROLL TO BEGIN COLLECTING DATA.

1130 M. WARREN CONTINUES TO RESET TROLLS.

1145 M. WARREN TALKS WITH FRAN ABOUT THE REMOVAL OF SEDIMENT TUBES. CONFIRMED ALL LOCATIONS THAT WERE APPROVED FOR REMOVAL IS COMPLETE.

1200 M. WARREN BREAKS TO PICK UP LUNCH.

1245 M. WARREN RETURNS WITH LUNCH

Rite in the Rain

Location BELTON, SC Date 03/13/20

Project / Client LEWIS DRIVE / KM

1250 M. WARREN CONTINUES TO RESET TROLL DATA.

1330 M. WARREN ARRIVES TO SW-14 AREA TO SCOPE A LOCATION FOR POTENTIAL SW-15.

1345 M. WARREN RETURNS TO COMPOUND TO BEGIN CC AND START PACKING COOLERS

1445 TEAM RETURNS TO COMPOUND TO GEAR DOWN

1530 TEAM DEPARTS FIELD

03/13/20

Location BELTON, SC Date 3-13-20

Project / Client LEWIS DRIVE / KM

PERSONNEL: T. HALL, C. SUTTON

WEATHER: RAIN + CLOUDS 73° / 60°F

OBJECTIVE: COLLECT GW SAMPLES

0700: TEAM ONSITE

0710: COMPLETE SWP + PTSP

0730: CALIBRATE PID

045285 → 100.0

046986 → 100.2

0835: COLLECT MW-36-031320 VOC

0840: COLLECT MW-36-D-031320 VOC

0855: COLLECT MW-17-031320 VOC

0900: DTW @ MW-07 = 6.81

0905: ~~COLLECT MW-07-031320 VOC~~

~~SHEEN IN VIALS NEEDS DILUTED~~

0935: COLLECT MW-30-031320 VOC

0950: COLLECT MW-08-031320 VOC, MNA

1005: COLLECT MW-32-031320 VOC, MNA

1030: COLLECT MW-04-031320 VOC, MNA

1045: COLLECT MW-02-031320 VOC, MNA

1055: COLLECT MW-02B-031320 VOC

1115: COLLECT MW-09B-031320 VOC

1120: COLLECT MW-09-031320 VOC + MNA

1140: COLLECT MW-05-031320 VOC

1145: COLLECT MW-05-D-031320 VOC

Rite in the Rain

12

Location BEITON, SC Date 03/13/20

Project / Client LEWIS DRIVE / ICM

✓1150:	COLLECT	MW-06-031320	VOC
✓1155:	COLLECT	MW-06B-031320	VOC
1200:	LUNCH		
1230:	RETURN FROM LUNCH		
✓1240:	COLLECT	MW-10-031320	VOC + MNA
✓1250:	COLLECT	MW-16-031320	VOC + MNA
✓1305:	COLLECT	MW-18-031320	VOC + MNA
✓1315:	COLLECT	MW-08-031320	VOC + MNA
✓1345:	COLLECT	VBS-2-031320	VOC
✓1405:	COLLECT	FB04-031320	VOC
✓0845:	COLLECT	MW-36B-031320	~~0845~~ VOC
✓1430:	COLLECT	VBS-3-031320	VOC
—	—	TBOS-031320	TB

Invo: KINCH2MGA-LEWIS Date : 11Dec19
Customer : P746133 Weight : 10 LBS
Phone : (615)758-5858 COD :
Sat Del : Y DV :

Shipping : 0.00
Special : 0.00
Handling : 0.00
0.00 Total : 0.00

Svcs: PRIORITY OVERNIGHT
TRCK: 1382 4807 4524

1530 TEAM DEPARTS FIELD

03/13/20

Table 2 - DO Measurement List

SM: Tom Wiley **Client:** Plantation Pipe Line **Weather:** CLOUDY 73°/63°F

PN: D3159800/D2161400

Project: Monthly Monitoring **Measuring Method:** Oil/Water Interface Probe

Technicians: T. HALL, J. MORGAN **Date:** 4/8/19 SOME WELLS GUAGED ON 4/9 NOTED IN TIME BOX

	Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
*	MW-29 -	1030	1.9	—	3.37	14.95	has TROLL
*	TW-73 -	1035	0.0	—	4.39	14.07	
*	MW-19 -	1045	269.1	—	9.34	12.15	STRONG ODOR
	RW-11	[redacted]	[redacted]	—	[redacted]	16.57	
	RW-12					24.22	
	RS-08	0915 4/9	58.3	—	7.24	17.79	Sock Weight = 845g Replaced Weight = 95g
*	MW-20 -	1048	436.0	—	6.56	19.40	STRONG ODOR
	RS-07					15.75	
	RT-1A	1435	559.4	—	7.31	18.60	Sock Weight = 395g Replaced Weight = 85g
	RT-1B	1445	1035	—	7.34	17.62	Sock Weight = 795g Replaced Weight = 90g
	RT-1C	1450	242.5	—	7.94	18.50	Sock Weight = 405g Replaced Weight = 95g
*	TW-67 -	1055	1.5	—	6.56	26.46	
	RW-01					20.75	
*	MW-11 -	1115	860.5	—	23.11	32.40	STRONG ODOR
	RW-06					38.80	
	RW-08					34.39	
	RW-09					38.02	
*	MW-12 -	1120	0.3	—	10.61	21.03	has TROLL;
*	MW-12B -	1123	1.1	—	[illegible] 10.58	44.31	
*	TW-59 -	1128	0.2	—	9.77	22.00	
*	MW-28 -	1132	0.0	—	17.42	26.08	
*	MW-35 -	1140	0.0	—	6.79	26.26	
*	MW-25 -	[redacted] 1145	0.0	—	9.16	18.08	has TROLL
*	MW-25B -	[redacted] 1150	0.0	—	2.68	53.13	
*	MW-41 -	1152	0.0	—	3.68	13.19	
*	TW-66 -	1155	0.3	—	0.0	23.74	WELL BEGAN DAYLIGHTING AFTER OPENING
*	TW-60 -	1200	0.1	—	0.0	40.55	"

NOT ABLE TO GUAGE

	TIME	PID	DTP	DTW	TD	
RT-2A					7.35	
RT-2B					7.13	
RT-2C					9.32	
RT-2D					7.28	
RT-2E					8.38	
RT-2F					9.30	
RT-2G					10.05	
RT-2I					10.00	
RT-2J					10.00	
RT-2K	1015 <4/9	12.2	—	1.48	2.20	Sock Weight = 155 g Replaced Weight = 95 g
RT-2L					5.82	
RW-14					51.12	
MW-39	1205	0.5	=	4.09	13.03	has TROLL
MW-15	1208	1.4	=	8.25	19.18	
MW-15B	1210	2.9	=	13.38	80.90	
RS-20					10.44	
RS-04					10.12	
RS-06					24.31	
MW-16					20.58	
RS-12					29.10	
RS-11					16.82	
RS-09					16.11	
RS-18					19.25	
MW-18	1215	745.7	=	15.29	20.11	
MW-08	1220	0.0	=	7.78	19.84	
RS-13					17.70	
RS-15					17.55	
RS-16					18.46	
MW-55	1400	15.9		13.15	24.90	replace dolphin lock with Plantation lock
MW-56	1100	0.8	=	3.27		replace dolphin lock with Plantation lock
MW-57	1105	4.2	=	4.78		replace dolphin lock with Plantation lock

Skimmers	TIME	PID	Depth to Product	Depth to Water	Total Depth	Comments
RS-17	0955	1210	—	1.14	18.97	Prod. Rec = 0 oz
RS-14	0945	207.7	—	0.96	19.04	Prod. Rec = 0 oz SKIMMER EMPTY. LOWERED
RS-10	0830 4/9	216.5	—	2.24	19.99	Prod. Rec = 0 oz
RW-10 Hay	~~0820~~ 0920	~~1116~~ 1116	—	~~5.24~~ 5.27	57.46	Prod. Rec = 0 oz
RS-05	0835 4/9	332.3	3.36	3.42	24.97	Prod. Rec = 10 oz
RS-01	0845 4/9	1610	3.40	3.41	22.46	Prod. Rec = 0 oz
RS-02	0850 4/9	50.3	2.79	2.80	19.38	Prod. Rec = 5 oz
RW-15 Hay	0905 4/9	1117	—	6.45	38.67	Prod. Rec = 0 oz STRONG ODOR
RW-02	1610	838.3	17.47	17.48	26.50	Prod. Rec = 0 oz LESS THAN 1 OZ
RW-03	1500	1880	~~17.55~~ 17.55	~~17.73~~ 17.73	33.81	Prod. Rec = 1750 oz
RW-04	1625	607	22.85	22.89	38.65	Prod. Rec = 0 oz LESS THAN 1 OZ
RW-05	1645	1276	27.41	27.42	37.53	Prod. Rec = 0 oz LESS THAN 1 OZ
RW-07	1655	610	18.16	18.17	42.78	Prod. Rec = 0 oz LESS THAN 1 OZ

BIOLOGICAL AROUND WELL

Locations with Socks
Locations with skimmers
Wells historically found to have product
Collect DO at SW Location

BTOC - below top of casing
ft - feet
PN - Project Number
WL - Water Level
NM = Interface probe detected product, and bailer confirmed no product present. No odor present.

[1]Total depths collected 4/5/18

~~RW-03~~ ~~17.55~~ ~~17.73~~

After a discussion on 7/12/19 between Tom Wiley and Bethany Garvey, it is assumed the fluid ounces listed for RS-02 and RS-05 are actually milliliters. These values were converted to fl oz for the 'product skimmer data' table.
It is assumed that the 1750 oz listed for RW-03 is actually a depth, therefore, the 13 oz listed on the 'product skimmer data' table for April is in between the ounces collected the previous quarter (18 oz) and the following quarter (9 oz).

Table 2 - Gauging Sheet

SM: Tom Wiley **Client:** Plantation Pipe Line **Weather:** Sunny/clear H75°F/L61°F

PN: D3159800/D2161400

Project: Monthly Monitoring **Measuring Method:** Oil/Water Interface Probe

Technicians: JM, AD, TH **Date:** 5/13/2019

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	DO(mg/L)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-29	0840	0.00	—	4.19	14.95	--	has TROLL
TW-73	0842	0.00	—	4.04	14.07	--	
MW-19	0844	443.4	—	7.56	12.15	--	bubbling from system
RW-11	0848	1409.0	—	9.84	16.57	--	
RW-12	0854	315.2	—	8.98	24.22	--	
RS-08	0856	15.1	—	8.67	17.79	--	Sock Weight = 720 g Replaced Weight = — g
MW-20	0858	131.3	—	7.08	19.40	--	
RS-07	0900	1230.0	—	8.34	15.75	--	
RT-1A	0905	1229.0	—	8.04	18.60	--	Sock Weight = 750 g Replaced Weight = — g
RT-1B	0903	990.0	—	8.11	17.62	--	Sock Weight = 770 g Replaced Weight = — g
RT-1C	0901	210.0	—	9.68	18.50	--	Sock Weight = 435 g Replaced Weight = — g sock out of sleeve
TW-67	0905	0.4	—	7.22	20.44	--	
MW-26	0910	2.0	—	2.07	17.12	--	
MW-56	0917	0.0	—	4.02	17.60	--	
MW-57	0915	0.9	—	5.67	17.31	--	
MW-17B	0921	288.6	—	9.59	27.42	--	
RW-01	0926	410.2	—	11.63	20.75	--	
MW-11	0930	2609.2	—	23.76	32.40	--	
RW-06	0935	80.9	—	21.86	38.80	--	
RW-08	0937	258.5	—	12.07	34.39	--	
RW-09	0938	10.7	—	8.84	38.02	--	
MW-12	0940	7.1	—	9.24	21.03	--	has TROLL
MW-12B	0942	3.6	—	10.31	44.31	--	
TW-59	0945	0.5	—	ARTESIAN	22.00	--	
MW-28	0952	H	—	18.14	26.08	--	PID error - only reads 2000 ppm
MW-35	1003	—	—	7.21	26.26	--	
MW-25	1005	—	—	6.26	18.08	--	has TROLL
MW-25B	1006	—	—	2.51	53.13	--	
MW-41	1008	—	—	3.28	13.19	--	
TW-66	1010	—	—	ARTESIAN	23.74	--	
TW-60	1012	—	—	5.98	40.55	--	

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	DO(mg/L)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
RT-2A	1017	—	—	0.62	7.35	--	
RT-2B	1018	—	—	0.60	7.13	--	
RT-2C	1019	—	—	1.21	9.32	--	
RT-2D	1020	—	—	1.30	7.28	--	
RT-2E	1021	—	—	1.38	8.38	--	
RT-2F	1022	—	—	1.74	9.30	--	
RT-2G	1023	—	—	1.14	10.05	--	
RT-2I	1024	—	—	0.65	10.00	--	
RT-2J	1025	—	—	ARTESIAN	10.00	--	
RT-2K	1026	—	—	0.70	2.20	--	Sock Weight = 360 g Replaced Weight = — g
RT-2L	1027	—	—	1.01	5.82	--	
MW-40	1033	—	—	1.72	13.15	--	has TROLL
RW-14	1037	—	—	8.61	51.12	--	
MW-39	1040	—	—	4.07	13.03	--	has TROLL
MW-34	1042	—	—	2.58	7.82	--	
MW-15	1045	—	—	8.94	19.18	--	
MW-15B	1044	—	—	13.42	80.90	--	
MW-38	1050	—	—	1.12	11.51	--	
MW-37	1051	—	—	3.10	18.03	--	
MW-51	1054	—	—	17.29	25.38	--	
MW-52	1056	—	—	15.46	32.93	--	
MW-54	1245	—	—	8.12	25.55	--	
MW-53	1240	—	—	5.84	21.12	--	
RS-20	1251	—	—	3.75	10.44	--	
MW-07	1255	—	—	6.90	14.34	--	
RS-04	1257	—	—	5.02	10.12	--	
RS-06	1259	—	—	4.51	24.31	--	
MW-16	1306	—	—	ARTESIAN	20.58	--	
RS-12	1301	—	—	3.27	29.10	--	
RS-11	1302	—	—	2.94	16.82	--	
RS-09	1303	—	—	4.37	16.11	--	
RS-18	1304	—	—	4.37	19.25	--	
MW-18	1308	—	—	12.74	20.11	--	difficult to get solid reading b/c sponge
MW-08	1320	—	8.02	9.02	19.84	--	~1.0 ft product will check w/ bailer
RS-13	1326	—	—	2.14	17.70	--	
RS-15	1330	—	—	3.14	17.55	--	
RS-16	1328	—	—	3.58	18.46	--	
MW-36	1343	—	—	13.86	23.84	--	
MW-55	1345	—	—	14.60	25.20	--	Middle of ant hill

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	DO(mg/L)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
Skimmers	--	--	--	--	--	--	--
RS-17	1045	258.3	—	3.01	18.97	--	Prod. Rec = NO PRODUCT
RS-14	1055	468.6	-	2.72	19.04	--	Prod. Rec = 2.0
RS-10	1020	236.10	-	3.98	19.99	--	Prod. Rec = NO PRODUCT
RW-10	1010	370.10	—	6.86	57.46	--	Prod. Rec = NO PRODUCT
RS-05	1005	355.2	4.76	4.87	24.97	--	Prod. Rec = .20 oz
RS-01	1000	193.8	—	4.92	22.46	--	Prod. Rec = NO PRODUCT
RS-02	0950	16.8	—	4.12	19.38	--	Prod. Rec = .75 oz
RW-15	1035	763.6	—	7.87	38.67	--	Prod. Rec = NO PRODUCT
RW-02	1210	373.3	18.20	18.22	26.50	--	Prod. Rec = NO PRODUCT
RW-03	1220	2100	19.16	19.20	33.81	--	Prod. Rec = .20 oz
RW-04	1250	1068	23.73	23.74	38.65	--	Prod. Rec = NO PRODUCT
RW-05	1300	1076	28.63	28.64	37.53	--	Prod. Rec = NO PRODUCT
RW-07	1315	506.6	19.07	19.08	42.78	--	Prod. Rec =

Locations with Socks

Locations with skimmers

Wells historically found to have product

Collect DO at SW Location

BTOC - below top of casing

ft - feet

PN - Project Number

[1]Total depths collected 4/5/18

WL - Water Level

ppm - parts per million

SM - Site Manager

Prod. Rec = Product Recovered

Table 2 - Gauging Sheet

SM: Tom Wiley **Client:** Plantation Pipe Line **Weather:** SUNNY + CLEAR 72°/48°F

PN: D3159800/D2161400

Project: Monthly Monitoring **Measuring Method:** YSI PRO DSS

Technicians: JH, JM, AD **Date:** 5-14-19

Remember to take photos at all surface water locations

Sample Location	Time	Water Level	pH	Turbidity	Conductivity	Temperature	DO(mg/L)	ORP	Comments
SW-01	1010	0.6	6.81	7.5	0.047	21.0°C	5.50	277.1	
SW-02	1005	1.8	6.96	10.3	0.053	20.1°C	4.73	171.2	
SW-03 0.7wc	1030	~~N/A~~ 0.7	–	–	–	–	–	–	
SW-04	1000	–	7.73	13.4	0.055	19.8	4.71	126.7	
SW-05	1430	0.35	–	–	–	–	–	–	
SW-07	1015	–	–	–	–	–	–	–	
SW-08	0950	0.7	–	–	–	–	–	–	
SW-09	0945	–	–	–	–	–	–	–	
SW-10	0940	0.5	–	–	–	–	–	–	
SW-11	0930	–	–	–	–	–	–	–	
SW-12	1025	N/A	7.08	18.6	0.050	18.7°C	6.85	304.5	no WL stake
SW-13	0955	–	8.32	87.3	0.048	20.8°C	6.77	200.1	
SW-14	1400	–	–	–	–	–	–	–	

Table 2 - Gauging Sheet

Page: 1 of 4

SM: Tom Wiley **Client:** Plantation Pipe Line **Weather:** mid 80's / Partly Cloudy

PN: D3159800/D2161400

Project: Monthly Monitoring **Measuring Method:** Oil/Water Interface Probe

Technicians: M. Warren, A. Dennis, T. Hall, J. Morgan **Date:** 06/03/19

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	DO(mg/L)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-29	0947	0.0	—	6.33	14.95	--	has TROLL
MW-19	0952	2000+	—	8.30	12.15	--	PID = 11.5 after clearing cap
RW-11	0958	2000+	8.85	8.87	16.57	--	Air Sparging heard / PID dropped to 2000+
RW-12	1000	2000+	—	10.00	24.22	--	Air Sparge heard / PID dropped ~~730~~
MW-20	1002	1008	—	8.14	19.40	--	
RT-1A	1013	2000+	—	9.32	18.60	--	Sock Weight = 730 g Replaced Weight = N/Rg
RT-1B	1010	2000+	—	9.33	17.62	--	Sock Weight = 770 g Replaced Weight = N/Rg
RT-1C	1005	2000+	—	9.41	18.50	--	Sock Weight = 535 g Replaced Weight = N/Rg
MW-26	1017	1.8	—	4.13	17.12	--	
MW-26B	1018	2.4	—	3.74	41.05	--	
MW-23	1022	0.7	—	6.63	23.21	--	
MW-23B	1023	5.3	—	5.79	53.45	--	
MW-46	1030	1.4	—	6.32	17.08	--	
MW-45	1028	0.7	—	9.88	14.45	--	Ant Hills
MW-45B	1025	0.1	—	10.52	21.96	--	Ant Hills
MW-21	1035	0.0	—	12.21	20.66	--	
MW-17	1039	226.9	—	9.73	11.22	--	Low Flow
MW-17B	1037	1923	—	10.69	27.42	--	Dropped to 180 ppm (PID) after opening → 0.5 after closing
MW-22	1041	7.5	—	7.72	10.34	--	Low Flow
MW-44	1056	0.0	—	6.89	9.76	--	Low Flow
MW-44B	1100	0.4	—	8.57	34.54	--	
MW-01	1102	2.2	—	7.55	16.58	--	has BaroTROLL
MW-01B	1105	7.8	—	6.55	44.52	--	
RW-01	1114	2000+	—	11.66	20.75	--	
MW-27	1110	415.7	—	21.14	29.58	--	Ant Hill
MW-27B	1112	5.8	—	24.80	50.50	--	

Table 2 - Gauging Sheet

Page: 2 of 4

SM: Tom Wiley **Client:** Plantation Pipe Line **Weather:** MID 80's CLOUDY HUMID

PN: D3159800/D2161400 **Measuring Method:** Oil/Water Interface Probe

Project: Monthly Monitoring **Date:** 06/03/19

Technicians: MW, TH, OM, AD

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	DO(mg/L)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-11	1116	2000+	—	24.69	32.40	--	
RW-06	1117	1717	—	22.71	38.80	--	
RW-08	1120	1019	—	12.79	34.39	--	
RW-09	1124	269.3	—	9.83	38.02	--	
MW-12	1126	17.8	—	10.43	21.03	--	has TROLL Δ Change Locks Δ
MW-12B	1128	5.2	—	11.57	44.31	--	
MW-28	1130	0.3	—	19.14	26.08	--	
MW-49	1132	0.0	—	14.68	23.80	--	
MW-35	1135	7.3	—	7.86	26.26	--	
MW-25	1140	0.0	—	6.49	18.08	--	has TROLL
MW-25B	1141	0.0	—	3.11	53.13	--	
MW-42	1147	2.3	—	4.52	13.39	--	
MW-41	1150	2.9	—	3.07	13.19	--	
MW-40	1155	252.4	—	2.33	13.15	--	has TROLL
RW-14	1312	14.8	—	8.65	51.12	--	
MW-39	1315	4.7	—	4.54	13.03	--	has TROLL
MW-34	1318	3.6	—	3.07	7.82	--	
MW-15	1323	35.0	—	4.84	19.18	--	
MW-15B	1321	154.2	—	13.95	80.90	--	
MW-38	1340	2.61	—	1.36	11.51	--	
MW-37	1342	1.6	—	3.14	18.03	--	
MW-24	1327	0.5	—	4.44	15.50	--	
MW-24B	1325	4.5	—	5.44	42.49	--	Anthill South well
MW-43	1330	7.2	—	5.03	10.30	--	
MW-43B	1335	0.7	—	1.45	56.55	--	
MW-13	1351	3.1	—	13.52	22.15	--	

Table 2 - Gauging Sheet

Client: Plantation Pipe Line

Weather: Mid 80's / Cloudy / Humid

SM: Tom Wiley

PN: D3159800/D2161400

Project: Monthly Monitoring

Measuring Method: Oil/Water Interface Probe

Technicians: M. W, AD, JM, TH

Date: 06/03/19

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	DO(mg/L)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-13B	1350	2.8	—	14.28	55.05	--	
MW-14	1354	20.8	—	17.53	22.22	--	
MW-14B	1352	54.1	—	18.33	85.34	--	
MW-50B	1355	9.4	—	17.75	102.20	--	
MW-48B	1358	7.0	—	15.82	74.07	--	
MW-33T	1402	4.3	—	21.81	99.89	--	
MW-31	1405	1.5	—	15.86	28.03	--	
MW-47	1407	1.3	—	13.64	22.86	--	
MW-10	1426	0.7	—	11.56	23.21	--	has BaroTROLL
MW-32	1429	0.4	—	13.55	28.85	--	
MW-03	1431	1.4	—	7.0	20.28	--	overpressured; needs cap replacement / pad damaged
MW-30	1450	2.5	—	10.64	14.70	--	
MW-04	1452	1.4	—	7.17	19.56	--	
MW-05	1517	0.6	—	9.89	19.90	--	
MW-02	1455	10.1	—	3.20	20.58	--	has TROLL, Bubbling within Casing
MW-02B	1502	2.9	—	5.48	81.72	--	
MW-09	1310	25.0	—	5.08	20.21	--	Bubbling within Casing
MW-09B	1512	1.2	—	5.22	151.00	--	
MW-06	1524	5.9	—	8.84	19.39	--	
MW-06B	1520	12.1	—	8.59	85.61	--	Ant nest inside Casing
MW-07	1525	1099	—	7.99	14.34	--	
MW-16	1535	2000+	—	5.50	20.58	--	Bubbling within Casing
MW-18	1542	2000	Bail for Product	14.7	20.11	--	Bubbling within Casing
MW-08	1540	2.4	—	9.15	19.84	--	
MW-36	1600	36.5	—	14.87	23.84	--	
MW-36B	1402	2.9	—	13.56	42.81	--	

Table 2 - Gauging Sheet

Page: 4 of 4

SM: Tom Wiley **Client:** Plantation Pipe Line **Weather:** Mid 80's / Humid Cloudy

PN: D3159800/D2161400

Project: Monthly Monitoring **Measuring Method:** Oil/Water Interface Probe

Technicians: M.W; TH, JM, AD **Date:** 06/03/14

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	DO(mg/L)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
Skimmers	--	--	--	--	--	--	--
RS-14	0800	461.3	—	3.82	19.04	--	Prod. Rec = All water 0.0 oz
RW-10	0805	144.6	—	7.27	57.46	--	Prod. Rec = All water 0.0 oz
RS-05	0810	1136	—	5.67	24.97	--	Prod. Rec = 0.2 oz
RS-01	0820	836	6.09	6.11	22.46	--	Prod. Rec = No water in skimmer
RS-02	0824	8.7	—	5.71	19.38	--	Prod. Rec = 0.0 oz
RW-15	0830	297	—	9.21	38.67	--	Prod. Rec = Dry
RW-02	0750	1228	19.45	19.47	26.50	--	Prod. Rec = 0.2 oz
RW-03	0740	715.4	20.15	20.16	33.81	--	Prod. Rec = 9.0 oz
RW-04	1636	2000+	22.84	22.86	38.65	--	Prod. Rec = 0.5 oz 600 ppm w lite cap
RW-05	1630	2000+	29.25	29.27	37.53	--	Prod. Rec = 5.0 oz 2000 Tppm Capon
RW-07	1622	2000+	—	20.0	42.78	--	Prod. Rec = 0.0 <Dry> 0 ppm w lite cap

Locations with Socks

Locations with skimmers

Wells historically found to have product

Collect DO at SW Location

BTOC - below top of casing

ft - feet

PN - Project Number

[1]Total depths collected 4/5/18

WL - Water Level

ppm - parts per million

SM - Site Manager

Prod. Rec = Product Recovered

Table 2 - Gauging Sheet

SM: Tom Wiley **Client:** Plantation Pipe Line **Weather:** Sunny, 89°

PN: D3159800/D2161400

Project: Monthly Monitoring **Measuring Method:** YSI

Technicians: A. Dennis, J. Morgan **Date:** 6/4/2019

Remember to take photos at all surface water locations

Sample Location	Time	Water Level (FT)	pH	Turbidity (NTU)	Conductivity (mS/cm)	Temperature (C°)	DO(mg/L)	ORP (mV)	Comments
SW-01	1340	**0.3**	**6.55**	**9.5**	**0.051**	**25.6**	**8.03**	**106.2**	
SW-02	1325	**1.84**	**6.23**	**16.6**	**0.056**	**24.7**	**4.33**	**159.6**	
SW-03	N/A	**dry**	--	--	--	--	--	--	
SW-04	1315	--	**6.94**	**14.7**	**0.056**	**24.7**	**4.38**	**110.4**	
SW-05	N/A	**dry**	--	--	--	--	--	--	
SW-07	1355	--	--	--	--	--	--	--	
SW-08	1110	**0.6**	--	--	--	--	--	--	
SW-09	1055	--	--	--	--	--	--	--	
SW-10	1035	**0.4**	--	--	--	--	--	--	
SW-11	1020	--	--	--	--	--	--	--	
SW-12	1455	--	**6.52**	**173.7**	**0.047**	**21.6**	**8.01**	**115.8**	
SW-13	1120	--	**7.87**	**42.5**	**0.105**	**23.3**	**5.43**	**43.4**	
SW-14	1430	--	--	--	--	--	--	--	

Table 2 - Gauging Sheet

SM: Tom Wiley **Client:** Plantation Pipe Line **Weather:** MID 90's, PARTLY CLOUDY, HUMID

PN: D3159800/D2161400

Project: Monthly Monitoring **Measuring Method:** YSI

Technicians: M. WARREN, T. HALL **Date:** 07/17/19 AND 07/18/19

Remember to take photos at all surface water locations

(7/18/19) (7/16/19) (7/17/19) 7/18/19

Sample Location (mg/L)	Time	Water Level	pH	Turbidity	Conductivity	Temp	DO(mg/L)	ORP	Comments
SW-01 Fe^{2+}=0.0	1335	0.60	6.24	38.15	0.044	29.8	1.39	19.8	NO ODOR / NO SHEEN
SW-02 Fe^{2+}=0.0	1315	1.90	6.19	10.19	0.052	27.9	3.82	109.0	NO ODOR / BIOSHEEN
SW-03 Fe^{2+}=0.25	1425	DRY	-	-	-	-	-	-	SAMPLE WAS COLLECTED FROM STREAM ADJACENT TO STAFF GAUGE
SW-04 Fe^{2+}=0.0	1305	-	6.17	13.8	0.056	27.2	2.04	108.0	NO SHEEN / NO ODOR
SW-06 DRY	1000 (7/17/19)	—	—	—	DRY	—	—	—	Not usually sampled/YSI not usually taken DRY
SW-05 DRY	1000 (7/17/19)	DRY	—	—	DRY	—	—	—	YSI not usually taken DRY
SW-07 DRY	1350	—	—	—	DRY	—	—	—	DRY
SW-08 Fe^{2+}=0.0	1120	0.84	-	-	-	-	-	-	BIOSHEEN / NO ODOR
SW-09 Fe^{2+}=0.0	1110	-	-	-	-	-	-	-	BIOSHEEN / NO ODOR
SW-10 Fe^{2+}=2.0	1055	0.39	-	-	-	-	-	-	ORANGE FLOC / NO ODOR
SW-11 Fe^{2+}=0.0	1040	-	-	-	-	-	-	-	NO SHEEN / NO ODOR
SW-12 Fe^{2+}=0.25	1400	-	5.94	14.69	0.056	24.4	5.01	126.9	BIOSHEEN / NO ODOR
SW-13 Fe^{2+}=0.25	1325	-	6.17	2465.90	0.061	30.2	6.37	-15.6	BIOSHEEN / NO ODOR
SW-14 Fe^{2+}=0.0	1445	-	-	-	-	-	-	-	YSI not usually taken

Table 2 - Gauging Sheet

Page: 1 of 1

SM: Tom Wiley **Client:** Plantation Pipe Line **Weather:** MID 90'S, SUNNY, HUMID

PN: D3159800/D2161400

Project: Monthly Monitoring **Measuring Method:** Oil/Water Interface Probe

Technicians: M. WARREN, T. HAIL **Date:** 7/17/19

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	DO(mg/L)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-46	1033	0.0	—	7.50	17.08	--	
MW-56	1037	0.0	—	6.46	17.60	--	
MW-57	1040	2.0	—	8.08	17.30	--	
MW-38	1148	0.0	—	1.44	11.51	--	
MW-37	1146	0.0	—	3.20	18.03	--	

Locations with Socks

Locations with skimmers

Wells historically found to have product

Collect DO at SW Location

BTOC - below top of casing

ft - feet

PN - Project Number

[1]Total depths collected 4/5/18

WL - Water Level

ppm - parts per million

SM - Site Manager

Prod. Rec = Product Recovered

Table 2 - Gauging Sheet

SM: Tom Wiley **Client:** Plantation Pipe Line **Weather:** MID 90'S, SUNNY HUMID

PN: D3159800/D2161400

Project: Monthly Monitoring **Measuring Method:** Oil/Water Interface Probe

Technicians: M. WARREN, B. GARVEY, T. HALL **Date:** 08/19/19

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	DO(mg/L)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-20	0925	130.8	11.44	11.66	19.40	--	SYSTEM DOWN SINCE SATURDAY
MW-26	0940	2.7	—	6.46	17.12	--	HYDRASLEEVE
MW-23	0950	1.3	—	9.51	23.21	--	~~HY~~ TYPHOON
MW-46	0957	9.4	—	8.54	17.08	--	NO ODOR
MW-56	1001	34.1	—	7.46	17.60	--	NO ODOR
MW-57	1003	71.1	—	8.99	13.90	--	SLIGHT ODOR
MW-17B	1006	97.5	—	13.97	27.42	--	SLIGHT ODOR
MW-12B	1033	4.3	—	12.07	44.31	--	NO ODOR
MW-41	1043	0.7	—	4.2	13.19	--	HYDRASLEEVE
MW-40	1053	12.7	—	2.27	13.15	--	has TROLL NO ODOR
MW-39	1058	1.4	—	4.13	13.03	--	has TROLL NO ODOR / HYDRASLEEVE
MW-34	1056	0.4	—	3.28	7.82	--	NO ODOR
MW-15B	1102	2.7	—	15.52	80.90	--	SLIGHT ODOR
MW-38	1114	0.9	—	1.60	11.51	--	NO ODOR
MW-37	1112	0.5	—	3.32	18.03	--	NO ODOR
MW-51	1120	1.0	—	18.76	25.38	--	HYDRASLEEVE
MW-52	1118	0.7	—	16.92	32.93	--	HYDRASLEEVE
MW-54	1132	0.7	—	15.87	25.55	--	HYDRASLEEVE
MW-53	1134	0.53	—	11.80	21.12	--	HYDRASLEEVE
MW-07	1145	196.8	—	11.61	14.34	--	LOW FLOW
MW-36	1157	124.2	—	17.20	23.84	--	HYDRASLEEVE
MW-55	1205	1.6	—	18.89	25.20	--	HYDRASLEEVE

Locations with Socks

Locations with skimmers

Deploy Hydrasleeve while Gauging

Collect DO at SW Location

BTOC - below top of casing

ft - feet

PN - Project Number

[1]Total depths collected 4/5/18

WL - Water Level

ppm - parts per million

SM - Site Manager

Prod. Rec = Product Recovered

Table 2 - Gauging Sheet

SM: Tom Wiley **Client:** Plantation Pipe Line **Weather:** MID 90'S, CLOUDY, HUMID

PN: D3159800/D2161400

Project: Monthly Monitoring **Measuring Method:** YSI

Technicians: M.WARREN, B CAVEY, T. HALL **Date:** 08/19/19

Remember to take photos at all surface water locations

Sample Location	Time	Water Level (FT)	pH	Turbidity	Conductivity	Temperature	DO(mg/L)	ORP	Comments
SW-01	1435	0.08	6.91	23.80	37.8	27.1	11.79	118.3	MINNOWS PRESENT
SW-02	1113	1.72	5.97	11.76	52.1	25.7	2.24	112.6	BIOSHEEN
SW-03	1055	DRY AT	STAFF	GAUGE	-	-	-	-	WATER STREAM ADJACENT TO GAUGE
SW-04	1105	-	5.85	8.91	51.1	25.6	1.87	110.0	BIOSHEEN/MINNOWS + FROGS
SW-05	1000	DRY						DRY	DRY
SW-07	1515	-	-	-	-	-	-	-	DRY
SW-08	1005	0.50	-	-	-	-	-	-	HEAVY BIOLOGICAL SHEEN
SW-09	1000	-	-	-	-	-	-	-	BIOLOGICAL SHEEN HEAVY
SW-10	0945	0.38	-	-	-	-	-	-	ORANGE FLOC, NO ODOR
SW-11	0935	-	-	-	-	-	-	-	CLEAR FLOWING WATER
SW-12	1545	-	6.49	24.74	53.2	23.0	6.66	168.6	BIOLOGICAL SHEEN/NO ODOR
SW-13	1020	-	6.27	26.20	94.5	25.3	1.66	-42.1	BIOLOGICAL SHEEN
SW-14	1605	-	7.43	5.91	56.8	29.5	12.36	156.0	LIKE FISH AND FROGS/ALGAE

Table 2 - Gauging Sheet

Page: 1 of 45

SM: Tom Wiley | Client: Plantation Pi | Weather: MID 90's, SUNNY, HUMID

PN: D3159800/D2161400

Project: Monthly Monitoring | Measuring Method: Oil/Water Interface Probe

Technicians: M. WARREN, A. DENNIS, T. HALL, C. SUTTON | Date: 09/16/19

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-29	1000	1.3	—	10.35	14.95	has TROLL FIRE ANT HILL
MW-19	1005	276	—	11.78	12.15	TOO DRY TO SAMPLE
RW-11	1008	803.2	—	12.37	16.57	
RW-12	1010	302.8	—	DRY	12.48 ~~24.22~~	TRIPLE CHECKED + D
RS-08	1013	328.4	—	13.46	17.79	Sock Weight = 295 g Replaced Weight = 95 g
MW-20	1023	1205.0	11.87	12.07	19.40	
RS-07	1015	14.24	—	13.46	15.75	
RT-1C	1025	1108	—	13.88	18.50	Sock Weight = 295 g Replaced Weight = NA g
RT-1B	1027	388.6	—	13.28	17.62	Sock Weight = 450 g Replaced Weight = NA g
RT-1A	1030	4734	—	13.29	18.60	Sock Weight = 505 g Replaced Weight = NA g
MW-26	1040	1.8	—	7.23	17.12	
MW-26B	1040	0.0	—	8.67	41.05	
MW-23	1047	1.0	—	10.27	23.21	
MW-23B	1100	0.0	—	7.65	53.45	
MW-46	1053	1.5	—	9.32	17.08	
MW-55	1057	0.3	—	8.18	17.60	
SW-05	Remember	to gauge	and get a	photo	na	WL = 0.0 DRY
MW-57	11:01	9.4	—	9.76	17.30	
MW-45	1105	0.0	—	13.50	14.45	LOW FLOW
MW-45B	1107	0.0	—	14.01	21.96	
MW-21	1115	0.0	—	16.11	20.66	
MW-17	1122	8755	—	10.83	11.22	TOO DRY TO SAMPLE
MW-17B	1120	426.2	—	15.31	27.42	
MW-22	1136	0.1	—	9.98	10.34	TOO DRY TO SAMPLE

☆ SOCKS IN RS-08 AND RT-1C WERE ABOVE THE WL AND WERE DRY, THEREFORE SOCK WEIGHT WILL BE LOWER THAN USUAL FOR CALCULATIONS.

Table 2 - Gauging Sheet

Page: 2 of 4 4 5

SM: Tom Wiley **Client:** Plantation Pi **Weather:** MID 90's, SUNNY, HUMID

PN: D3159800/D2161400

Project: Monthly Monitoring **Measuring Method:** Oil/Water Interface Probe

Technicians: MW, TH, AD, CS **Date:** 09/16/09

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-44	1145	0.0	—	9.43	9.76	TOO DRY TO SAMPLE
MW-44B	1145	0.0	—	13.60	34.54	
MW-01	1318	0.0	—	12.08	16.58	has BaroTROLL
MW-01B	1316	0.1	—	11.78	44.52	
RW-01	1322	836.6	—	17.32	20.75	
MW-27	1332	197.7	—	26.95	29.58	
MW-27B	1333	0.0	—	26.33	50.50	
MW-11	1341	1360	29.80	29.82	32.40	
RW-06	1349	394.6	—	26.44	38.80	
RW-08	1352	543	—	16.64	34.39	
RW-09	1355	3.4	—	14.10	38.02	
MW-12	1358	0.3	—	14.67	21.03	has TROLL
MW-12B	1400	0.4	—	14.59	44.31	
MW-28	1405	0.1	—	22.95	26.08	
MW-49	1410	0.0	—	19.45	23.80	
MW-35	1415	0.1	—	10.07	26.26	
SW-03	Remember	to gauge	and get a	photo	na	WL = DRY, CREEK ADJACENT TO GAGE
MW-25	1420	0.0	—	8.47	18.08	has TROLL
MW-25B	1425	0.0	—	4.46	53.13	
MW-42	1430	0.0	—	4.44	13.39	
MW-41	1432	0.0	—	4.45	13.19	
MW-40	1437	4.2	—	2.72	13.15	has TROLL
RW-14	1443	12.0	—	~4.50	51.12	APPROXIMATE DTW, SPARGING
MW-39	1445	1.3	—	5.21	13.03	has TROLL

Table 2 - Gauging Sheet

Page: 3 of 5

SM: Tom Wiley **Client:** Plantation Pi **Weather:** MID 90'S, SUNNY, HUMID

PN: D3159800/D2161400

Project: Monthly Monitoring **Measuring Method:** Oil/Water Interface Probe

Technicians: MW, AD, TH, CS **Date:** 09/16/19

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-34	1445	0.0	—	3.36	7.82	
MW-15	1456	3.0	—	11.56	19.18	
MW-15B	1457	11.4	—	15.68	80.90	
MW-24	1503	0.0	—	5.28	15.50	
MW-24B	1500	0.0	—	5.84	42.49	
SW-01	Remember	to gauge	and get a	photo	na	WL = 0.5
MW-43	1505	0.0	—	5.29	10.30	
MW-43B	1507	0.0	—	2.64	56.55	
SW-02	Remember	to gauge	and get a	photo	na	WL = 1.42
MW-38	1352	0.7	—	1.89	11.51	
MW-37	1348	0.0	—	3.79	18.03	
SW-08	Remember	to gauge	and get a	photo	na	WL = 0.9
SW-10	Remember	to gauge	and get a	photo	na	WL = 4.0
MW-48B	1342	0.0	—	18.02	74.07	
MW-14	1340	0.0	—	17.45	22.22	
MW-14B	1338	0.4	—	18.26	85.34	
MW-13B	1335	1.6	—	23.23	55.05	
MW-13	1332	4.1	—	22.01	22.15	
MW-50B	1330	0.6	—	23.59	102.20	
MW-33T	1325	0.0	—	27.90	99.89	
MW-31	1320	0.0	—	21.63	28.03	
MW-47	1315	0.0	—	19.29	22.86	
MW-10	1045	0.0	—	19.95	23.21	has BaroTROLL
MW-32	1049	0.0	—	21.05	28.85	

Table 2 - Gauging Sheet

Page: 4 of 15

SM: Tom Wiley **Client:** Plantation Pi **Weather:** M.D 90's, SUNNY, HUMID

PN: D3159800/D2161400

Project: Monthly Monitoring **Measuring Method:** Oil/Water Interface Probe

Technicians: MW, BD, TH, CS **Date:** 09/16/19

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-03	1150	0.0	—	19.89	20.28	
MW-30	1038	0.0	—	14.56	14.70	
RS-20	1612	6.0	—	DRY	10.44	TOO DRY
MW-04	1035	0.0	—	14.48	19.56	
MW-05	1030	0.0	—	16.50	19.90	
MW-02	1142	1.0	—	14.63	20.58	has TROLL,
MW-02B	1145	1.9	—	22.23	81.72	
MW-09	1135	0.0	—	13.30	20.21	CHECK WITH BAILER, SPARGING
MW-09B	1140	0.6	—	15.49	151.00	
MW-06	1025	1.1	—	13.73	19.39	
MW-06B	1027	1.4	—	13.52	85.61	
MW-07	1020	32.5	—	12.81	14.34	LOW FLOW
RS-04	1545	26.6	—	9.77	10.12	
MW-16	1058	79.0	—	14.97	20.58	WELL SURGING
RS-06	1547	147.4	—	12.23	24.31	
RS-18	1549	30.6	—	12.48	19.25	
MW-18	1053	624.4	—	15.78	20.11	
RS-09	1600	364.3	—	11.89	16.11	
RS-11	1602	6.5	—	9.28	16.82	
RS-12	1604	0.0	—	9.59	29.10	
RS-13	1606	1.0	—	12.48	17.70	
RS-15	1608	804.3	—	9.29	17.55	
RS-16	1610	0.7	—	10.39	18.46	
MW-08	1050	0.0	—	17.16	19.84	
MW-36	1005	36.4	—	18.22	23.84	
MW-36B	1000	0.0	—	17.94	42.81	

Table 2 - Gauging Sheet

Page: 5 of 5

SM: Tom Wiley **Client:** Plantation Pi **Weather:** MID 90's, SUNNY, HUMID

PN: D3159800/D2161400

Project: Monthly Monitoring **Measuring Method:** Oil/Water Interface Probe

Technicians: MW, TH, AO, CS **Date:** 09/16/19

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
Skimmers	--	--	--	--	--	--
RS-17	1640	1525	—	10.68	18.97	Prod. Rec = ALL WATER
RS-14	1635	1020	—	9.40	19.04	Prod. Rec = ALL WATER
RS-10	1625	503.1	—	10.65	19.99	Prod. Rec = ALL WATER
RW-10	1620	311.6	—	13.74	57.46	Prod. Rec = 20Z OF WATER, THEN DRY
RS-05	1615	1084	12.10	12.30	24.97	Prod. Rec = 0.5 OZ PRODUCT
RS-01	1610	240	12.85	12.87	22.46	Prod. Rec = DRY
RS-02	1602	176.5	—	12.19	19.38	Prod. Rec = ALL WATER
RW-15	1543	238.7	—	13.74	38.67	Prod. Rec = DRY
RW-02	1654	1736	24.21	24.40	26.50	Prod. Rec = DRY
RW-03	1700	761	24.03	24.05	33.81	Prod. Rec = 1.0 OZ PRODUCT
RW-04	1713	719	29.49	29.72	38.65	Prod. Rec = ALL WATER
RW-05	1725	1822	32.88	32.93	37.53	Prod. Rec = 8.0 OZ
RW-07	1730	1889	—	23.45	42.78	Prod. Rec = DRY

Locations with Socks

Locations with skimmers

Wells historically found to have product

Wells gauged at part of the post-injection sampling event and not usually gauged semiannually

Surface water locations with staff gauge

[1]Total depths collected 4/5/18

BTOC - below top of casing

ft - feet

PN - Project Number

WL - Water Level

ppm - parts per million

SM - Site Manager

Prod. Rec = Product Recovered

Table 2 - Gauging Sheet

SM: Tom Wiley
PN: D3159800/D2161400
Project: Monthly Monitoring
Technicians: TH, CS

Client: Plantation Pipe Line

Weather: CLOUDY 75°/61°F
Measuring Method: YSI # 039544
Date: 09/18/19

Remember to take photos at all surface water locations

Sample Location	Time	Water Level	pH	Turbidity	Conductivity	Temperature	DO(mg/L)	ORP	Comments
SW-01	1625	—	6.57	7.2	46.7	25.6	11.37	109.6	
SW-02	1605	—	6.20	13.1	57.0	25.4	3.84	92.6	
SW-03	—	~	-	-	-	-	-	-	
SW-04	1555	-	7.19	10.3	55.6	25.0	5.31	92.9	DRY
SW-05	—	—	—	—	—	—	—	—	
SW-06	—	—	—	—	~	—	—	—	DRY
SW-07	—	-	-	-	-	-	-	-	Possibly dry, not usually collected DRY
SW-08	1500	—	-	-	-	-	-	-	DRY
SW-09	1450	-	-	-	-	-	-	-	
SW-10	1440	—	-	-	-	-	-	-	
SW-11	1430	-	-	-	-	-	-	-	
SW-12	1650	-	5.57	13.4	57.2	23.4	1.68	265.8	
SW-13	1515	-	7.52	15.9	85.2	24.9	5.01	89.9	DRY, SAMPLE TAKEN 3' ~~EAST~~ FROM STAKE
SW-14	1725	—	6.83	590.6	57.0	27.5	10.33	215.0	

Table 2 - Gauging Sheet

SM: Tom Wiley
PN: D3159800/D2161400
Project: Monthly Monitoring
Technicians: I. HALL, C. SUTTON, A. FURNESS

Client: Plantation Pipe Line
Weather:
Measuring Method: Oil/Water Interface Probe
Date: 11-4-19

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-20	10:55	1603	12.89	13.09	19.40	PRODUCT IN HS. WILL VERIFY W/ BAILER
MW-26	11:15	0.00	—	7.98	17.12	
MW-23	11:37	0.0	—	11.28	23.21	
MW-46	11:25	0.1	—	10.06	17.08	
MW-56	11:30	0.0	—	8.88	17.60	
MW-57	11:35	0.2	—	10.99	13.90	
MW-17B	11:40	146.5	—	16.88	27.42	
MW-12B	14:25	0.0	—	15.39	44.31	
MW-41	14:30	0.0	—	4.35	13.19	
MW-40	14:40	0.0	—	2.84	13.15	has TROLL
MW-39	14:45	0.0	—	5.06	13.03	has TROLL
MW-34	14:50	0.2	—	2.83	7.82	
MW-15B	~~14:45~~ 14:42	70.8	—	15.40	80.90	
MW-38	14:55	0.6	—	1.61	11.51	
MW-37	15:00	0.0	—	3.37	18.03	
MW-51	12:50	0.0	—	18.80	25.38	
MW-52	12:20	0.0	—	17.19	32.93	
MW-54	11:55	0.0	—	15.44	25.55	
MW-53	12:05	0.0	—	13.19	21.12	
MW-07	11:45	478.4	—	13.23	14.34	
MW-36	14:00	104.5	—	19.84	23.84	
MW-55	13:50	21.0	—	21.46	25.20	

WATER BUBBLING OUT FROM CAP.

Locations with Socks
Low Flow Locations
Deploy Hydrasleeve while Gauging
GeoProbe Pump

BTOC - below top of casing
ft - feet
PN - Project Number

[1]Total depths collected 4/5/18

WL - Water Level

ppm - parts per million
SM - Site Manager
Prod. Rec = Product Recovered

Table 2 - Gauging Sheet

SM: Tom Wiley
PN: D3159800/D2161400
Project: Monthly Monitoring
Technicians: T. HALL, A. FLYNESS

Client: Plantation Pipe Line
Measuring Method: YSI
Date:

Weather: PARTLY CLOUDY 68°/50° F

Remember to take photos at all surface water locations

Sample Location	Time	Water Level	pH	Turbidity	Conductivity	Temperature	DO(mg/L)	ORP	Comments
SW-01	1105	0.58	6.00	96.27	0.045	12.3	7.93	25.9	
SW-02	1100	1.62	6.01	17.02	0.054	13.0	3.84	128.6	
SW-03	1145	–	–	–	–	–	–	–	
SW-04	1050	–	5.96	10.12	0.051	13.4	4.29	138.7	
SW-05	–	–	–	–	–	–	–	–	
SW-07		–	–	–	–	–	–	–	
SW-08	10:30	1.04	–	–	–	–	–	–	
SW-09	10:20	–	–	–	–	–	–	–	
SW-10	10:05	0.66	–	–	–	–	–	–	
SW-11	9:55	–	–	–	–	–	–	–	
SW-12	~~11:40~~	–	~~5.46~~	~~10.12~~	~~0.051~~	~~13.4~~	~~4.29~~	~~138.7~~	
SW-13	1035	–	5.94	18.19	0.104	13.4	6.35	97.6	
SW-14	1200	–	6.67	404.8	0.071	16.7	5.10	23.1	
SW-12	11:40		6.12	13.54	0.070	12.5	4.99	134.4	

Table 2 - Gauging Sheet

SM: Tom Wiley
PN: D3159800/D2161400
Project: Monthly Monitoring
Technicians: M. Warren, T. Hall, A. Dennis, C. Sutton

Client: Plantation Pipe Line
Weather:
Measuring Method: Oil/Water Interface Probe
Date: 12/16/19

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-29	0823	0.0	NP	8.36	14.95	
MW-19	0829	434.6	7.80	7.81	12.15	WTL METER BEEPING THEN SOLID, STEADY @ 400 ppm
RW-11	0842	1254	7.10	14.20	16.57	WELL VERY PRESSURIZED. WELL SURGING NOT A CONSISTENT READING
RW-12	1008	504.5	—	—	24.22	WELL DRY
MW-20	0852	~~1753~~	NP	12.40	19.40	
RT-1A	0905	1393	NP	13.05	18.60	
RT-1B	~~0902~~ 0902	1904	NP	12.99	17.62	
RT-1C	0858	4247	NP	13.64	18.50	WELL PRESSURIZED
MW-26	0908	~~[illegible]~~ 0.3	NP	5.51	17.12	
MW-26B	0912	0.0	NP	9.19	41.05	
MW-23	0920	0.0	NP	9.98	23.21	
MW-23B	0925	0.0	NP	9.49	53.45	
SW-05		Remember to take photo				WL = NO WATER PRESENT. DRY
MW-46	0928	0.2	NP	8.34	17.08	
MW-56	0930	1.2	NP	7.08	17.60	
MW-57	0933	0.2	NP	8.87	13.90	
MW-45	0940	0.0	NP	14.31	14.45	WELL DRY
MW-45B	0943	97.6	NP	15.70	21.96	
MW-21	0945	0.0	NP	16.54	20.66	
MW-17	0955	778.4	NP	~~16.83~~	11.22	DTW = 10.85
MW-17B	0950	715.2	NP	16.40	27.42	
MW-22	0958	2.7	NP	9.57	10.34	
MW-44	1026	0.0	NP	7.83	9.76	
MW-44B	1025	0.0	NP	14.99	34.54	
MW-01	1028	560.6	NP	3.99	16.58	
MW-01B	1027	3.3	NP	11.61	44.52	
RW-01	1030	~~[illegible]~~ 2750	NP	13.19	20.75	2750 ppm
MW-27	1040	438.5	NP	27.55	29.58	

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-27B	1037	0.7	NP	29.04	50.50	
MW-11	1043	2203	31.72	31.73	32.0 ~~32.40~~	
RW-06	1239	3635	NP	26.93	38.80	
RW-08	1243	2746	NP	16.64	34.39	
RW-09	1247	17.90	NP	14.07	38.02	
MW-12	1250	0.7	NP	14.68	21.03	
MW-12B	1252	0.0	NP	14.64	44.31	
MW-28	1255	2.4	—	23.53	26.08	
MW-49	1255	0.0	—	20.10	23.80	
MW-35	1250	0.0	—	9.27	26.26	
SW-03	1250	Remember to take photo				WL = 0.70
MW-25	1246	0.0	—	5.23	18.08	
MW-25B	1245	0.0	—	4.53	53.13	
MW-42	1243	0.0	—	4.45	13.39	
MW-41	1241	0.0	—	3.81	13.19	
MW-40	1235	3.6	—	2.32	13.15	has TROLL
RW-14	1237	65.8	—	5.2	51.12	DAYLIGHTING, ADDED MORE COVER
MW-39	1231	0.0	—	4.54	13.03	has TROLL
MW-34	1230	0.0	—	2.19	7.82	
MW-15	1225	0.0	—	12.27	19.18	
MW-15B	1226	93.8	—	15.19	80.90	ODOR
MW-38	0954	0.0	—	1.20	11.51	
MW-37	0955	0.0	—	3.16	18.03	
SW-08	1007	Remember to take photo				WL = 1.06
SW-10	1023	Remember to take photo				WL = 0.65
SW-02	1044	Remember to take photo				WL = 1.72
MW-24	1047	0.0	—	3.77	15.50	
MW-24B	1045	0.0	—	4.78	42.49	
SW-01	1048	Remember to take photo				WL = 1.32

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-43	1051	0.0	—	3.47	10.30	
MW-43B	1052	0.0	—	2.19	56.55	
MW-13	0946	669	—	22.10	22.15	DRY
MW-13B	0945	691.0	—	24.25	55.05	
MW-14	0952	0.0	—	17.79	22.22	
MW-14B	0950	5.1	—	19.62	85.34	
MW-50B	0933	0.0	—	23.67	102.20	
MW-48B	0937	0.0	—	17.91	74.07	
MW-33T	0931	0.0	—	28.15	99.89	
MW-31	0927	0.0	—	22.17	28.03	
MW-47	0925	0.0	—	19.41	22.86	
MW-10	0908	0.0	—	16.77	23.21	WELL PAD LOOSE
MW-32	0907	0.0	—	15.56	28.85	AIR SPARGING ON
MW-03	0905	0.0	—	7.8	20.28	AIR SPARGING ON / WELL CAP BLOWN OFF
MW-30	0900	1.7	—	14.66	14.70	DRY
MW-04	0857	0.0	—	13.57	19.56	
MW-05	0855	0.2	—	17.70	19.90	
MW-02	0911	0.0	—	0.0	20.58	SPARGING OUT OF WELL CASING
MW-02B	0910	0.0	—	10.72	81.72	
MW-09	0917	0.0	—	0.0	20.21	~~AIR~~ WATER SPARGING OUT OF WELL
MW-09B	0915	0.0	—	11.31	151.00	
MW-06	0850	265.3	—	14.89	19.39	
MW-06B	0848	3.8	—	14.90	85.61	
MW-07	0820	350.7	—	13.63	13.63 ~~14.34~~	MUD AT BOTTOM OF WELL.
MW-16	0845	75.0	—	10.2	20.58	SPARGE SYSTEM ON
MW-18	0830	610.1	—	19.24	20.11	SPARGE SYSTEM ON
MW-08	0840	0.6	—	5.49	19.84	⊕ BALL FOR PRODUCT ⊕ → NP
MW-36	1321	12.6	—	19.83	23.84	
MW-36B	1318	0.0	—	19.27	42.81	

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
Skimmers	--	--	--	--	--	--
RS-14	1323	629.0	2.72	2.74	19.04	ALL WATER
RW-10	1336	32.6	—	13.76	57.46	ALL WATER
RS-05	1351	741.8	11.32	11.34	24.97	ALL WATER WITH SOME SHEEN
RS-01	1358	316.0	11.73	11.76	22.46	ALL WATER
RS-02	1407	510.7	—	9.82	19.38	ALL WATER
RW-15	1414	677.2	14.23	14.24	38.67	DRY
RW-02	1432	579.0	24.59	24.65	26.50	ALL WATER
RW-03	1442	565	24.78	24.84	33.81	0.25 OZ PRODUCT RECOVERED
RW-04	1454	209.8	31.46	31.57	38.65	0.50 OZ PRODUCT RECOVERED
RW-05	1500	1708	—	33.84	37.53	0.10 OZ PRODUCT RECOVERED
RW-07	1505	844.6	23.19	23.35	42.78	2.0 OZ PRODUCT RECOVERED

Wells with recent product detections

Low Flow Locations

GeoProbe Pump

BTOC - below top of casing

ft - feet

PN - Project Number

[1]Total depths collected 4/5/18

WL - Water Level

ppm - parts per million

SM - Site Manager

Prod. Rec = Product Recovered

SW##-122019

Table 2 - Gauging Sheet

SM: Tom Wiley Client: Plantation Pipe Line Weather:

PN: D3159800/D2161400

Project: Monthly Monitoring Measuring Method: YSI

Technicians: AD, CS Date: 12/20/19

Remember to take photos at all surface water locations

Sample Location	Time	pH	Turbidity	Cond.	Temp.	DO	ORP	Hydrogen Peroxide	Persulfate	Ferrous Iron	Comments
SW-01	1350	5.53	6.82	0.060	9.1	4.19	105.6	0	0	0.25	
SW-02	1320	6.22	22.25	0.055	7.0	8.26	126.4	0	0	0	
SW-03	1425	-	-	-	-	-	-	—	—	—	
SW-04	1305	5.97	15.70	0.060	7.4	7.18	104.0	0	0	0	
SW-05											Dry
SW-07	1355	-	-	-	-	-	-	—	—	—	
SW-08	1053	-	-	-	-	-	-	—	—	—	
SW-09	1045	-	-	-	-	-	-	—	—	—	
SW-10	1017	-	-	-	-	-	-	—	—	—	
SW-11	1000	-	-	-	-	-	-	—	—	—	
SW-12	1415	6.09	42.09	0.050	6.8	8.77	148.5	0	0	0	
SW-13	1105	6.69	18.45	~~3.844~~ 0.119	3.8	6.95	133.1	0	0	1.75	
SW-14	1453	6.14	28.85	0.069	6.20	10.51	155.7	0	0	0	

Table 2 - Gauging Sheet

SM: Tom Wiley
PN: KMLDOM20
Project: Monthly Monitoring
Technicians: TH, CS, MW

Client: Plantation Pipe Line
Weather: MORNING RAIN, HIGH 60'S
Measuring Method: Oil/Water Interface Probe
Date: 02/11/20

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-20	0800	972.4	—	6.65	19.40	UNDER PRESSURE (UP)
MW-26	0812	0.6	—	1.37	17.12	
MW-23	0817	0.1	—	5.08	23.21	
MW-46	0820	0.2	—	4.15	17.08	
MW-56	0823	4.9	—	3.61	17.60	UNDER PRESSURE
MW-57	0828	0.2	—	4.76	13.90	UP
MW-45	0833	0.0	—	9.41	14.45	--
MW-17B	0837	521	—	11.35	27.42	
MW-11	0956	3235	—	27.30	32.40	SLIGHT PRESSURE
MW-12B	0950	2.9	—	8.93	44.31	
MW-41	0945	0	—	3.39	13.19	
MW-40	0939	7.3	—	2.11	13.15	has TROLL
MW-39	0934	0.1	—	3.69	13.03	has TROLL
MW-34	0928	6.2	—	2.65	7.82	
MW-15B	0924	18.3	—	13.55	80.90	
MW-38	0924	0	—	0.6	11.51	
MW-37	0922	3.2	—	2.76	18.03	
MW-13B	0909	0132	—	26.20	55.05	--
MW-51	0912	0	—	16.14	25.38	
MW-52	0917	0	—	15.11	32.93	
MW-50B	0905	0.1	—	18.82	102.20	--
MW-54	0850	0.2	—	9.60	25.55	SLIGHT PRESSURE
MW-53	0855	0.2	—	5.18	21.12	SLIGHT PRESSURE
MW-07	0841	1257	—	9.31	14.34	
MW-36	1024	11.1	—	15.35	23.84	UP
MW-55	1016	0.3	—	16.31	25.20	UP

Low Flow Locations
Deploy Hydrasleeve while Gauging
GeoProbe Pump

BTOC - below top of casing
ft - feet
PN - Project Number

[1]Total depths collected 4/5/18

WL - Water Level

ppm - parts per million
SM - Site Manager
Prod. Rec = Product Recovered

Table 2 - Gauging Sheet

SM: Tom Wiley
PN: KMLDOM20
Project: Monthly Monitoring
Technicians: MW, TH, CS, AF

Client: Plantation Pipe Line
Weather: MID 50'S – MID 60'S / PARTLY CLOUDY
Measuring Method: Oil/Water Interface Probe
Date: 03/09/20

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-29	1533	0.0	—	1.39	14.85	has TROLL
MW-19	0821	262.4	—	4.92	12.20	SPARGING OBSERVED
RW-11	0829	440.6	—	8.69	19.34	UNDER HIGH PRESSURE
RW-12	—	—	—	—	—	NOT GAUGED DUE TO SAFETY HAZARD
RS-08	0841	42.5	—	7.69	19.65	SLIGHT PRODUCT DETECTION - BAIL TO CONFIRM
MW-20	0848	500.0	—	8.13	19.46	UNDER PRESSURE
RS-07	0851	1902	—	7.47	15.85	-
RT-1A	0858	455.7	—	8.62	18.88	
RT-1B	0904	414.0	—	7.47	18.05	
RT-1C	0910	509.7	—	7.41	19.10	
MW-26B	1014	0.0	—	1.50	44.3	
MW-26A	1018	0.0	—	1.15	17.05	
MW-23	1008	0.0	—	4.54	23.03	
MW-23B	1002	0.0	—	8.32	60.16	
SW-05	1227	Remember to take photo			—	WL = 0.35'
MW-46	0941	0.1	—	3.83	17.14	
MW-56	0949	2.7	—	3.20	17.43	
MW-57	0954	1.9	—	4.66	17.35	
MW-45	0936	0.0	—	7.74	14.40	
MW-45B	0930	0.0	—	11.35	40.94	
MW-21	1232	0.0	—	10.58	20.55	
MW-17	1030	73.3	—	8.85	11.35	
MW-17B	1024	936.7	—	9.63	27.69	
MW-22	1822	6.6	—	4.95	10.30	
VBS-02	1816	0.0	—	12.45	30.95	WATER TABLE ABOVE WELL
VBS-03	1813	1.1	—	8.00	35.85	
MW-44	1530	0.0	—	2.20	9.80	
MW-44B	1527	0.0	—	7.34	35.85	

Table 2 - Gauging Sheet

SM: Tom Wiley
PN: KMLDOM20
Project: Monthly Monitoring
Technicians: T. HALL, M. WARREN, A. FORNESS, C. SUTTON

Client: Plantation Pipe Line
Weather: SUNNY 40° / 67°F
Measuring Method: Oil/Water Interface Probe
Date: 3-9-20

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-01	0950	11.2		3.25	15.65	has Baro TROLL
MW-01B	0952	0.0		4.66	44.00	
RW-01	0938	157.0		8.27	21.42	
MW-27	1221	3.3		19.90	30.10	
MW-27B	0958	0.0		27.80	42.60	
MW-11	0943	399.9		26.62	32.03	WELL PRESSURIZED
RW-06	1007	65.0		21.94	40.25	
RW-08	1014	576.2		12.33	35.50	
RW-09	1017	331.0		9.09	36.75	
MW-12	1021	0.0		9.22	21.25	has TROLL
MW-12B	1025	2.7		8.31	48.05	
MW-28	1030	0.6		17.70	28.10	
MW-49	1033	0.0		12.05	23.35	
MW-35	1043	0.0		7.16	28.15	
SW-03	1239	Remember to take photo			—	WL = 0.65 GROUND .60 ON STAFF GAUGE
MW-25	1229	0.0		6.00	17.95	has TROLL
MW-25B	1232	0.0		2.45	63.10	
MW-42	1236	0.0		4.13	13.40	
MW-41	1241	0.0		3.51	13.50	
MW-40	1246	3.8		2.31	13.21	has TROLL
RW-14	1251	0.4		0.0	—	STRONG SPARGE BRINGS WATER TO TOC.
MW-39	1254	0.0		4.40	13.07	has TROLL
MW-34	1258	0.0		2.55	7.82	
MW-15	1306	0.0		7.96	13.75	SOFT BOTTOM
MW-15B	1301	53.6		13.64	78.40	
MW-38	13.39	1.5		1.02	11.49	
MW-37	1335	0.0		3.14	18.15	
SW-08	1319	Remember to take photo			—	WL = 0.84

Table 2 - Gauging Sheet

SM: Tom Wiley
PN: KMLDOM20
Project: Monthly Monitoring
Technicians: MW, TH, CS, AF

Client: Plantation Pipe Line
Weather: MID 50'S – 60'S / PARTLY CLOUDY
Measuring Method: Oil/Water Interface Probe
Date: 03/09/20

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
SW-10	1404	Remember to take photo			—	WL = 0.40
SW-02	1333	Remember to take photo			—	WL = 1.67
MW-24	1318	0.0	—	4.70	15.33	
MW-24B	1313	0.0	—	5.36	44.28	
SW-01	1315	Remember to take photo			—	WL = 0.2
MW-43	1321	0.0	—	4.22	10.35	
MW-43B	1324	0.0	—	2.66	56.40	
MW-13	1454	367.0	—	17.63	22.20	
MW-13B	1448	405.7	—	18.81	58.30	
MW-14	1439	0.0	—	11.16	22.54	
MW-14B	1442	0.0	—	12.84	74.55	
MW-50B	1611	0.0	—	18.36	110.65	
MW-48B	1428	0.0	—	14.84	98.28	
MW-33T	1604	0.0	—	23.73	100.00	
MW-31	1556	0.0	—	16.32	28.38	
MW-47	1550	0.0	—	12.55	22.85	
MW-10	1415	0.0	—	6.13	23.35	has Baro TROLL
MW-32	1409	0.0	—	11.29	28.49	UNDER PRESSURE
MW-03	1356	0.0	—	4.67	20.25	UNDER HIGH PRESSURE / WATER IN VAULT
MW-30	1342	0.0	—	8.71	14.68	
RS-20	1523	0.0	—	3.53	10.43	-
MW-04	1318	0.0	—	4.74	19.82	
MW-05	1300	0.0	—	16.65	19.82	
MW-02	1329	0.0	—	1.59	17.40	has TROLL SPARGING NEAR TOP OF CASING
MW-02B	1334	0.0	—	9.90	82.10	UNDER PRESSURE / MISSING A BOLT
MW-09	1433	0.0	—	2.70	19.82	WATER SPARGING TO TOC.
MW-09B	1428	0.0	—	3.75	152.0	
MW-06	1252	146.2	—	7.05	19.25	ONE BOLT MISSING

Table 2 - Gauging Sheet

SM: Tom Wiley
PN: KMLDOM20
Project: Monthly Monitoring
Technicians: MW, AF, TH, CS

Client: Plantation Pipe Line
Weather: 50's - 60's / PARTLY CLOUDY
Measuring Method: Oil/Water Interface Probe
Date: 03/09/20

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
MW-06B	1245	0.2	—	7.20	68.15	WATER IN VAULT / REPLACE WELL CAP
MW-07	1035	111.2	—	7.03	13.57	WATER IN VAULT
RS-04	1636	1.8	—	4.39	10.10	-
RS-06	1643	7.1	—	5.45	22.20	-
MW-16	1531	13.7	—	2.35	20.09	PRESSURE
RS-12	1649	0.0	—	5.00	20.18	-
RS-11	1652	0.0	—	4.62	15.48	-
RS-09	1703	5.7	—	6.02	16.00	-
RS-18	1658	3.1	—	5.12	18.68	-
MW-18	1523	390.1	—	4.70	19.31	RAINWATER IN CASING / MISSING BOLTS / PRESSURE
MW-08	1513	0.0	—	8.15	17.00	UNDER PRESSURE
RS-13	1708	0.0	—	1.92	17.15	-
RS-15	1712	0.0	—	—	—	CASING DAMAGED
RS-16	1718	0.0	—	2.75	18.35	GROUND AROUND - WELL IS ERODING
MW-36	1741	0.4	—	13.25	23.84	
MW-36B	1747	0.0	—	12.95	55.90	STICK FLOATING IN WATER

Table 2 - Gauging Sheet

SM: Tom Wiley
PN: KMLDOM20
Project: Monthly Monitoring
Technicians: TH, MW, AF, CS

Client: Plantation Pipe Line
Weather:
Measuring Method: Oil/Water Interface Probe
Date: 03/09/20

Sample Location	Time	PID Reading (ppm)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Total Depth[1] (ft BTOC)	Comments (i.e. lid bolted down, missing bolts, condition of cap, replace cap, vault bolted down, water in vault, smell, etc.)
Skimmers	-	-	-	-	-	-
RS-17	1602	111.0	—	2.15	19.05	ALL WATER -
RS-14	1614	391.0	—	2.26	19.12	SHEEN W/ POSSIBLE PRODUCT DETECT (OZ=0.2)
RS-10	1638	80.9	—	5.44	20.04	ALL WATER -
RW-10	1700	170	—	8.33	56.20	ALL WATER - BUILDUP ON CANISTER
RS-05	1710	1727	5.91	5.94	25.00	ALL WATER
RS-01	1728	579	5.25	5.27	22.48	ALL WATER
RS-02	1731	38.5	—	3.51	19.40	ALL WATER
RW-15	1749	762.3	—	7.91	38.80	ALL WATER
RW-02	0820	—	20.31	2.33	—	GAUGED ON 3/10/20 - ALL WATER
RW-03	1821	1245	21.08	21.09	35.20	ALL WATER
RW-04	0720	—	25.45	25.49	—	GAUGED ON 3/10/20 - ALL WATER
RW-05	0725	—	— HAZARD - DID NOT OPEN			~~GAUGED ON 3/10/20 - ALL WATER~~
RW-07	0740	—	18.77	18.78	—	GAUGED ON 3/10/20 - ALL WATER

Wells with recent product detections
Low Flow Locations
GeoProbe Pump

BTOC - below top of casing
ft - feet
PN - Project Number

[1]Total depths collected 4/5/18

WL - Water Level

ppm - parts per million
SM - Site Manager
Prod. Rec = Product Recovered

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW - 55

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 4/9/19
Well Number: MW - 55
Field Crew: JM & TH
Well Depth (ft): 25.20
DTW (ft): 13.15
Water Column (ft): 12.05
Remarks: SAMPLE SLIGHTLY TURBID, NO ODOR

MW-55-040919

SAMPLING INFORMATION:

Depth sample was acquired: 20.0
Sample Date/Time: 04-09-19 / @ 1120
Signed Sampler: T. HALL, J. MORGAN
Sample Observations: SAMPLE SLIGHTLY TURBID, NO ODOR
Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW - 56

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 4/9/19
Well Number: MW - 56
Field Crew: JM & TH
Well Depth (ft): 17.60
DTW (ft): 3.27
Water Column (ft): 14.33
Remarks: SAMPLE CLEAR, NO ODOR

MW-56-040919

SAMPLING INFORMATION:

Depth sample was acquired: 11.0
Sample Date/Time: 04/09/19 @ 1145
Signed Sampler: T. HALL, J. MORGAN
Sample Observations: CLEAR NO ODOR
Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW - 57

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 4/9/19
Well Number: MW-57
Field Crew: JM + TH
Well Depth (ft): 13.80
DTW (ft): 4.78
Water Column (ft): 9.02
Remarks: SAMPLE CLEAR, NO ODOR
FD COLLECTED @ 1205

MW-57-040919

SAMPLING INFORMATION:

Depth sample was acquired: 8.00
Sample Date/Time: 04.09-19 / @ 1200
Signed Sampler:
Sample Observations: CLEAR, NO ODOR
Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

Attachment B

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-53

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 5-15-19	Well Depth (ft): 21.12
Well Number: MW-53	DTW (ft): 5.84
Field Crew: TH, JM, AD	Water Column (ft): 15.28

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	17.00'
Sample Date/Time:	05-15-19/0930
Signed Sampler:	T. HALL
Sample Observations:	CLEAR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-54

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 5-15-19	Well Depth (ft): 25.55
Well Number: MW-54	DTW (ft): 8.12
Field Crew: TH, JM, AD	Water Column (ft): 17.43

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	15.00'
Sample Date/Time:	5-15-19/0920
Signed Sampler:	T. HALL
Sample Observations:	CLEAR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-07

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 5-15-19	Well Depth (ft): 14.34
Well Number: MW-07	DTW (ft): 6.90
Field Crew: TH, JM, AD	Water Column (ft): 7.44

Remarks: SLIGHT SHEEN DETECTED IN VOAS.

SAMPLING INFORMATION:

Depth sample was acquired:	8.00'
Sample Date/Time:	5-15-19/0945
Signed Sampler:	T. HALL
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-55

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 5-15-19	Well Depth (ft): 25.20
Well Number: MW-55	DTW (ft): 14.60
Field Crew: TH, JM, AD	Water Column (ft): 10.60
Remarks: 10-25.5	

SAMPLING INFORMATION:

Depth sample was acquired: 17.00'				
Sample Date/Time: 5-15-19/1010				
Signed Sampler: T.HALL				
Sample Observations: TURBID				
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-36

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 5-15-19	Well Depth (ft): 23.84
Well Number: MW-36	DTW (ft): 13.86
Field Crew: TH, JM	Water Column (ft): 9.98
Remarks: DUP	

SAMPLING INFORMATION:

Depth sample was acquired: 19.00'				
Sample Date/Time: 5-15-19/1020	DUP TIME: 1025			
Signed Sampler: THALL				
Sample Observations: FLOCCULANT PRESENT				
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-20

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 5-15-19	Well Depth (ft): 19.04
Well Number: MW-20	DTW (ft): 7.08
Field Crew: TH, JM, AD	Water Column (ft): 11.96
Remarks: NO PRODUCT DETECTED WHEN BAILED. SHEEN ON TOP OF VOAS WHEN COLLECTED. DILUTE SAMPLE.	

SAMPLING INFORMATION:

Depth sample was acquired: 11.00'				
Sample Date/Time: 05-15-19/1105				
Signed Sampler: T.HALL				
Sample Observations: CLEAR - STRONG ODOR				
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-23

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 5-15-19	Well Depth (ft): [redacted]
Well Number: MW-23	DTW (ft): [redacted]
Field Crew: TH, AD, JM	Water Column (ft):

Remarks:

TYPHOON

SAMPLING INFORMATION:

Depth sample was acquired:				
Sample Date/Time: 5-15-19/				
Signed Sampler: THALL				
Sample Observations:				
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-26

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 5-15-19	Well Depth (ft): 17.12
Well Number: MW-26	DTW (ft): 2.07
Field Crew: T.HALL, AD, JM	Water Column (ft): 15.05

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	10.00'			
Sample Date/Time: 5-15-19/	1140			
Signed Sampler: T. HALL				
Sample Observations: CLEAR				
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-46

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 5-15-19	Well Depth (ft):
Well Number: MW-46	DTW (ft):
Field Crew: TH, AD, JM	Water Column (ft):

Remarks:

TYPHOON

SAMPLING INFORMATION:

Depth sample was acquired:				
Sample Date/Time: 5-15-19/				
Signed Sampler: T. HALL				
Sample Observations:				
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-56

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 5-15-19	Well Depth (ft): 17.60
Well Number: MW-56	DTW (ft): 4.02
Field Crew: TH, JM, AD	Water Column (ft): 13.58

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired: 11.00'
Sample Date/Time: 5-15-19/1120
Signed Sampler: T. HALL
Sample Observations: CLEAR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-57

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 5-15-19	Well Depth (ft): 17.31
Well Number: MW-57	DTW (ft): 5.67
Field Crew: TH, JM, AD	Water Column (ft): 11.64

Remarks:
DUP TIME - 1130

SAMPLING INFORMATION:

Depth sample was acquired: 10.00'
Sample Date/Time: 5-15-19/1125
Signed Sampler: T. HALL
Sample Observations: CLEAR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-51

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 5-15-19	Well Depth (ft): 25.38
Well Number: MW-51	DTW (ft): 17.29
Field Crew: TH, JM, AD	Water Column (ft): 8.09

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired: 20.00'
Sample Date/Time: 05-15-19/1400
Signed Sampler: T. HALL
Sample Observations: CLEAR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-52

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 5-15-19	Well Depth (ft): 32.93
Well Number: MW-52	DTW (ft): 15.46
Field Crew: TH, JM, AD	Water Column (ft): 17.47
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired:	21.00'
Sample Date/Time:	5-15-19 / 1410
Signed Sampler:	T. HAM
Sample Observations:	CLEAR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-15B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 5-15-19	Well Depth (ft): 80.40
Well Number: MW-15B	DTW (ft): 13.42
Field Crew: TH, JM, AD	Water Column (ft): 67.48
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired:	75.0 FT
Sample Date/Time:	05/15/19 @ 1425
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-37

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 5-15-19	Well Depth (ft): 18.03
Well Number: MW-37	DTW (ft): 3.10
Field Crew: TH, JM, AD	Water Column (ft): 14.93
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired:	10.00'
Sample Date/Time:	5-15-19 / 1520
Signed Sampler:	T. HAM
Sample Observations:	CLEAR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-38

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 5-15-19	Well Depth (ft): 11.51
Well Number: MW-38	DTW (ft): 1.12
Field Crew: TH, JM, AD	Water Column (ft): 10.39

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	7.00'
Sample Date/Time:	5-15-19 / 1530
Signed Sampler:	T. HAN
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-39

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 5-15-19	Well Depth (ft): 13.03
Well Number: MW-39	DTW (ft): 4.07
Field Crew: TH, JM, AD	Water Column (ft): 8.96

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	8.00'
Sample Date/Time:	5-15-19 / 1440
Signed Sampler:	T. HAN
Sample Observations:	CLEAR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-41

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 5-15-19	Well Depth (ft): 13.19
Well Number: MW-41	DTW (ft): 3.28
Field Crew: TH, JM, AD	Water Column (ft): 9.91

Remarks:

DUP TIME @ 1500

SAMPLING INFORMATION:

Depth sample was acquired:	10.00'
Sample Date/Time:	5-15-19 / 1455
Signed Sampler:	T. HAN
Sample Observations:	CLEAR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D316140O

WELL NUMBER MW-17B

SHEET OF

LOW FLOW SAMPLING LOG

Well Number: MW-17B
Field Crew: TM, TM, AD
Well Depth (ft): 27.42
DTW (ft): 9.59
Water Column (ft): 17.83
Well Diameter (in): 6
Gal. Per ft: 1.469
Well volume (gal): 26.19

Purge Methodology: low flow

Site: LEWIS DRIVE
Date: 5-14-19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number:
Pump type (please circle): TYPHOON Peristaltic Bladder
Pump serial number:

Depth of Screen (ft):
PID reading: opening well 288.6 after venting, if initially high middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wq	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0946	10.65	3	4	5.98	18.3	.205	8.60	0.22	25.1	CLEAR/SLIGHT ODOR
0945	10.81	3	8	5.89	18.4	.189	11.6	0.16	16.4	CLEAR/SLIGHT ODOR
0950	10.93	3	12	5.86	18.4	.178	13.0	0.13	13.6	"
PASS	10.98	3	16	5.84	18.4	.175	13.4	0.13	9.2	"
1000	11.00	3	20	5.83	18.4	.169	14.6	0.12	7.8	"
1005	11.02	3	24	5.81	18.5	.165	15.2	0.12	5.9	"
1010	11.03	3	28	5.79	18.5	.163	16.2	0.12	4.9	"

Remarks: 5 WELL VOLUMES [35.90 GALLONS. PUMPED 1 WELL VOLUME AND COLLECTED SAMPLE

SAMPLING INFORMATION:

Depth to Water Before Sampling: 9.60
Depth sample was acquired: 24.00
Sample Methodology: TYPHOON
Sample Date/Time: 5-14-19/1015
Signed Sampler: T. HALL
Filtered Metals Collected: Y / (N) Filter Size: —
Sample Observations: CLEAR/SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D7161400

WELL NUMBER MW-23

SHEET OF

LOW FLOW SAMPLING LOG

Well Number: MW-23
Field Crew: TH, JM, AD
Well Depth (ft): 23.15
DTW (ft): 5.37
Water Column (ft): 17.78
Well Diameter (in): 2
Gal. Per ft: .163
Well volume (gal): 2.90
Depth of Screen (ft):

Purge
Methodology: low flow

Site: LEWIS DRIVE
Date:

Diameter	Gal. Per Foot
2"	0.163
3"	0.367
4"	0.653
5"	1.02
6"	1.469
8"	2.611

Water level indicator, serial number:
Pump type (please circle): Peristaltic Bladder
Pump serial number:

PID reading: opening well; after venting, if initially high; middle of sampling; closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
Stabilization									120	TURBID/ODOR
1210	6.03	3	8	4.95	15.7	0.086	160.7	0.26	65	
1215	6.05	3	12	4.96	15.7	0.084	162.6	0.24	39.3	
1220	6.05	3	16	4.96	15.7	0.083	164.6	0.23		

Remarks:

SAMPLING INFORMATION:

Depth to Water Before Sampling: 5.37
Depth sample was acquired: 17.00'
Sample Methodology: TYPHOON
Sample Date/Time: 5/14/19 @ 1230 DUP COLLECTED @ 1235
Signed Sampler:
Filtered Metals Collected: Y / N Filter Size:
Sample Observations: CLEAR/SLIGHT ODOR
Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400

WELL NUMBER MW-46

SHEET OF

LOW FLOW SAMPLING LOG

Well Number: MW-46
Field Crew: A. Reynolds, J. Morgan, T. Hall
Well Depth (ft): 17.08
DTW (ft): 4.98
Water Column (ft): 12.1
Well Diameter (in): 2
Gal. Per ft: .163
Well volume (gal): 1.97
Depth of Screen (ft):
PID reading:

Purge Methodology: low flow

Site: Lewis River
Date: 5/14/14

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number:
Pump type (please circle) Peristaltic Bladder
Pump serial number:

opening well | after venting, if initially high | middle of sampling | closing well

Field Parameters

Time	DTW (toc)	~~Flow Rate~~ (mL/min) LITERS PER MIN	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. (Surface) (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1110	8.00	6	3	7	15.2	0.035	127.2	0.28	7.2	CLEAR/NO ODOR
1115	8.35	6	6	5.04	15.2	0.035	136.1	0.19	4.2	"
1120	8.41	6	9	5.05	15.2	0.036	139.3	0.18	3.6	"

Remarks:

SAMPLING INFORMATION:

Depth to Water Before Sampling: 4.98
Depth sample was acquired: 14.06
Sample Methodology: TYPHOON
Sample Date/Time: 05-14-14 / 1125
Signed Sampler: T. HALL
Filtered Metals Collected: Y / N
Filter Size:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER	WELL NUMBER MW-40
	SHEET OF

LOW FLOW SAMPLING LOG

Well Number: MW-40	Site:		
Field Crew: TH, JM, AD	Date:		
Well Depth (ft): 13.18	Purge	Diameter	Gal. Per Foot
DTW (ft): 1.85	Methodology: low flow	2"	0.163
Water Column (ft): 11.33		3"	0.367
Well Diameter (in): 2		4"	0.653
Gal. Per ft: .163		5"	1.02
Well volume (gal): 1.85		6"	1.469
Depth of Screen (ft):		8"	2.611

Water level indicator, serial number:

Pump type (please circle): Peristaltic Bladder

Pump serial number:

PID reading: opening well after venting, if initially high middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate ~~(ml/min)~~	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	L/min ~~100-500~~	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1540	6.18	2	3	5.40	16.8	.033	123.2	3.68	4.5	CLEAR / SLIGHT ODOR
1555	9.90	~~4~~ 3	9	5.36	16.5	0.038	132.1	2.70	3.4	CLEAR

Remarks:

SAMPLING INFORMATION:

Depth to Water Before Sampling: Depth sample was acquired:

Sample Methodology:

Sample Date/Time:

Signed Sampler:

Filtered Metals Collected: Y / N Filter Size:

Sample Observations:

Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER 03161400

WELL NUMBER MW-34

SHEET OF

LOW FLOW SAMPLING LOG

Well Number: MW-34
Field Crew: TH, AD, JM
Well Depth (ft): 7.52
DTW (ft): 2.63
Water Column (ft): 4.89
Well Diameter (in): 2
Gal. Per ft: .163
Well volume (gal): .80
Depth of Screen (ft):

Purge
Methodology: low flow

Site: LEWIS DRIVE
Date: 5-14-19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number:
Pump type (please circle): Peristaltic Bladder
Pump serial number:

PID reading: opening well | after venting, if initially high | middle of sampling | closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA

Remarks:
* BEGAN PUMPING @ 1435. WELL DRY AFTER PUMPING LESS THAN ½ GALLON
WELL NOT RECHARGING * SAMPLE TO BE COLLECTED WITH BAILER

SAMPLING INFORMATION:

Depth to Water Before Sampling: 2.63
Depth sample was acquired:
Sample Methodology: TYPHOON
Sample Date/Time:
Signed Sampler: T. HAM
Filtered Metals Collected: Y (N)
Filter Size:
Sample Observations:
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(1)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-44

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC		
Date: 06/04/19	Well Depth (ft):	9.76
Well Number: MW-44	DTW (ft):	6.89
Field Crew: MW, TH	Water Column (ft):	2.87
Remarks: CLEAR, NO ODOR		

SAMPLING INFORMATION:

Depth sample was acquired:	8 Ft
Sample Date/Time:	06/04/19 @ 0905
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-44B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC		
Date: 06/04/19	Well Depth (ft):	34.54
Well Number: MW-44B	DTW (ft):	8.57
Field Crew: MW, TH	Water Column (ft):	35.97
Remarks: CLEAR / NO ODOR		

SAMPLING INFORMATION:

Depth sample was acquired:	26 Ft
Sample Date/Time:	06/04/19 @ 0920
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-08

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC		
Date: 06/04/19	Well Depth (ft):	19.84
Well Number: MW-08	DTW (ft):	9.15
Field Crew: MW, TH	Water Column (ft):	
Remarks: CLEAR, NO ODOR		

SAMPLING INFORMATION:

Depth sample was acquired:	12.50
Sample Date/Time:	~~12~~ 06/04/19 @
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

(2)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-18

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 6-4-19	Well Depth (ft): 20
Well Number: MW-18	DTW (ft): 14.70
Field Crew: TH, MW, AD, JM	Water Column (ft): 5.30

Remarks:

ODOR / CLEAR / SHEEN

SAMPLING INFORMATION:

Depth sample was acquired:	10.00
Sample Date/Time:	6-4-19 / 1020
Signed Sampler:	
Sample Observations:	SHEEN
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-16

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 6-4-19	Well Depth (ft): 20.00
Well Number: MW-16	DTW (ft): 5.50
Field Crew: TH, MW, AD, JM	Water Column (ft): 14.50

Remarks:

SHEEN / ODOR / CLEAR

SAMPLING INFORMATION:

Depth sample was acquired:	16
Sample Date/Time:	06/04/19 @ 1030
Signed Sampler:	
Sample Observations:	SHEEN
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-07

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 6-4-19	Well Depth (ft): ~~20.00~~ 13.50
Well Number: MW-07	DTW (ft): ~~5.50~~ 7.99
Field Crew: TH, MW, AD, JM	Water Column (ft): ~~14.50~~ 5.49

Remarks:

STRONG ODOR / CLEAR

SAMPLING INFORMATION:

Depth sample was acquired:	10.00
Sample Date/Time:	6-4-19 / 1045
Signed Sampler:	
Sample Observations:	STRONG ODOR / CLEAR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-06B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/04/19	Well Depth (ft):	85.61
Well Number: MW-06B	DTW (ft):	8.55
Field Crew: MW, TH	Water Column (ft):	77.06

Remarks:

CLEAR / NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired:	~~60~~ 75 ft
Sample Date/Time:	~~75 ft~~ 06/04/19 @ 1055
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-06

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/04/19	Well Depth (ft):	19.39
Well Number: MW-06	DTW (ft):	8.84
Field Crew: MW, TH	Water Column (ft):	10.55

Remarks:

CLEAR / NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired:	12.30
Sample Date/Time:	06/04/19 @ 1105
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-09B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/04/19	Well Depth (ft):	~~20.11~~	151.00
Well Number: MW-09	DTW (ft):	~~8.08~~	5.22
Field Crew: MW, TH	Water Column (ft):	~~12.03~~	145.78

Remarks:

ORANGE FLOC / NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired:	~~120 ft~~ 141 ft
Sample Date/Time:	06/04/19
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

(4)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-09

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/04/19	Well Depth (ft): 20.21
Well Number: MW-09	DTW (ft): 8.08
Field Crew: MW, TH	Water Column (ft): 12.13

Remarks:

CLEAR / NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired: ~~06/04/19~~ 12 ft

Sample Date/Time: 06/04/19 @ 1310

Signed Sampler:

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-02B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/04/19	Well Depth (ft): 81.72
Well Number: MW-02B	DTW (ft): 5.48
Field Crew: MW, TH	Water Column (ft):

Remarks:

CLEAR / NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired: ~~0~~ 75

Sample Date/Time: 06/04/19 @ 1355

Signed Sampler:

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-02

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/04/19	Well Depth (ft): 20.58
Well Number: MW-02	DTW (ft): 3.20
Field Crew: MW, TH	Water Column (ft): 17.38

Remarks:

SLIGHTLY TURBID / NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired: 12.50

Sample Date/Time: 06/04/19 @ 1325

Signed Sampler:

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(5)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-05

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 6-4-19	Well Depth (ft): 20.00
Well Number: MW-05	DTW (ft): 10.64
Field Crew: MW, TH	Water Column (ft): 9.36

Remarks:

CLEAR, NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired: 15.00

Sample Date/Time: 6-4-19 / @ 1405

Signed Sampler: [signature]

Sample Observations: TH, MW

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-04

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 6-4-19	Well Depth (ft): 20.00
Well Number: MW-04	DTW (ft): 7.17
Field Crew: MW, TH	Water Column (ft): 12.83

Remarks:

SLIGHTLY TURBID, NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired: 12.50

Sample Date/Time: 6-4-19 / @ 1420

Signed Sampler: [signature]

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-30

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 6-4-19	Well Depth (ft): 15.30
Well Number: MW-30	DTW (ft): 10.64
Field Crew: TH, MW	Water Column (ft): 4.36

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired: 10.00

Sample Date/Time: 6-4-19 / ~~1430~~ 1500

Signed Sampler: [signature]

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(6)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-03

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/04/19	Well Depth (ft): 20.28
Well Number: MW-03	DTW (ft): 7.0
Field Crew: MW, TH	Water Column (ft): 13.28

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired: 12.50

Sample Date/Time: 06/04/19 @ 1515

Signed Sampler:

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-32

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/04/19	Well Depth (ft): 28.85
Well Number: MW-32	DTW (ft): 13.55
Field Crew: MW, TH	Water Column (ft): 15.30

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired: 17.00 ft

Sample Date/Time: 06/04/19 @ 1525

Signed Sampler:

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-10

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/04/19	Well Depth (ft): 23.21
Well Number: MW-10	DTW (ft): 11.56
Field Crew: MW, TH	Water Column (ft): 11.65

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired: 12.5

Sample Date/Time: 06/04/19 @ 1540

Signed Sampler:

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-36

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 06/04/19	Well Depth (ft): 23.84
Well Number: MW-36	DTW (ft): 14.87
Field Crew: MW, TH	Water Column (ft): 8.97
Remarks: MW-36-060419 MW-36-D-060419	

SAMPLING INFORMATION:

Depth sample was acquired:	20 ft
Sample Date/Time:	06/04/19 @ 1600 / DUP @ 1601
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-36B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC		
Date: 06/04/19	Well Depth (ft): ~~23.84~~	42.81
Well Number: MW-36B	DTW (ft): ~~14~~	13.56
Field Crew: MW, TH	Water Column (ft):	29.25
Remarks:		

SAMPLING INFORMATION:

Depth sample was acquired:	~~20 ft~~
Sample Date/Time:	06/04/19 @ 1610
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date:	Well Depth (ft):
Well Number:	DTW (ft):
Field Crew:	Water Column (ft):
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

(1)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-29

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 14.95
Well Number: MW-29	DTW (ft): 6.33
Field Crew: AD, JM, TH, MW	Water Column (ft): 8.62

Remarks:

TURBID, NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired: 14 ft

Sample Date/Time: 06/05/19 @ 0815

Signed Sampler:

Sample Observations: TURBID, NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-19

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 12.15
Well Number: MW-19	DTW (ft): 8.30
Field Crew: AD, JM, TH, MW	Water Column (ft): 3.85

Remarks:

ODOR, TURBID

~~TOP WEIGHT~~

SAMPLING INFORMATION:

Depth sample was acquired: 12 ft

Sample Date/Time: 06/05/19 @ 0830

Signed Sampler:

Sample Observations: ODOR, TURBID

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-20

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 19.40
Well Number: MW-20	DTW (ft): 8.14
Field Crew: MW, AD, JM, TH	Water Column (ft): 11.26

Remarks:

ODOR, CLEAR

SAMPLING INFORMATION:

Depth sample was acquired: 18 ft

Sample Date/Time: 06/05/19 @ 0835

Signed Sampler:

Sample Observations: ODOR, CLEAR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(2)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-26

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	06/05/19	Well Depth (ft):	17.12
Well Number:	MW-26	DTW (ft):	4.13
Field Crew:	MW, AD, JM, TH	Water Column (ft):	12.99

Remarks: CLEAR, NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired:	17 ft
Sample Date/Time:	06/05/19 @ 0845
Signed Sampler:	
Sample Observations:	CLEAR, NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-26B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	06/05/19	Well Depth (ft):	41.05
Well Number:	MW-26B	DTW (ft):	3.24
Field Crew:	MW, TH, JM, AD	Water Column (ft):	37.81

Remarks: CLEAR, NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired:	32 ft
Sample Date/Time:	06/05/19 @ 0850
Signed Sampler:	
Sample Observations:	CLEAR, NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-23

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	06/05/19	Well Depth (ft):	23.21
Well Number:	MW-23	DTW (ft):	6.63
Field Crew:	MW, AD, TH, JM	Water Column (ft):	16.58

Remarks: MW-23-060519 @0905 ☆ DUPLICATE ☆
MW-23-D-060519 @ 0906

SAMPLING INFORMATION:

Depth sample was acquired:	20 ft
Sample Date/Time:	06/05/19 @ 0905 Dup @ 0906
Signed Sampler:	
Sample Observations:	CLEAR, NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

~~4~~ 3

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-23B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	06/05/19	Well Depth (ft):	53.45
Well Number:	MW-23B	DTW (ft):	5.79
Field Crew:	MW, TH, AD, JM	Water Column (ft):	47.66

Remarks: CLEAR NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired: 40 ft

Sample Date/Time: 06/05/19 @ 0915

Signed Sampler:

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-46

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	06/05/19	Well Depth (ft):	17.08
Well Number:	MW-46	DTW (ft):	6.32
Field Crew:	AD, JM, TH, MW	Water Column (ft):	10.76

Remarks: CLEAR NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired: 14 ft

Sample Date/Time: 06/05/19 @ 0920

Signed Sampler:

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-45

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	06/05/19	Well Depth (ft):	14.45
Well Number:	MW-45	DTW (ft):	9.88
Field Crew:	AD, JM, TH, MW	Water Column (ft):	4.57

Remarks: CLEAR NO ODOR # TOP WEIGHT #

SAMPLING INFORMATION:

Depth sample was acquired: 14 ft

Sample Date/Time: 06/05/19 @ ~~0920~~ 0930

Signed Sampler:

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(5)
(4)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-45B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): ~~21.96~~	40.3
Well Number: MW-45B	DTW (ft):	10.52
Field Crew: MW, AD, TH, TM	Water Column (ft):	11.44

Remarks:

CLEAR, NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired: 30 ft

Sample Date/Time: 06/05/19 @ 0935

Signed Sampler:

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-21

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft):	20.66
Well Number: MW-21	DTW (ft):	12.21
Field Crew: MW, AD, TH, TM	Water Column (ft):	8.45

Remarks:

CLEAR, NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired: ~~06/05~~ 20 ft

Sample Date/Time: 06/05/19 @ 1005

Signed Sampler:

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-17B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft):	27.42
Well Number: MW-17B	DTW (ft):	10.69
Field Crew: MW, AD, TH, TM	Water Column (ft):	16.73

Remarks:

CLEAR, ODOR

SAMPLING INFORMATION:

Depth sample was acquired: 25 ft

Sample Date/Time: 06/05/19 @ 1015

Signed Sampler:

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-01

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 6-5-19	Well Depth (ft): 16.58
Well Number: MW-01	DTW (ft): 7.55
Field Crew: MW, TH	Water Column (ft): 9.03
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired:	10 ft
Sample Date/Time:	6-5-19 @ 1240
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-01B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 6-5-19	Well Depth (ft): 44.52
Well Number: MW-01B	DTW (ft): 6.55
Field Crew: TH, MW	Water Column (ft): 37.97
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired:	30 ft
Sample Date/Time:	6-5-19 @ 1245
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-27

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 6-5-19	Well Depth (ft): 29.58
Well Number: MW-27	DTW (ft): 21.14
Field Crew: TH, MW	Water Column (ft): 8.44
Remarks: CLEAR, ODOR	

SAMPLING INFORMATION:

Depth sample was acquired:	23 ft
Sample Date/Time:	6-5-19 @ 1255
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-27B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 50.50
Well Number: MW-27B	DTW (ft): 34.80
Field Crew: MW, TH, AD, JM	Water Column (ft):

Remarks: CLEAR, NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired:	41 Ft
Sample Date/Time:	06/05/19 @ 1300
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-11

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 32.40
Well Number: MW-11	DTW (ft): 24.69
Field Crew: MW, AD, JM, TH	Water Column (ft):

Remarks: MW-11-0605/19 ★ DUPLICATE ★
MW-11-D-060519

SAMPLING INFORMATION:

Depth sample was acquired:	25 Ft
Sample Date/Time:	06/05/19 @ 1310 Dup @ 1311
Signed Sampler:	
Sample Observations:	SHEEN, CLEAR, ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-12

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 21.03
Well Number: MW-12	DTW (ft): 10.43
Field Crew: MW, TH, AD, JM	Water Column (ft):

Remarks: CLEAR, NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired:	19Ft
Sample Date/Time:	06/05/19 @ 1325
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

(8)
(7)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-12B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 6-5-19	Well Depth (ft): 44.31
Well Number: MW-12B	DTW (ft): 11.57
Field Crew: TH, MW	Water Column (ft): 32.74

Remarks:

CLEAR, NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired: 37 ft

Sample Date/Time: 6-5-19 @ 1350

Signed Sampler:

Sample Observations: CLEAR, NO ODOR

Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-28

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 6-5-19	Well Depth (ft): 26.08
Well Number: MW-28	DTW (ft): 19.14
Field Crew: TH, MW	Water Column (ft): 6.94

Remarks:

TURBID, ODOR

SAMPLING INFORMATION:

Depth sample was acquired: 22

Sample Date/Time: 6-5-19 @ 1345

Signed Sampler:

Sample Observations: TURBID, ODOR

Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-49

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 6-5-19	Well Depth (ft): 23.80
Well Number: MW-49	DTW (ft): 14.68
Field Crew: TH, MW	Water Column (ft): 9.12

Remarks:

CLEAR, ODOR

SAMPLING INFORMATION:

Depth sample was acquired: 17 ft

Sample Date/Time: 6-5-19 @ 1350

Signed Sampler:

Sample Observations:

Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

(9)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-35

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 26.26
Well Number: MW-35	DTW (ft): 7.86
Field Crew: MW, TH, AD, JM	Water Column (ft): 18.4
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired: 17.5 ft
Sample Date/Time: 06/05/19 @ 1400
Signed Sampler:
Sample Observations:
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-25

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 18.08
Well Number: MW-25	DTW (ft): 6.49
Field Crew: MW, TH, AD, JM	Water Column (ft): 11.59
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired: 12 ft
Sample Date/Time: 06/05/19 @ 1435
Signed Sampler:
Sample Observations:
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-25B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 53.13
Well Number: MW-25B	DTW (ft): 3.11
Field Crew: MW, TH, AD, JM	Water Column (ft): 50.02
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired: 50 ft
Sample Date/Time: 06/05/19 @ 1440
Signed Sampler:
Sample Observations:
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

~~10~~ 9

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-15B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft):	80.90
Well Number: MW-15B	DTW (ft):	13.95
Field Crew: MW, TH, AD, JM	Water Column (ft):	66.95
Remarks: CLEAR, NO ODOR		

SAMPLING INFORMATION:

Depth sample was acquired:	70ft
Sample Date/Time:	06/05/19 @ 1450
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-38

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	Well Depth (ft):	11.51
Well Number: MW-38	DTW (ft):	1.36
Field Crew: MW, TH, AD, JM	Water Column (ft):	10.14
Remarks:		

SAMPLING INFORMATION:

Depth sample was acquired:	9Ft
Sample Date/Time:	06/05/19 @ 1510
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-37

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft):	18.03
Well Number: MW-37	DTW (ft):	3.19
Field Crew: MW, TH, AD, JM	Water Column (ft):	14.84
Remarks:		

SAMPLING INFORMATION:

Depth sample was acquired:	14 Ft
Sample Date/Time:	06/05/19 @ 1500
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

(10)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-47

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 22.84	
Well Number: MW-47	DTW (ft): 13.64	
Field Crew: MW, AD, JM, TH	Water Column (ft): 9.22	
Remarks: clear ; no odor	MW-47-060519	

SAMPLING INFORMATION:

Depth sample was acquired:	20 ft
Sample Date/Time:	06/05/19 @ 1005
Signed Sampler:	
Sample Observations:	no odor & clear
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-31

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 28.03	
Well Number: ~~MW-47~~ MW-31	DTW (ft): 15.86	
Field Crew: MW, AD, JM, TH	Water Column (ft): 12.17	
Remarks: clear ; no odor	MW-31-060519	

SAMPLING INFORMATION:

Depth sample was acquired:	25 ft
Sample Date/Time:	06/05/19 @ 1015
Signed Sampler:	
Sample Observations:	none ; no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-33T

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 99.89	
Well Number: MW-33T	DTW (ft): 21.81	
Field Crew: MW, AD, TH, JM	Water Column (ft): 78.08	
Remarks: clear cool water — no odor	MW-33T-060519	

SAMPLING INFORMATION:

Depth sample was acquired:	89 ft
Sample Date/Time:	06/05/19 @ 1025
Signed Sampler:	
Sample Observations:	none / no odor & clear
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

(11)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-48B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 74.07	
Well Number: MW-48B	DTW (ft): 15.82	
Field Crew: MW, TH, AD, JM	Water Column (ft): 58.25	
Remarks: None; clear cool water w/ no odor	MW-48B-060519	

SAMPLING INFORMATION:

Depth sample was acquired: 81 ft				
Sample Date/Time: 06/05/19 @ 1055				
Signed Sampler:				
Sample Observations: clear, no odor, cool				
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-50B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 102.20	
Well Number: MW-50B	DTW (ft): 17.75	
Field Crew: MW, AD, TH, JM	Water Column (ft): 84.45	
Remarks: slightly turbid water (brown) w/ some precipitate – no odor	MW-50B-060519 @ 1040	

SAMPLING INFORMATION:

Depth sample was acquired: 80 ft				
Sample Date/Time: 06/05/19 @ 1040				
Signed Sampler:				
Sample Observations: turbid, no odor				
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	~~MW-31~~ MW-14B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 85.34	
Well Number: MW-14B	DTW (ft): 18.33	
Field Crew: MW, AD, TH, JM	Water Column (ft): 67.01	
Remarks: cool, clear, no odor	MW-14B-060519 @ 1240	

SAMPLING INFORMATION:

Depth sample was acquired: 71 ft				
Sample Date/Time: 06/05/19 @ 1240				
Signed Sampler:				
Sample Observations: clear no odor				
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-14 ~~MW-33F~~

HYDRASLEEVE SAMPLING LOG

(12)

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 22.22	
Well Number: MW-14	DTW (ft): 12.53	
Field Crew: MW, JM, TH, AL	Water Column (ft): 9.69	

Remarks: no odor; cool, clear water

MW-14-060519 @ 1255
D TOP WEIGHT

SAMPLING INFORMATION:

Depth sample was acquired: 20 ft				
Sample Date/Time: 06/05/19 @ 1255				
Signed Sampler:				
Sample Observations: NONE; clear no odor				
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-13

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 22.13	
Well Number: MW-13	DTW (ft): 13.57	
Field Crew: JM AD, TH, MW	Water Column (ft): 8.63	

Remarks: clear; no odor

MW-13-060519 @ 1310

SAMPLING INFORMATION:

Depth sample was acquired: 19 ft				
Sample Date/Time: 06/05/19 @ 1310				
Signed Sampler:				
Sample Observations: clear; no odor				
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-13B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 06/05/19	Well Depth (ft): 55.05	
Well Number: MW-13B	DTW (ft): 14.28	
Field Crew: MW, AD, TH, JM	Water Column (ft): 40.77	

Remarks: clear; no odor

MW-13B-060519
@ 1315

SAMPLING INFORMATION:

Depth sample was acquired: 53 ft				
Sample Date/Time: 06/05/19 @ 1315				
Signed Sampler:				
Sample Observations: clear; no odor				
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-42

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 6-5-19	Well Depth (ft): 11.00
Well Number: MW-42	DTW (ft): 4.52
Field Crew: ~~AD~~ AD, SM	Water Column (ft): 6.48

Remarks: clear; no odor

MW-42-060519 @ 1340

SAMPLING INFORMATION:

Depth sample was acquired: 7.5

Sample Date/Time: 6-5-19 @ 1340

Signed Sampler:

Sample Observations: clear; no odor

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-41

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 6-5-19	Well Depth (ft): 13.19
Well Number: MW-41	DTW (ft): 3.07
Field Crew: AD, SM	Water Column (ft): 10.12

Remarks: MW-41-060519 @ 1350 DUP @ 1351 clear; no odor

MW-41-D-060519

SAMPLING INFORMATION:

Depth sample was acquired: 7.5

Sample Date/Time: 6-5-19 @ 1350 DUP @ 1531

Signed Sampler:

Sample Observations: clear; no odor

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-40

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 6-5-19	Well Depth (ft): 13.15
Well Number: MW-40	DTW (ft): 2.33
Field Crew: AD, JN	Water Column (ft): 10.82

Remarks: clear; no odor

MW-40-060519 @ 1405

SAMPLING INFORMATION:

Depth sample was acquired: 7.5

Sample Date/Time: 6-5-19 @ 1405

Signed Sampler:

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(14)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-39

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 6-5-19
Well Number: MW-39
Field Crew: AD, JM
Well Depth (ft): 13.03
DTW (ft): 4.54
Water Column (ft): 8.49
Remarks: clear; no odor

MW-39-060519 @ 1415

SAMPLING INFORMATION:

Depth sample was acquired: 9.5
Sample Date/Time: 6-5-19 @ 1415
Signed Sampler:
Sample Observations: clear; no odor
Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-34

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 6-5-19
Well Number: MW-34
Field Crew: AD, JM
Well Depth (ft): 7.82
DTW (ft): 3.07
Water Column (ft): 4.75
Remarks: clear; no odor

MW-34-060519 @ 1425

SAMPLING INFORMATION:

Depth sample was acquired: 5.00
Sample Date/Time: 6-5-19 @ 1425
Signed Sampler:
Sample Observations: clear; no odor
Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-5

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 6-5-19
Well Number: MW-15
Field Crew: AD, JM
Well Depth (ft): ~~80.70~~ 19.18
DTW (ft): ~~13.95~~ 4.80
Water Column (ft): ~~66.75~~ 14.38
Remarks: clear; no odor

MW-15-060519 @ 1440

SAMPLING INFORMATION:

Depth sample was acquired: 72.00
Sample Date/Time: 6-5-19 @ 1440
Signed Sampler:
Sample Observations: clear; no odor
Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

(10)
(15)

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-24

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date:
Well Number: MW-24
Field Crew: AD, TH, JM, MW
Remarks: NONE

Well Depth (ft): 15.50
DTW (ft): 4.94
Water Column (ft): 10.56

MW-24-060519 @ 1530

SAMPLING INFORMATION:

Depth sample was acquired: 11 ft
Sample Date/Time: 06/05/19 @1530
Signed Sampler:
Sample Observations: ~~clear~~ no odor; slight brown color
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-24B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date:
Well Number: MW-24B
Field Crew: AD, TH, JM, MW
Remarks: NONE

Well Depth (ft): 42.49
DTW (ft): 5.44
Water Column (ft): 37.05

MW-24B-060519 @ 1540

SAMPLING INFORMATION:

Depth sample was acquired: 30 ft
Sample Date/Time: 06/05/19 @1540
Signed Sampler:
Sample Observations: clear no odor
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-43

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date:
Well Number: MW-43
Field Crew: AD, TH, MW, JM
Remarks: None

Well Depth (ft): 10.30
DTW (ft): 5.03
Water Column (ft): 5.27

MW-43-060519 @ 1520

SAMPLING INFORMATION:

Depth sample was acquired: 10 ft
Sample Date/Time: 06/05/2019 @ 1520
Signed Sampler:
Sample Observations: clear no odor
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(16)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	[redacted] MW-43B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	Well Depth (ft): [redacted] 56.55
Well Number: [redacted] MW-43B	DTW (ft): 1.45
Field Crew: MW, AD, TH, JM	Water Column (ft): 55.10
Remarks: New	(MW-43B-060519) @ 1515

SAMPLING INFORMATION:

Depth sample was acquired:	25 ft
Sample Date/Time:	06/05/2019 ~~1520~~ @ 1515
Signed Sampler:	[signature]
Sample Observations:	clear no odor
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	[redacted]

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	Well Depth (ft): [redacted]
Well Number: [redacted]	DTW (ft):
Field Crew:	Water Column (ft):
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	[redacted]

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	Well Depth (ft):
Well Number: [redacted]	DTW (ft):
Field Crew:	Water Column (ft):
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400 | WELL NUMBER MW-17 | SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-17
Field Crew: JM + AD
Well Depth (ft): 11.22
DTW (ft): 9.86
Water Column (ft): 1.36
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 0.222
Depth of Screen (ft):

Purge Methodology: low flow

Site: Lewis Drive - KM PPL
Date: 06/04/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
(2")	(0.163)	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 34897
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 041175

PID reading: opening well | after venting, if initially high | middle of sampling | closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1545	Began purge/equipment setup									
1550	Began pump to purge well									
1555	10.41	200	0.0	5.56	22.5	0.122	41.9	1.01	12.3	no odor; clear
1600	10.60	200	0.1	5.51	19.4	0.120	44.1	0.48	7.1	
1605	10.88	150	0.3	5.53	20.3	0.133	35.6	0.44	6.2	
1610	11.23	120	0.4	5.48	20.9	0.134	42.0	0.57	4.9	
1615	well dry		0.5							
~~1620~~										
~~1625~~										
1645	10.65	pumped remainder of well volume							~	0.6 gal total
06/05/2019										
0805	Collected sample									

8/5/19

Remarks: Well ran dry before sample could be acquired. Allowed to recharge overnight & sample ~~SW~~ (MW-17-060519) was collected @ 0805 on 06/05/19. Total gal purged ~ 0.7 gal.

SAMPLING INFORMATION:

Depth to Water Before Sampling: 9.64
Depth sample was acquired: 10.85
Sample Methodology: LOW FLOW - PERISTALTIC
Sample Date/Time: ~~06~~/04/19 06/05/19
Signed Sampler: Jamie K JM
Filtered Metals Collected: Y / (N) Filter Size:
Sample Observations: clear, low - no odor
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400

WELL NUMBER MW-22

SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-22
Field Crew: JM & AD
Well Depth (ft): 10.34
DTW (ft): 7.94
Water Column (ft): 2.40
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 0.391
Depth of Screen (ft):

Purge Methodology: low flow

Site: Lewis Drive - KM PPL
Date: 06/05/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
(2")	(0.163)	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 34897
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 041175

PID reading: 0.0 ppm opening well ~~0.0~~ after venting, if initially high 0.0 ppm middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0830	Began	purge								
0835	~~7.94~~				~~25.7~~					
0840	7.94	150	0.0	5.89	20.7	0.178	61.9	1.23	0	no odor; clear
0845	8.16	150	0.2	5.40	20.6	0.160	116.1	1.21	0	
0850	8.23	150	0.4	5.23	20.7	0.158	144.5	1.16	0	
0855	8.28	150	0.6	5.10	20.8	0.157	~~0.157~~	0.89	0	
0900	8.36	150	0.7	5.06	20.8	0.155	186.9	0.73	0	
0905	8.38	150	0.8	5.08	21.1	0.153	184.5	0.67	0	
0910	8.42	150	1.0	5.09	21.2	0.152	187.3	0.64	0	
0915	8.42	150	1.1	5.09	21.2	0.150	187.0	0.63	0	
0920	Collected	sample								

6/5/19

Remarks: clear w/ no odor, well stabilized before running dry

MW-22-060519
Total gal purged ~1.2

SAMPLING INFORMATION:

Depth to Water Before Sampling: 8.42
Depth sample was acquired: 9.0
Sample Methodology: Low Flow - peri pump
Sample Date/Time: 06/05/19
Signed Sampler:
Filtered Metals Collected: Y / (N)
Filter Size: N/A
Sample Observations: clear, no odor
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER	WELL NUMBER SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	MW-46
Field Crew:	T. HALL, M. WARREN
Well Depth (ft):	17.08
DTW (ft):	7.51
Water Column (ft):	9.57
Well Diameter (in):	2
Gal. Per ft:	0.163
Well volume (gal):	1.56
Depth of Screen (ft):	

Purge
Methodology: low flow

Site: LEWIS DRIVE
Date: 7-17-19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045650
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 031271

PID reading: 0.0 opening well 0.0 after venting, if initially high 0.0 middle of sampling 0.0 closing well 0.0

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA (SLIGHT)
1410	7.56	200	.15	5.12	21.4	0.037	116.5	0.99	86.00	CLEAR/ODOR
1415	7.56	150	.40	4.88	20.7	0.035	106.0	0.52	262.5	"
1420	7.56	150	.50	4.78	20.4	0.035	108.2	0.43	331.5	"
1425	7.56	150	.75	4.76	20.4	0.035	109.3	0.40	387.2	"
1430	7.56	150	1.00	4.75	20.5	0.035	109.6	0.39	432.0	"
1435	7.57	150	1.15	4.74	20.3	0.035	109.9	0.38	514	"
1440	7.57	150	1.50	4.75	20.1	0.035	110.1	0.38	583	"
1445	7.57	150	1.60	4.75	20.1	0.035	110.7	0.39	616	"
1450	7.57	150	1.80	4.76	20.1	0.035	111.2	0.40	675	"
1455	7.57	150	2.00	4.77	20.3	0.035	111.3	0.41	687	"
1500	7.57	150	2.25	4.77	20.4	0.035	111.6	0.42	720.2	"

Remarks: FERROUS IRON CONCENTRATION: 0 mg/L

SAMPLING INFORMATION:

Depth to Water Before Sampling: 7.51 Depth sample was acquired: 13'
Sample Methodology: LOW FLOW / PERI PUMP · STRAW METHOD / VOLS
Sample Date/Time: 7-17-19 / 1505
Signed Sampler: T. HALL
Filtered Metals Collected: Y / (N) Filter Size: N/A
Sample Observations: CLEAR / SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: SULFATE, FERROUS IRON

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER	WELL NUMBER MW-57
	SHEET 1 OF

LOW FLOW SAMPLING LOG

Well Number: MW-57
Field Crew: T. HALL / M. WARREN
Well Depth (ft): 13.19 Purge
DTW (ft): 8.13 Methodology: low flow
Water Column (ft): 5.77
Well Diameter (in): ~~0.163~~ 2"
Gal. Per ft: 0.163
Well volume (gal): 0.94
Depth of Screen (ft):

Site: LEWIS DRIVE
Date: 07/17/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045630
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 031271

PID reading: opening well 2.0 after venting, if initially high 0.4 middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1655	8.23	180	0.2	5.08	18.8	0.037	147.1	0.59	33.2	CLEAR / SLIGHT ODOR
1700	8.23	180	0.5	5.03	18.5	0.037	147.2	0.43	51.80	CLEAR / SLIGHT ODOR
1705	8.23	180	0.75	4.99	18.3	0.037	147.6	0.37	104.00	CLEAR / SLIGHT ODOR
1710	8.23	180	1.1	4.96	18.3	0.037	146.9	0.34	151.60	CLEAR / SLIGHT ODOR
1715	8.23	180	1.34	4.96	18.2	0.037	145.5	0.32	207.10	CLEAR / SLIGHT ODOR
1720	8.23	180	1.7	4.96	18.2	0.036	143.6	0.31	253.00	CLEAR / SLIGHT ODOR
1725	8.24	180	2.0	4.97	18.1	0.036	141.6	0.30	260.89	CLEAR / SLIGHT ODOR
1730	8.24	180	2.25	4.97	18.2	0.036	139.9	0.29	283.00	CLEAR / SLIGHT ODOR
1735	8.24	180	2.60	4.98	18.2	0.036	138.0	0.28	288.93	CLEAR / SLIGHT ODOR
1740	8.24	180	2.80	4.99	18.2	0.036	136.4	0.28	323.10	CLEAR / SLIGHT ODOR
1745	8.24	180	3.20	4.99	18.2	0.036	134.4	0.28	390.22	CLEAR / SLIGHT ODOR
1750	COLLECT SAMPLE [MW-57-071719]									

Remarks: 3 WELL VOLUMES REACHED BEFORE SAMPLE WAS TAKEN. TURBIDITY DID NOT STABILIZE.

$Fe^{2+} = 0.0 \frac{mg}{L}$

SAMPLING INFORMATION:

Depth to Water Before Sampling: Depth sample was acquired: 9.0 ft
Sample Methodology: LOW FLOW / STRAW METHOD
Sample Date/Time: 07/17/19 @ 1750
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: NA
Sample Observations: CLEAR / SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: SULFATE FERROUS IRON

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER	WELL NUMBER SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-56
Field Crew: T.HALL, M.WARREN
Well Depth (ft): 17.60 — Purge
DTW (ft): 6.46 — Methodology: low flow
Water Column (ft): 11.14
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 1.82
Depth of Screen (ft): ——

Site: LEWIS DRIVE
Date: 7-17-19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
(2")	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045650
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 031271

PID reading: 0.2 opening well 0.2 after venting, if initially high 0.0 middle of sampling 0.0 closing well 0.0

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1530	6.94	200	.25	5.14	20.2	0.039	153.2	0.54	14.97	CLEAR/SLIGHT ODOR
1535	6.94	200	.45	5.09	20.1	0.039	152.8	0.44	14.05	"
1540	6.94	200	.75	5.03	19.9	0.038	153.6	0.38	13.80	"
1545	6.97	200	1.00	4.99	19.7	0.038	153.0	0.36	15.56	"
1550	6.97	200	1.25	4.98	19.7	0.038	151.0	0.34	16.13	"
1555	6.97	200	1.50	4.98	19.6	0.038	149.7	0.33	19.95	"
1600	~~7.00~~	200	1.75	4.99	19.6	0.038	147.7	0.34	21.75	"
1605	7.00	200	2.00	4.99	19.7	0.038	146.3	0.34	24.51	"
1610	7.00	200	2.40	5.00	19.7	0.038	144.4	0.36	27.55	"
1615	6.97	200	2.75	5.00	19.4	0.038	142.9	0.37	30.71	"
1620	6.97	200	2.90	5.00	19.2	0.038	141.9	0.39	35.03	"
1625	6.97	200	3.25	5.00	19.1	0.038	141.1	0.40	37.52	"
1630	6.97	200	3.50	5.00	19.1	0.038	140.1	0.41	39.75	"
1635	6.97	200	3.75	5.00	19.0	0.038	138.8	0.41	40.59	

Remarks:

SAMPLING INFORMATION:

Depth to Water Before Sampling: 6.97 Depth sample was acquired: 12 Ft
Sample Methodology: LOW FLOW, STRAW METHOD VOCs
Sample Date/Time: 7-17-19/1640
Signed Sampler: T. HALL
Filtered Metals Collected: Y / (N) Filter Size: NA
Sample Observations: CLEAR/SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: SULFATE, FERROUS IRON

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400

WELL NUMBER MW-38

SHEET OF

LOW FLOW SAMPLING LOG

Well Number: MW-38
Field Crew: M. WARREN, T. HALL
Well Depth (ft): 9
DTW (ft): 2.31
Water Column (ft): 6.69
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 1.09
Depth of Screen (ft):

Purge
Methodology: low flow

Site: LEWIS DRIVE
Date: 07/18/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045650
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 031271

PID reading: opening well 0.3 after venting, if initially high middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0958	START PUMP									
1000	1.70	200	0.1	5.28	22.3	0.042	148.6	0.65	5.09	CLEAR/SLIGHT ODOR
1005	1.71	200	.40	5.27	22.3	0.041	141.3	0.45	3.41	"
1010	1.72	200	.60	5.21	22.3	0.041	137.8	0.46	3.89	"
1015	1.72	200	.80	5.22	22.0	0.041	132.4	0.37	7.04	"
1020	1.72	200	1.20	5.22	22.8	0.041	127.5	0.36	10.22	"
1025	1.71	200	1.50	5.25	22.3	0.041	121.6	0.40	14.99	"
1030	1.71	200	1.60	5.24	22.1	0.041	120.4	0.41	16.78	"
1035	1.71	200	1.80	5.23	22.4	0.041	118.6	0.43	22.27	"
1040	1.71	200	2.00	5.23	22.6	0.041	118.4	0.44	24.10	"
1045	1.71	200	2.40	5.22	22.1	0.041	119.0	0.46	29.90	"
1050	1.72	200	2.60	5.21	21.8	0.041	121.0	0.47	32.60	SEE NOTE BELOW
1055	1.72	200	2.80	5.19	21.9	0.041	121.3	0.50	2.50	CLEAR/SLIGHT ODOR
1100	1.72	200	3.00	5.19	22.0	0.041	121.0	0.50	3.25	"
1105	1.72	200	3.30	5.19	22.1	0.041	120.9	0.51	4.15	
1110	COLLECT	MW-38-07	819							

07/18/19

Remarks: @ 1050, SHOCK YSI PROBE AND NTU WENT DOWN. MUST HAVE HAD BUILD UP ON IT.

$Fe^{2+} = 0.0 \frac{mg}{L}$

SAMPLING INFORMATION:

Depth to Water Before Sampling: 1.72 Depth sample was acquired: 4ft
Sample Methodology: LOW FLOW / STRAW METHOD
Sample Date/Time: 07/18/19 @ 1110
Signed Sampler:
Filtered Metals Collected Y / (N) Filter Size:
Sample Observations: CLEAR/~~NO ODOR~~ SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: SULFATE FERROUS IRON

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400

WELL NUMBER MW-37 SHEET | OF

LOW FLOW SAMPLING LOG

Well Number: MW-37
Field Crew: M. WARREN, T. HALL
Well Depth (ft): 15
DTW (ft): 3.15
Water Column (ft): 11.85
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 1.93
Depth of Screen (ft):

Purge
Methodology: low flow

Site: LEWIS DRIVE
Date: 07/18/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: ~~031271~~ 045650
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 045650 031271

PID reading: opening well 0.7 after venting, if initially high middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0858	START	PUMP								
0900	3.27	200	0.1	8.11	24.2	0.049	128.2	6.40	0.77	CLEAR / NO ODOR
0905	3.28	200	0.5	5.76	22.6	0.049	122.9	3.34	0.46	" "
0910	3.30	200	0.75	5.10	21.5	0.050	137.4	1.51	0.38	" "
0915	3.30	200	1.15	5.04	20.7	0.050	144.5	1.36	0.70	" "
0920	3.30	200	1.5	5.00	20.1	0.050	149.4	1.29	0.73	" "
0925	3.30	200	1.75	4.98	19.9	0.050	153.3	1.29	0.86	
0930	3.31	200	2.15	4.97	19.8	0.049	156.4	1.27	1.05	" "
0935	3.31	200	2.4	4.96	19.9	0.049	158.2	1.26	1.18	" "
0940	3.31	200	2.75	4.96	20.1	0.049	159.8	1.26	1.53	" "
0945	~~3.31~~	COLLECT	SAMPLE		MW-37-071819					" "

Remarks:

$Fe^{2+} = 0.0 \frac{mg}{L}$

SAMPLING INFORMATION:

Depth to Water Before Sampling: 3.31 Depth sample was acquired: 10 ft
Sample Methodology: LOW FLOW / STRAW METHOD
Sample Date/Time: 07/18/19 @ 0945
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: SULFATE FERROUS IRON

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-26

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 08/19/19	Well Depth (ft): 17.12
Well Number: MW-26	DTW (ft): 6.46
Field Crew: MW, TH, BG	Water Column (ft): 10.66

Remarks:

MW-26-081919

SLIGHT ORANGE TURBIDITY AT BOTTOM OF HYDRASLEEVE 12 Ft / NO ODOR

SAMPLING INFORMATION:

Depth sample was acquired:	12Ft - 15Ft
Sample Date/Time:	~~08/19/19~~ 08/19/19 @ 1350
Signed Sampler:	
Sample Observations:	SLIGHT ORANGE TURBIDITY AT BOTTOM OF HYDRASLEEVE / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-23

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 08/19/19	Well Depth (ft): 23.21
Well Number: MW-23	DTW (ft): 9.51
Field Crew: MW, BG, TH	Water Column (ft): 13.7

Remarks:

MW-23-081919

MW-23-D-081919

NO ODOR / CLEAR

SAMPLING INFORMATION:

Depth sample was acquired:	17Ft - 20Ft
Sample Date/Time:	08/19/19 @ 1410
Signed Sampler:	
Sample Observations:	NO ODOR / CLEAR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-41

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 08/19/19	Well Depth (ft): 13.19
Well Number: MW-41	DTW (ft): 4.2
Field Crew: MW, TH, BG	Water Column (ft): 8.99

Remarks:

NO ODOR / CLEAR

MW-41-081919

SAMPLING INFORMATION:

Depth sample was acquired:	~~9Ft - 12Ft - 15~~ 9ft - 12ft
Sample Date/Time:	08/19/19 @ 1430
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-39

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	08/19/19	Well Depth (ft):	13.03
Well Number:	MW-39	DTW (ft):	4.13
Field Crew:	MW, TH, BL	Water Column (ft):	8.90

Remarks: CLEAR/NO ODOR — MW-39-081919

SAMPLING INFORMATION:

Depth sample was acquired: 10 Ft - 13 Ft

Sample Date/Time: 08/19/19 @ 1435

Signed Sampler:

Sample Observations: CLEAR/NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-52

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	08/19/19	Well Depth (ft):	32.93
Well Number:	MW-52	DTW (ft):	16.92
Field Crew:	MW, TH, BL	Water Column (ft):	16.01

Remarks: NO ODOR/CLOUDY — MW-52-081919

SAMPLING INFORMATION:

Depth sample was acquired: 25ft - 27Ft

Sample Date/Time: 08/19/19 1535

Signed Sampler:

Sample Observations: CLOUDY/NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-51

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	08/19/19	Well Depth (ft):	25.38
Well Number:	MW-51	DTW (ft):	18.76
Field Crew:	MW, TH, BL	Water Column (ft):	6.62

Remarks: CLEAR/NO ODOR — MW-51-081919

SAMPLING INFORMATION:

Depth sample was acquired: ~~18ft -> 21ft~~ (w) 22Ft -> 25 Ft

Sample Date/Time: 08/19/19 @ 1540

Signed Sampler:

Sample Observations: CLEAR/NO ODORS

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-36

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	08/19/19	Well Depth (ft):	23.84
Well Number:	MW-36	DTW (ft):	17.20
Field Crew:	MW, BG, TH	Water Column (ft):	6.64

Remarks:

CLEAR / NO ODOR

MW-36-081919

SAMPLING INFORMATION:

Depth sample was acquired:	20 ft - 23 ft
Sample Date/Time:	08/19/19 @ 1555
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-55

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	08/19/19	Well Depth (ft):	25.20
Well Number:	MW-55	DTW (ft):	~~25.20~~ 18.89
Field Crew:	MW, BG, TH	Water Column (ft):	6.31

Remarks:

CLEAR / NO ODOR

MW-55-081919

SAMPLING INFORMATION:

Depth sample was acquired:	23 ft - 25 ft
Sample Date/Time:	08/19/19 @ 1600
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:		Well Depth (ft):	~~25.20~~
Well Number:		DTW (ft):	
Field Crew:		Water Column (ft):	

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-53

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 08/19/19	Well Depth (ft): 21.12
Well Number: MW-53	DTW (ft): 11.80
Field Crew: MW, TH, BG	Water Column (ft): 9.32

Remarks:

CLEAR / NO ODOR [MW-53-081919]

SAMPLING INFORMATION:

Depth sample was acquired: 17Ft → 20 Ft

Sample Date/Time: 08/19/19 @ MW-53-081919 @ 1510

Signed Sampler:

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-54

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 08/19/19	Well Depth (ft): 25.55
Well Number: MW-54	DTW (ft): 15.87
Field Crew: TH, BG, MW	Water Column (ft): 9.68

Remarks:

CLEAR / NO ODOR [MW-54-081919]

SAMPLING INFORMATION:

Depth sample was acquired: 22 Ft → 25 Ft

Sample Date/Time: 08/19/19 @ 1520

Signed Sampler:

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-07

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	Well Depth (ft):
Well Number: MW-07	DTW (ft):
Field Crew:	Water Column (ft):

Remarks:

LOW FLOW

SAMPLING INFORMATION:

Depth sample was acquired:

Sample Date/Time:

Signed Sampler:

Sample Observations:

Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-20

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 08/20/19	Well Depth (ft): 19.40
Well Number: MW-20	DTW (ft): 11.09
Field Crew: BG, TH, MW	Water Column (ft): 8.31

Remarks: SHEEN PRESENT IN SAMPLE / STRONG ODOR

SAMPLING INFORMATION:

Depth sample was acquired:	16 ft
Sample Date/Time:	08/20/19 @ 1300
Signed Sampler:	[signature]
Sample Observations:	CLEAR, STRONG ODOR, SHEEN PRESENT
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	Well Depth (ft):
Well Number:	DTW (ft):
Field Crew:	Water Column (ft):

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	Well Depth (ft):
Well Number:	DTW (ft):
Field Crew:	Water Column (ft):

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400

WELL NUMBER MW-37

SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-37-082019
Field Crew: B. Garvey
Well Depth (ft): 16
DTW (ft): 3.32
Water Column (ft): 12.68
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 2.02
Depth of Screen (ft): 5-15 ft
Purge Methodology: peristaltic, low flow

Site: Lewis Drive
Date: 8/20/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
(2")	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: #1045650
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: #034010

PID reading: 4.3 opening well — after venting, if initially high — middle of sampling 4.9 closing well 3.9

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0900	Begin purging on MW-37									
0905	3.42	250	<0.5	4.68	19.2	0.051	185.7	1.46	2.2	
0910	3.43	180	0.5	4.65	19.0	0.050	193.8	1.26	2.6	
0915	3.42	180	<1.0	4.67	18.9	0.049	200.3	1.19	2.8	
0920	3.40	200	>1.0	4.71	19.3	0.050	203.8	1.18	3.0	
0925	3.40	200	1.25	4.72	19.2	0.049	207.0	1.17	3.3	
0930	3.40	200	>1.50	4.74	19.3	0.049	210.3	1.20	3.8	
0935	3.40	200	1.75	4.75	19.3	0.049	212.0	1.24	4.1	
0940	Collect [MW-37-082019]									

BH 8/20/19

Remarks: Ferrous Iron = 0.0mg/L
Sodium Persulfate = 0.0 ppm
Hydrogen Peroxide = 0.0 ppm
Total vol purged = 2.5 gallons.

SAMPLING INFORMATION:

Depth to Water Before Sampling: 3.40
Depth sample was acquired: 12 ft
Sample Methodology: low-flow, peristaltic
Sample Date/Time: 8/20/19 / 0940
Signed Sampler: Bethany Haney
Filtered Metals Collected: Y / (N) Filter Size:
Sample Observations: clear, no odor
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D31614.00

WELL NUMBER mw-38

SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: mw-38-082019
Field Crew: B. Garvey
Well Depth (ft): 9
DTW (ft): 1.80
Water Column (ft): 7.2
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 1.17
Depth of Screen (ft): 4-9 ft
PID reading: 0.6 opening well

Purge peristaltic
Methodology: low flow

Site: Lewis Drive
Date: 8/20/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
(2")	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: #045650
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: #034010

after venting, if initially high — middle of sampling 4.1 closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1027	Begin purging									
1030	1.98	200	0.50	5.28	21.2	0.041	174.3	0.62	2.0	
1035	1.93	200	0.5	5.12	20.7	0.039	167.5	0.41	2.1	
1040	1.94	200	0.75	5.08	20.6	0.039	166.9	0.37	2.7	
1045	1.94	200	1.00	5.08	20.5	0.039	163.4	0.35	3.8	
1050	1.94	200	1.25	5.09	20.5	0.040	158.7	0.36	5.4	
1055	1.96	200	>1.50	5.07	20.4	0.039	155.5	0.33	6.8	
1100	1.92	200	>1.75	5.05	20.5	0.039	152.9	0.31	9.0	
1105	1.89	200	<2.25	5.03	20.4	0.039	152.4	0.30	9.2	
1110	1.89	200	2.50	5.04	20.5	0.039	151.4	0.30	9.4	
1115	Collect mw-38-082019									

BH 8/20/19

Remarks:
ferrous iron = 0.0 mg/L
Sodium persulfate = 0.0 ppm
Hydrogen peroxide = 0.0 ppm
total vol purged = 3.25 gallons

SAMPLING INFORMATION:

Depth to Water Before Sampling: 1.89
Depth sample was acquired: fft
Sample Methodology: low-flow, peristaltic pump
Sample Date/Time: 8/20/19 : 1115
Signed Sampler: Bethany Garvey
Filtered Metals Collected: Y / (N) Filter Size:
Sample Observations: clear
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-7
	SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-7-082019
Field Crew: B. Garvey
Well Depth (ft): 14.5
DTW (ft): 11.68
Water Column (ft): 2.82
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 0.50
Depth of Screen (ft): 3-13.5

Purge Methodology: peristaltic low-flow

Site: Lewis Drive Site, Belton, SC
Date: 8/20/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
(2")	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: #045650
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: #034010

PID reading: 181.7 opening well; after venting, if initially high; middle of sampling 789.6; closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4"	100-500	NA	±0.1 SU	±1°C	±5%	±20 mV	within 0.2 mg/L	±10% or < 10	NA
1430	Begin Purging									
1435	11.90	80	<0.5	5.38	23.3	0.080	124.6	0.95	9.5	
1440	11.92	100	<0.5	5.39	24.0	0.082	100.3	0.67	6.8	
1445	11.97	100	<0.5	5.43	23.9	0.086	87.1	0.52	5.0	
1450	12.02	100	0.5	5.45	23.5	0.088	77.4	0.43	4.0	
1455	12.06	100	<0.75	5.46	23.8	0.087	71.8	0.36	3.2	
1500	12.10	100	0.75	5.47	23.4	0.088	66.0	0.34	2.6	
1505	12.12	100	1.00	5.47	23.1	0.087	63.1	0.32	2.2	
1510	12.15	100	<1.25	5.46	23.2	0.087	61.0	0.31	2.1	
1515	Collect MW-7-082019 and MW-7-FD-082019-FD									

Remarks:
TOTAL VOLUME PURGED = <1.25 GALLONS

SAMPLING INFORMATION:

Depth to Water Before Sampling: 12.15
Depth sample was acquired: 13 ft
Sample Methodology: low-flow, peristaltic
Sample Date/Time: 8/20/19 @ 1515
Signed Sampler: Bethany Garvey
Filtered Metals Collected: Y / (N) Filter Size:
Sample Observations: cloudy, petroleum odor
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-46

SHEET OF

LOW FLOW SAMPLING LOG

Well Number: MW-46
Field Crew: MW, TH
Well Depth (ft): 14.00
DTW (ft): 8.54
Water Column (ft): 5.46
Well Diameter (in): ~~14.00~~ 2
Gal. Per ft: 0.163
Well volume (gal): 0.889 X5 = 4.5 GALLONS
Depth of Screen (ft):

Purge Methodology

Site: Lewis Drive Site, Belton, SC
Date: 08/21/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045650
Pump type (please circle): (TYPHOON) Peristaltic Bladder
Pump serial number: 024078

PID reading: opening well 16.5 after venting, if initially high — middle of sampling — closing well —

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4"	100-500	NA	±0.1 SU	±1°C	±5%	±20 mV	within 0.2 mg/L	±10% or < 10	NA
0936.34	8.54	0.70	2.0	5.91	24.0	3.1	211.1	8.41	15.74	TURBID/ODOR
0937.11		0.70	2.25	5.46	18.6	35.6	188.6	11.46	173.92	
0937.32		0.70	2.75	5.25	18.5	35.9	195.6	11.63	195.58	
0937.43		0.70	3.00	5.22	18.4	35.7	199.8	11.63	202.27	
0938.31		0.70	3.75	5.21	19.3	0.7	219.4	10.29	102.56	
0939.14		0.70	4.00	5.08	17.7	34.5	217.2	10.79	34.97	CLEAR/ODOR
09:39.38		0.70	4.50	5.05	17.7	36.1	219.6	10.88	37.90	
09:40.24		0.70	5.75	5.05	17.6	36.2	222.8	10.86	52.42	
0950	8.58	MW-46-082119								

08/21/19

* TOTAL VOLUME PURGED = 5.75 GALLONS

Remarks:
09:38.52 1 GAL
09:39.36 2 GAL
09:40:24 3 GAL

445 = 1 GAL

PERSULFATE = 0.0 ppm
HYDROGEN PEROXIDE = 0.0 ppm
Fe^{2+} = 0.0 mg/L

SAMPLING INFORMATION:

Depth to Water Before Sampling: 8.58
Depth sample was acquired: 13 ft
Sample Methodology: TYPHOON / BAILER
Sample Date/Time: 08/21/19 @ 0950
Signed Sampler:
Filtered Metals Collected Y / N Filter Size:
Sample Observations: TURBID → CLEAR
Parameters (please circle): VOCs SVOCs Dissolved Metals Other: SULFATE

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-23
Field Crew: MW, TH
Well Depth (ft): 23.21
DTW (ft): 9.45
Water Column (ft): 13.76
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 2.24 x5 = 11.2
Depth of Screen (ft): 5-20 ft
Purge Methodology:

Site: Lewis Drive Site, Belton, SC
Date: 08/21/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045650
Pump type (please circle): (TYPHOON) Peristaltic Bladder
Pump serial number: 35089

PID reading: 7.4 opening well — after venting, if initially high — middle of sampling — closing well —

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4"	100-500	NA	±0.1 SU	±1°C	±5%	±20 mV	within 0.2 mg/L	±10% or < 10	NA
11:26:05	9.45	2GAL/min	0.5	5.79	24.1	1.0	282.6	6.95	14.96	TURBID/ODOR
11:27:05	↓	↓	2	5.08	18.0	81.9	246.5	1.85	589.24	↓
11:28:06	↓	↓	3.4	5.02	18.2	19.1	236.0	3.24	485.26	↓
11:29:07	11.18	↓	4.6	4.99	17.9	78.2	243.3	1.05	450.52	↓
11:30:19	↓	↓	6.8	5.36	18.4	0.7	246.6	7.44	246.6	CLEAR/ODOR
11:31:05	↓	↓	10	5.00	17.8	76.8	260.5	1.59	119.49	↓
11:31:50	↓	↓	12	4.99	17.8	76.8	263.5	0.93	103.7	↓
1145	MW-23-082119									

08/21/19

Remarks:

11:28:17 1GAL
11:29:43 2GAL >26s
11:29:14 3GAL >31s > 28 SECONDS/GAL

TOTAL VOLUME PURGED = 12 GALLONS

SAMPLING INFORMATION:

Depth to Water Before Sampling: 10.00
Depth sample was acquired: 19 FT
Sample Methodology: TYPHOON / BAILER
Sample Date/Time: 08/21/19 @ 1145
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: NA
Sample Observations: TURBID → ~~NO ODOR~~ CLEAR / ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	mw-57
	SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: mw-57-082119
Field Crew: B. Garvey
Well Depth (ft): 13.9
DTW (ft): 9.06
Water Column (ft): 4.84
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 0.79
Depth of Screen (ft): 3.9-13.9
Purge Methodology: low-flow

Site: Lewis Drive Site, Belton, SC
Date: 8.21.19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
(2")	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: #033622
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: #034010

PID reading: opening well 17.4 after venting, if initially high — middle of sampling closing well

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4"	100-500	NA	±0.1 SU	±1°C	±5%	±20 mV	within 0.2 mg/L	±10% or < 10	NA
0925	Begin purging									
0930	9.11	200	<0.5	4.23	19.9	1.832	274.2	1.83	23.8	
0935	9.11	200	<0.5	4.18	19.7	1.815	340.7	1.55	19.2	
0940	9.12	200	<0.75	4.21	19.4	1.759	372.5	1.42	21.4	
0945	9.13	200	<1.0	4.23	19.4	1.706	389.2	1.36	27.8	trend flow down a bit
0950	9.13	180	>1.0	4.25	19.5	1.675	396.5	1.34	31.3	
0955	9.13	180	>1.25	4.27	19.5	1.629	406.4	1.32	42.3	
1000	9.13	180	>1.5	4.27	19.5	1.611	412.0	1.36	44.9	
1005	9.13	180	1.75	4.30	19.7	1.567	417.2	1.36	54.1	
1010	9.13	180	2.0	4.32	19.7	1.524	422.8	1.36	57.3	
1015	9.13	180	2.25	4.33	19.6	1.511	424.4	1.36	58.8	
1020	Collect	mw-57-082119				and	mw-57-082119-FD			
							mw-57-D-082119			

BK 8.21.19

Remarks:
Ferrous iron = 0.0 mg/L
sodium persulfate = 1,225 mg/L
hydrogen peroxide = 300 mg/L
Total vol purged = 3.25 gallons

SAMPLING INFORMATION:

Depth to Water Before Sampling: 9.13
Depth sample was acquired: 13.9'
Sample Methodology: low-flow; peristaltic pump
Sample Date/Time: 8.21.19 / 1020
Signed Sampler: Bethany Garvey
Filtered Metals Collected: Y / (N) Filter Size:
Sample Observations: Clear
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: Sulfate

JACOBS

PROJECT NUMBER	WELL NUMBER mw-56
D3161400.A.PN.EV.LDOMR.GW	SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: mw-56-082119
Field Crew: B. Garvey
Well Depth (ft): 14.3
DTW (ft): 7.47
Water Column (ft): 6.83
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 1.11
Depth of Screen (ft): 4.3-14.3
Purge Methodology:

Site: Lewis Drive Site, Belton, SC
Date: 8.21.19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
(2")	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: #033622
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: #034010

PID reading: opening well 18.9 after venting, if initially high — middle of sampling 0.0 closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4"	100-500	NA	±0.1 SU	±1°C	±5%	±20 mV	within 0.2 mg/L	±10% or < 10	NA
1113	Begin purging									
1117	7.74	170	<0.5	5.38	21.4	0.047	271.9	37.98	47.2	
1122	7.79	170	<0.5	5.26	21.0	0.036	283.0	38.25	37.1	
1127	7.84	170	<0.75	5.18	20.7	0.036	289.9	37.55	37.2	
1132	7.88	170	1.0	5.16	20.7	0.036	293.7	36.96	57.1	
1137	7.90	170	<1.25	5.15	20.6	0.036	296.5	36.57	72.9	
1142	7.91	170	>1.25	5.10	20.5	0.036	301.0	37.01	60.7	
1147	7.91	170	1.75	5.10	20.5	0.036	302.5	35.83	76.7	
1152	7.91	170	>1.75	5.08	20.5	0.036	305.0	36.70	72.7	
1157	7.91	170	>2.0	5.09	20.6	0.036	306.3	35.50	74.6	
1200	Collect mw-56-082119									

BH 8.21.19

Remarks:
Ferrous Iron = 0.0 mg/L
Sodium persulfate = 0.0 mg/L
hydrogen peroxide = 0.0 mg/L
Total vol purged = 2.75 gallons

SAMPLING INFORMATION:

Depth to Water Before Sampling: 7.91
Depth sample was acquired: 13 ft.
Sample Methodology: low-flow, peristaltic pump
Sample Date/Time: 8.21.19 / 1200
Signed Sampler: Bethany Harvey
Filtered Metals Collected: Y / (N) Filter Size:
Sample Observations: cloudy, chemical smell
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: Sulfate

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-40
	SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-40
Field Crew: MW, BG, TH
Well Depth (ft): 13.2
DTW (ft): 2.51
Water Column (ft): 10.69
Well Diameter (in): 2
Gal. Per ft: 1.63
Well volume (gal): 1.74 x 5 = 8.75
Depth of Screen (ft):
Purge Methodology: TYPHOON

Site: Lewis Drive Site, Belton, SC
Date: 08/21/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045650
Pump type (please circle): (TYPHOON) Peristaltic Bladder
Pump serial number: 040078

PID reading: 1.5 opening well — after venting, if initially high — middle of sampling 9.9 closing well —

Field Parameters

Time	DTW (toc)	Flow Rate (mL/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. (mg/L) within 0.2	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4"	100-500	NA	±0.1 SU	±1°C	±5%	±20 mV	mg/L	±10% or < 10	NA
1544:01	2.51	0.9	0.1	6.51	20.0	16.6	133.5	4.92	85.28	CLEAR/SLIGHT ODOR
1544:51	—	0.9	1.0	5.90	21.8	12.2	122.7	4.38	31.08	↓
1545:51	—	0.9	1.75	5.50	21.2	20.9	194.4	4.02	68.16	↓
1546	11.2	WELL PUMPED DRY								
1550	4.76	CONTINUE TO ALLOW WELL TO RECHARGE								
1554	4.49	START PUMP								
1555:11	—	1.8	~~3.35~~ 3.40	5.96	20.7	15.1	153.1	5.09	122.67	↓
1555:46	—	1.8	~~5.50~~ 5.50	5.58	19.9	24.3	179.3	3.84	54.03	↓
1556:00	WELL	DRY	5.5	—						
1559:00	7.00	CONTINUE TO ALLOW WELL TO RECHARGE								
1604:10	3.74	CONTINUE TO ALLOW WELL TO RECHARGE								↓
1604:15	START	PUMP								
1602:11	—	1.20	6.5	5.66	19.6	15.5	176.4	6.10	52.53	
1607:40	—	1.20	7.9	5.54	20.2	28.7	181.3	4.27	27.37	↓
1607:43	WELL	PUMPED DRY	→	8.5	GALLONS	PURGED				↓
1610	MW-40-082119									

Remarks:

MW-40-082119

8.5 TOTAL GALLONS PURGED

SAMPLING INFORMATION:

Depth to Water Before Sampling: 7.00 Depth sample was acquired: 9 FT
Sample Methodology: TYPHOON / BAILER
Sample Date/Time: 08/21/19 @ 1610
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: NA
Sample Observations: CLEAR / SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400 A PN EV LDOMR GW

WELL NUMBER: SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-34
Event Code: MW, TH, BG
Well Depth (ft): 7.85
DTW (ft): 3.11
Water Column (ft): 4.71
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): ~~1.53~~ x 4 = 6.4
Depth of Screen (ft): 0.7645 = 3.8
PID reading: 1.0

Purge Methodology:

Site: Lewis Drive Site, Belton, SC
Date: 08/21/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045650
Pump type (please circle): TYPHOON / Peristaltic / Bladder
Pump serial number: 35089

opening well | after venting if initially high | middle of sampling | closing well

Field Parameters

Time	DTW (TOC)	Flow Rate (mL/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	~~3.22~~ (< 4')	100-500	NA	±0.1 SU	±1°C	±5%	±20 mV	within 0.2 mg/L	±10% or < 10	NA
1445	3.11	1.5 GAL/DAY	0.5	5.46	31.8	5.5	150.2	7.32	247.59	TURBO / NOODOR @
1446	WELL NOT DRY		0.5							
1447	7.11									
1452	7.10									
1455	7.32	↓	0.65							
1500	7.29									
1504	7.25									
1509	7.22									
1514	7.20	↓	0.75							
1517	WELL PURGED DRY									
1000	@ 08/22/19	MW-34-082219								

08/22/19

Remarks: WELL RECHARGED TO DTW = 4.38 Ft AT 0900 ON 08/22/19

TOTAL VOLUME PURGED = 0.75 GALLONS

SAMPLING INFORMATION

Depth to Water Before Sampling: 4.38
Depth sample was acquired: 6.5 Ft
Sample Methodology: BAILER
Sample Date/Time: 08/22/19 @ 1000
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: NA
Sample Observations:
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other

TUBING PLACED TO 60 FT AT WELL PUMPED DRY, RESTARTED PUMPING AT 1032

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMP.GW	MW-15B
	SHEET OF

LOW FLOW SAMPLING LOG

Well Number: MW-15B
Field Crew: MW, TH, BG
Well Depth (ft): 77.9
DTW (ft): 15.16
Water Column (ft): 62.74
Well Diameter (in): 4"
Gal. Per ft: 0.653
Well volume (gal): 40.97 x5 = 205 GAL
Depth of Screen (ft): 69.7-77.9
Purge Methodology:

Site: Lewis Drive Site, Belton, SC
Date: 08/22/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045650
Pump type (please circle): (TYPHOON) Peristaltic Bladder
Pump serial number: 024078

PID reading: 11.1 opening well; after venting, if initially high; middle of sampling; closing well

Field Parameters

Time	DTW (toc)	Flow Rate (mL/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4"	100-500	NA	±0.1 SU	±1°C	±5%	±20 mV	within 0.2 mg/L	±10% or < 10	NA
0932	BEGIN PUMP									
0934	15.16	2.5	—	9.42	18.5	152.5	89.1	2.89	86.2	SLIGHT ODOR / CLEAR
0940	29.7	2.5	—	9.44	18.1	151.0	110.1	2.35	14.27	
0945	35.9	2.5	—	8.87	17.9	152.2	100.1	3.20	15.81	
0950	41.51	2.5	55	9.50	17.6	151.0	90.8	3.18	12.90	
0955	50.10	2.5		9.05	18.3	147.9	108.6	3.71	19.6	
1030	62.4	2.5		11.25	18.3	537	37.2	2.92	97.4	DARK TURBID
1035	67.8	2.5		10.22	18.8	190.9	82.3	2.93	78.3	
1040	73.0	2.5	110	10.0 9.28	24 18.4	191.2	80.5	3.46	187.13	
1055	WELL PUMPED DRY									
1100	77.6	RECHARGING								
1115	76.0	RECHARGING								
1339	71.48	REGAUGED								
1340	71.48	MW-15B-082219 J								

Remarks: AT 1055, WELL BEGAN PUMPING DARK SEDIMENT FROM BOTTOM OF WELL. PUMPING WAS STOPPED AT 77 FT BTOC

TOTAL VOLUME PURGED = 110 GALLONS

SAMPLING INFORMATION:

Depth to Water Before Sampling: 71.48 Depth sample was acquired: 74 ft
Sample Methodology: BAILER
Sample Date/Time: 08/22/19 @ 1340
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: NA
Sample Observations: CLEAR / ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-17B
	SHEET OF

LOW FLOW SAMPLING LOG

Well Number: MW-17B
Field Crew: TH, BG, MW
Well Depth (ft): 27.00
DTW (ft): 14.05
Water Column (ft): 12.95
Well Diameter (in): 6"
Gal. Per ft: 1.469
Well volume (gal): 19 x 5 = 95
Depth of Screen (ft): 17-27
Purge Methodology:

Site: Lewis Drive Site, Belton, SC
Date: 08/22/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 033622
Pump type (please circle): (TYPHOON) Peristaltic Bladder
Pump serial number: 35089

PID reading: 54.9 opening well; after venting, if initially high 14.7 middle of sampling; closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4"	100-500	NA	±0.1 SU	±1°C	±5%	±20 mV	within 0.2 mg/L	±10% or < 10	NA
1602	START PUMP									
1605	16.80	2.5	—	6.10	22.1	159.2	54.1	2.94	56.44	DARK TURBID/STRONG ODOR
1610	18.25	2.5	50	6.17	20.1	151.2	35.1	3.31	25.69	
1620	18.74	2.5	—	6.24	20.7	138	33.5	4.20	7.46	
1630	18.95	2.5	—	5.96	21.6	136.6	72.5	4.10	7.78	
1634	19.05	2.5	110	5.97	19.4	136.4	64.0	4.04	7.05	
1640	[MW-17B-082219]									

08/22/19

Remarks:

TOTAL VOLUME PURGED 110 GALLONS.

SAMPLING INFORMATION:

Depth to Water Before Sampling: 19.05
Depth sample was acquired: 22ft
Sample Methodology: TYPHOON/BAILER
Sample Date/Time: 08/22/19 @ 1640
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: NA
Sample Observations: STRONG ODOR / SLIGHT DARK TURBIDITY
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-12B
	SHEET OF

LOW FLOW SAMPLING LOG

Well Number: MW-12B
Field Crew: MW, BG, TH
Well Depth (ft): 43
DTW (ft): 14.49
Water Column (ft): ~~14~~ 28.51
Well Diameter (in): 6"
Gal. Per ft: 1.469
Well volume (gal): 41.88 x5 = 210g
Depth of Screen (ft): 33-43
Purge Methodology:

Site: Lewis Drive Site, Belton, SC
Date: 08/22/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 035622
Pump type (please circle): (TYPHOON) Peristaltic Bladder
Pump serial number: 024078

PID reading: 2.3 opening well; after venting, if initially high; middle of sampling; closing well

Time	DTW (toc)	Flow Rate (mL/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4%	100-500	NA	±0.1 SU	±1°C	±5%	±20 mV	within 0.2 mg/L	±10% or < 10	NA
1329	14.55	BEGIN PUMP								
1330	14.62	2.5	—	8.58	18.0	87.6	-10.4	3.53	0.47	CLEAR/ODOR
1335	14.58	2.5	—	6.98	17.6	71.8	45.0	2.85	0	
1350	14.44	2.5	55	6.81	19.2	64.6	70.1	2.52	0	
1405	14.32	2.5	—	6.40	17.8	63.7	85.1	2.75	0	
1405			110							
1420	12.70	2.5	—	6.71	17.6	58.3	128.4	3.04	0	
~~1435~~ 1427			150							
1435	PUMP STOPPED/CHANGED OUT CONTROL BOX									
1445	START PUMP									
1445	13.03	2.5	—	6.18	17.4	63.3	101.7	2.26	8.66	
1500	13.13	2.5	—	6.33	18.1	60.0	134.2	3.90	0	
1505	13.15	~~2.~~ STOPPED PUMP. TOTAL VOL. PURGED = 210 GALLONS								
1510	13.15	MW-12B-082219								

08/22/19

Remarks:

SAMPLING INFORMATION:

Depth to Water Before Sampling: 13.15
Depth sample was acquired: 35FT
Sample Methodology: TYPHOON / BAILER
Sample Date/Time: 08/22/19 @ 1510
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: NA
Sample Observations: CLEAR/ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(1)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-43B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 09/17/19
Well Number: MW-43B
Field Crew: MW, CS
Remarks: MW-43B-091719

Well Depth (ft): ~~2.64~~ 56.55
DTW (ft): 2.64
Water Column (ft): 53.91

SAMPLING INFORMATION:

Depth sample was acquired: 45 ft
Sample Date/Time: 09/17/19 @ 1405
Signed Sampler:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-43

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 09/17/19
Well Number: MW-43
Field Crew: MW, CS
Remarks: MW-43-091719

Well Depth (ft): 10.30
DTW (ft): 5.29
Water Column (ft): 5.01

SAMPLING INFORMATION:

Depth sample was acquired: 7 ft
Sample Date/Time: 09/17/19 @ 1415
Signed Sampler:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-24

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 09/17/19
Well Number: MW-24
Field Crew: MW, CS
Remarks: MW-24-091719 LIGHT ORANGE FLOC

Well Depth (ft): 15.50
DTW (ft): 5.28
Water Column (ft): 10.22

SAMPLING INFORMATION:

Depth sample was acquired: 10 ft
Sample Date/Time: 09/17/19 @ 1440
Signed Sampler:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

SW8260B

Turnaround Time (days): 14

(2)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-24B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 09/17/19	Well Depth (ft): 42.49
Well Number: MW-24B	DTW (ft): 5.84
Field Crew: MW, CS	Water Column (ft): ~~32 ft~~ 36.65

Remarks:

MW-24B-091719

SAMPLING INFORMATION:

Depth sample was acquired: 32 ft

Sample Date/Time: 09/17/19 @ ~~1445~~ 1450

Signed Sampler:

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-28

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 09/17/19	Well Depth (ft): 26.08
Well Number: MW-28	DTW (ft): 22.95
Field Crew: MW, CS	Water Column (ft): 49.03

Remarks:

MW-28-091719

SAMPLING INFORMATION:

Depth sample was acquired: 23 ft

Sample Date/Time: 09/17/19 @ 1530

Signed Sampler:

Sample Observations: CLEAR / SLIGHT ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-49

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 09/17/19	Well Depth (ft): 23.80
Well Number: MW-49	DTW (ft): 19.45
Field Crew: MW, CS	Water Column (ft): 4.35

Remarks:

MW-49-091719

SAMPLING INFORMATION:

Depth sample was acquired: 21 ft

Sample Date/Time: 09/17/19 @ ~~1540~~ 1545

Signed Sampler:

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(3)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-35

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 09/17/19	Well Depth (ft): 26.26
Well Number: MW-35	DTW (ft): 10.07
Field Crew: MW, CS	Water Column (ft): 16.19

Remarks:

MW-35-091719

SAMPLING INFORMATION:

Depth sample was acquired:	22 ft
Sample Date/Time:	09/17/19 @ 1600
Signed Sampler:	[signature]
Sample Observations:	CLEAR; NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	Well Depth (ft): 26.26
Well Number:	DTW (ft): 10.07
Field Crew:	Water Column (ft): 26.26

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	Well Depth (ft):
Well Number:	DTW (ft):
Field Crew:	Water Column (ft):

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER

WELL NUMBER MW-46
SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-46
Field Crew: MW, CS
Well Depth (ft): 17.08
DTW (ft): 9.36
Water Column (ft): 7.72
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 1.26
Depth of Screen (ft): 9ft-14ft

Purge
Methodology: low flow

Site: LEWIS DRIVE
Date: 09/17/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 033622
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 03127

PID reading: opening well 0.0 after venting, if initially high 0.0 middle of sampling closing well 0.0

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA (N)
0945	9.43	BEGIN PUMP								
0950	9.45	200	0.1	5.41	20.0	37.9	154.3	10.45	3.6	CLEAR/NO ODOR
0955	9.43	200	~~0.2~~ 0.6	5.24	20.2	37.0	188.3	11.52	0.0	CLEAR/NO ODOR
~~0955~~ 1000	9.42	200	1.0	5.22	20.1	36.9	203.6	11.47	2.9	CLEAR/NO ODOR
1005	↓	200	1.2	5.20	20.3	36.7	214.2	11.37	21.6	clear/no odor
1010		200	1.5	5.19	20.3	36.6	224.7	11.33	14.0	clear/no odor
1015		200	1.7	5.19	20.4	36.7	231.0	11.27	12.2	clear/no odor
1020		200	1.8	5.20	20.3	36.8	237.3	11.03	0.0	clear/no odor
1025		200	2.2	5.20	20.3	37.0	238.0	11.05	0.0	clear/no odor
1030	@	200	~~2.7~~ 2.3	5.21	20.6	37.0	240.0	10.65	0.0	clear/no odor
~~1035~~ 1050	@ Collect	sample	MW	-46-	091719					

9/17/19

Remarks:

SAMPLING INFORMATION:

Depth to Water Before Sampling: 9.42 Depth sample was acquired: 14ft
Sample Methodology: LOW FLOW
Sample Date/Time: 09/17/19 @ 1050
Signed Sampler:
Filtered Metals Collected: Y (N) Filter Size: N/A
Sample Observations: CLEAR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: SULFATE

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER

WELL NUMBER MW-56
SHEET 1 OF

LOW FLOW SAMPLING LOG

Well Number: MW-56
Field Crew: MW, CS
Well Depth (ft): 17.08
DTW (ft): 8.26
Water Column (ft): 8.82
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 1.43
Depth of Screen (ft): 4.3 – 14.3 ft

Purge
Methodology: low flow

Site: LEWIS DRIVE
Date: 09/17/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 033622
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 031271

PID reading: opening well 0.1 after venting, if initially high middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1100	8.82	START PUMP								(N)
1120 ~~1105~~	8.43	150	0.35	5.67	21.2	37.1	212.0	25.62	73.7	clear / no odor
1125	8.50	150	0.75	5.57	21.5	36.7	234.6	28.23	5.0	CLEAR / SLIGHT ODOR
1130	8.52	150	0.85	5.58	21.4	36.6	238.0	28.78	5.2	clear / slight odor
1135	8.54	150	1.15	5.54	21.4	36.5	253.2	29.98	9.7	clear / slight odor
1140	8.56	150	1.40	5.53	21.6	36.4	257.5	30.07	2.1	clear / slight odor
1145	8.56	150	1.60	5.53	~~21.3~~	36.6	261.3	30.91	9.6	clear / slight odor
1150	Collected	Sample	[MW-56-091719]							

9/17/19

Remarks:

SAMPLING INFORMATION:

Depth to Water Before Sampling: 8.56
Depth sample was acquired: 14ft
Sample Methodology: LOW FLOW
Sample Date/Time: 09/17/19 @
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: NA
Sample Observations: CLEAR / SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: SULFATE

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER 316 1400

WELL NUMBER MW-38

SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-38
Field Crew: TH, AD
Well Depth (ft): 9.0
DTW (ft): 1.92
Water Column (ft): 7.08
Well Diameter (in): 2"
Gal. Per ft: 0.163
Well volume (gal): 1.15
Depth of Screen (ft): 4-9'

Purge
Methodology: low flow

Site: ~~9 17 19~~ LEWIS DRIVE
Date: 9-17-19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 312712
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 014702

PID reading: opening well 0.0 after venting, if initially high — middle of sampling 0.0 closing well 0.0

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1415	2.13	150	.15	5.75	23.1	0.070	313.6	1.17	5.46	CLEAR/NO ODOR
1420	2.16	150	.50	5.12	22.3	0.065	291.8	1.39	2.30	"
1425	2.17	150	.75	5.01	22.3	0.064	290.6	1.57	1.62	"
1430	2.18	150	.90	4.87	22.2	0.063	288.7	2.03	1.31	"
1435	2.18	150	1.20	4.83	22.2	0.063	290.5	2.24	1.32	"
1440	2.19	150	1.45	4.81	21.9	0.063	291.1	2.34	1.25	"

Remarks: WTL ABOVE GROUND UPON STARTING PURGE.

MW-38-091719

SAMPLING INFORMATION:

Depth to Water Before Sampling: 1.92
Depth sample was acquired: 8.0'
Sample Methodology: LOW FLOW
Sample Date/Time: 9-17-19 / 1450
Signed Sampler:
Filtered Metals Collected: Y (N) Filter Size: —
Sample Observations: CLEAR NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: NITRATE BY IC

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: D316/400

WELL NUMBER: MW-37

SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW37
Field Crew: TH, AO
Well Depth (ft): 18.04
DTW (ft): 3.79
Water Column (ft): 14.25
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 2.32
Depth of Screen (ft): 5'-15'

Purge
Methodology: low flow

Site: LEWIS DRIVE
Date: 9-17-19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 312712
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 014707

PID reading: opening well 0.0 after venting, if initially high — middle of sampling 0.0 closing well 0.0

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc_i	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1520	3.70	150	.25	4.71	21.3	0.048	281.2	1.32	2.45	CLEAR/NO ODOR
1525	3.72	150	.50	4.67	21.2	0.048	281.9	1.28	2.38	"
1530	3.72	150	.75	4.55	20.7	0.048	282.6	1.22	1.28	"
1535	3.72	150	1.00	4.49	20.6	0.048	282.5	1.16	1.34	"
1540	3.73	150	1.25	4.44	20.6	0.048	281.6	1.12	1.63	"
1545	3.74	150	1.50	4.40	20.6	0.048	280.4	1.10	2.36	"

Remarks: MW-37-091719

SAMPLING INFORMATION:

Depth to Water Before Sampling: 3.99'
Depth sample was acquired: ~~14'~~ (TD) 14.00'
Sample Methodology: LOW FLOW
Sample Date/Time: 9-17-19 / 1550
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: SULFATE BY IC

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400

WELL NUMBER SHEET 1 OF 1 MW-57

LOW FLOW SAMPLING LOG

Well Number: MW-57
Field Crew: TH, AD
Well Depth (ft): 13.40
DTW (ft): 9.79
Water Column (ft): 3.61
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 0.59
Depth of Screen (ft): 3' - 13.9'

Purge
Methodology: low flow

Site: LEWIS DRIVE
Date: 09/17/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045657
Pump type (please circle): Peristaltic Bladder
Pump serial number: 014702

PID reading: opening well 1.4 after venting, if initially high ~ middle of sampling 4.7 closing well 1.5

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1015	9.85	150	.10	~~4~~ 4.25	20.4	5.240	487.9	1.59	12.17	CLEAR/SLIGHT ODOR
1020	9.85	150	.25	3.93	20.2	5.281	504.2	1.48	12.84	"
1025	9.86	150	.50	3.76	20.2	5.495	519.6	1.47	36.45	"
1030	9.87	150	.75	3.69	20.2	5.567	526.7	1.40	72.81	"
1035	9.87	150	1.00	3.67	20.2	5.591	528.3	1.38	89.72	"
1040	9.86	150	1.15	3.61	20.1	5.692	533.1	1.43	94.30	"
1045	9.86	150	1.25	3.62	20.2	5.567	532.6	1.35	95.82	

Remarks:

MW-57-091219

SAMPLING INFORMATION:

Depth to Water Before Sampling: 9.79
Depth sample was acquired: 12.00
Sample Methodology: LOW FLOW
Sample Date/Time: 9-17-19 / 1050 DUP @ 1055
Signed Sampler:
Filtered Metals Collected: Y (N) Filter Size:
Sample Observations: CLEAR / SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: SULFATE BY IC

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER

WELL NUMBER MW-45

SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-45
Field Crew: TH, AD
Well Depth (ft): 14.45
DTW (ft): 13.52
Water Column (ft): 0.93
Well Diameter (in): 2"
Gal. Per ft: 0.163
Well volume (gal): 0.152
Depth of Screen (ft): 4'-14'

Purge
Methodology: low flow

Site: LEWIS DRIVE / ANDER MORGAN
Date: 9-17-19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
(2")	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045657
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 014702

PID reading: opening well 0.0 after venting, if initially high 0.0 middle of sampling 0.0 closing well 0.0

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0900	13.75	150	.15	4.94	20.0	0.044	182.4	1.78	30.08	SLIGHT TURBIDITY
0905	13.81	100	.25	4.81	20.1	0.038	181.0	0.79	9.28	CLEAR/SLIGHT ODOR
0910	13.84	100	.50	4.68	20.3	0.038	188.2	0.68	92.58	CLEAR/SLIGHT ODOR
0915	13.87	100	.75	4.64	20.2	0.037	192.9	0.70	7.78	"
0920	13.89	100	.90	4.56	20.4	0.037	197.7	1.01	11.04	"
0925	13.92	100	1.00	4.54	20.4	0.036	204.2	1.23	23.96	"
0930	13.95	100	1.15	4.52	20.4	0.836	207.2	1.39	27.84	"
0935	13.97	100	1.25	4.50	20.5	0.036	2139	~~213.7~~	47.37	" DO = 1.6
0940	13.98	100	1.45	4.49	20.6	0.036	216.3	1.72	47.60	
0945	14.02	100	1.60	4.45	21.3	0.037	218.3	1.73	55.28	

Remarks: BEGAN TURBID CLEARED UP QUICK. @ 0910 SEDIMENT ENTERED FLOW THRU CELL. CLEARED UP QUICKLY AFTER. BUBBLES IN LINE MAY BE EFFECTING THE NTU. WATER LOOKS CLEAR

MW-45-091719

SAMPLING INFORMATION:

Depth to Water Before Sampling: 13.52
Depth sample was acquired: 14.20
Sample Methodology: LOW FLOW
Sample Date/Time: 9-17-19 / 0950
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: —
Sample Observations: CLEAR SLIGHT ODOR. NTU MAY NOT BE ACCURATE. VISUALLY LOOKED LOWER
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(1)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-08

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 09/18/19	Well Depth (ft): 19.84
Well Number: MW-08	DTW (ft): 17.16
Field Crew: MW, AD, CS,	Water Column (ft): 2.68

Remarks: TOP WEIGHT

MW-08-091819

SAMPLING INFORMATION:

Depth sample was acquired: 18 ft

Sample Date/Time: 09/18/19 @ 0835

Signed Sampler: Melissa Allen

Sample Observations: TURBID HAY COLOR W/ SEDIMENT / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-18

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 09/18/19	Well Depth (ft): 20.11
Well Number: MW-18	DTW (ft): 15.78
Field Crew: MW, AD, CS	Water Column (ft): 4.33

Remarks:

MW-18-091819

SAMPLING INFORMATION:

Depth sample was acquired: 18 Ft

Sample Date/Time: 09/18/19 @ 0850

Signed Sampler: Melissa Allen

Sample Observations: TURBID RED / STRONG ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-16

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 09/18/19	Well Depth (ft): 20.58
Well Number: MW-16	DTW (ft): 14.97
Field Crew: MW, AD, CS	Water Column (ft): 5.61

Remarks: SLIGHT

MW-16-091819

SAMPLING INFORMATION:

Depth sample was acquired: 17 ft

Sample Date/Time: 09/18/19 @ 0900

Signed Sampler: Melissa Allen

Sample Observations: SLIGHT ODOR / CLEAR W/ ORANGE FLOC

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-06B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 09/18/19
Well Number: MW-06B
Field Crew: MW, AD, CS
Well Depth (ft): 85.61
DTW (ft): 13.52
Water Column (ft): 72.09
Remarks: HEAVY WEIGHT

MW-06B-091819

SAMPLING INFORMATION:

Depth sample was acquired: 75 Ft
Sample Date/Time: 09/18/19 @ 0910
Signed Sampler: Melissa Ulam
Sample Observations: Clear no odor
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-06

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 09/18/19
Well Number: MW-06
Field Crew: MW, AD, CS
Well Depth (ft): 19.39
DTW (ft): 13.73
Water Column (ft): 5.66
Remarks:

MW-06-091819

SAMPLING INFORMATION:

Depth sample was acquired: 16 Ft
Sample Date/Time: 09/18/19 @ ~~0920~~ 0920
Signed Sampler: Melissa Ulam
Sample Observations: Iron floc
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-09B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 09/18/19
Well Number: MW-09B
Field Crew: MW, AD, CS
Well Depth (ft): 151.00
DTW (ft): 15.49
Water Column (ft): 135.51
Remarks: HEAVY WEIGHT

MW-09B-091819

SAMPLING INFORMATION:

Depth sample was acquired: 140 Ft
Sample Date/Time: 09/18/19 @ 0935
Signed Sampler: Melissa Ulam
Sample Observations: Clear no odor
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-09

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 09/18/19
Well Number: MW-09
Field Crew: MW, AD, CS
Well Depth (ft): 20.21
DTW (ft): 13.30
Water Column (ft): 6.91
Remarks: MW-09-091819

SAMPLING INFORMATION:

Depth sample was acquired: 16 Ft
Sample Date/Time: 09/18/19 @ 0940
Signed Sampler: [signature]
Sample Observations: Clear no odor
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-02B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 09/18/19
Well Number: MW-02B
Field Crew: MW, AD, CS
Well Depth (ft): 81.72
DTW (ft): 22.23
Water Column (ft): 59.49
Remarks: HEAVY WEIGHT MW-02B-091819

SAMPLING INFORMATION:

Depth sample was acquired: 75 Ft
Sample Date/Time: 09/18/19 @ 1015
Signed Sampler: [signature]
Sample Observations: Clear no odor
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-02

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 09/18/19
Well Number: MW-02
Field Crew: MW, AD, CS
Well Depth (ft): 20.58
DTW (ft): 14.63
Water Column (ft): 5.95
Remarks: MW-02-091819

SAMPLING INFORMATION:

Depth sample was acquired: 17 Ft
Sample Date/Time: 09/18/19 @ 1020
Signed Sampler: [signature]
Sample Observations: Clear no odor
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-05

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 09/18/19
Well Number: MW-05
Field Crew: MW, AD, CS
Remarks: TOP WEIGHT

Well Depth (ft): 19.90
DTW (ft): 16.50
Water Column (ft): 3.4

MW-05-091819

SAMPLING INFORMATION:

Depth sample was acquired: 17 Ft
Sample Date/Time: 09/18/19 - 1100
Signed Sampler: [signature]
Sample Observations: clear no odor
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-04

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 09/18/19
Well Number: MW-04
Field Crew: MW, AD, CS
Remarks:

Well Depth (ft): 19.56
DTW (ft): 14.48
Water Column (ft): 5.08

MW-04-091819

SAMPLING INFORMATION:

Depth sample was acquired: 17 Ft
Sample Date/Time: 09/18/19 - 1050
Signed Sampler: [signature]
Sample Observations: Clear no odor
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW MW-32

WELL NUMBER: ~~MW-03~~ (MW) MW-~~30~~ 32

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 09/18/19
Well Number: MW-32
Field Crew: MW, AD, CS
Remarks:

Well Depth (ft): 28.85
DTW (ft): 21.05
Water Column (ft): 7.8

MW-32-091819

SAMPLING INFORMATION:

Depth sample was acquired: 24 Ft
Sample Date/Time: 09/18/19 - 1130
Signed Sampler: [signature]
Sample Observations: CLEAR, NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-10

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/18/19	Well Depth (ft):	23.21
Well Number:	MW-10	DTW (ft):	19.95
Field Crew:	AD, MW, CS	Water Column (ft):	3.26

Remarks: TOP WEIGHT

MW-10-091819

SAMPLING INFORMATION:

Depth sample was acquired: 20 ft
Sample Date/Time: 09/18/19 @ 1145
Signed Sampler:
Sample Observations: CLEAR / SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-47

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/18/19	Well Depth (ft):	22.86
Well Number:	MW-47	DTW (ft):	19.29
Field Crew:	MW, AD, CS	Water Column (ft):	3.57

Remarks: TOP WEIGHT

MW-47-091819

SAMPLING INFORMATION:

Depth sample was acquired: 20 ft
Sample Date/Time: 09/18/19 @
Signed Sampler:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-31

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/18/19	Well Depth (ft):	28.03
Well Number:	MW-31	DTW (ft):	21.63
Field Crew:	MW, AD, CS	Water Column (ft):	6.40

Remarks:

MW-31-091819

SAMPLING INFORMATION:

Depth sample was acquired: 25 ft
Sample Date/Time: 09/18/19 @ 1430
Signed Sampler:
Sample Observations: LIGHT PINK HUE / SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-33T

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 09/18/19
Well Number: MW-33T
Field Crew: MW, AD, CS
Well Depth (ft): 99.89
DTW (ft): 22.90
Water Column (ft): 76.99
Remarks:

MW-33T-091819

SAMPLING INFORMATION:

Depth sample was acquired: 90 Ft
Sample Date/Time: 09/18/19 @ 1440
Signed Sampler:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-50B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 09/18/19
Well Number: MW-50B
Field Crew: MW, AD, CS
Well Depth (ft): 102.20
DTW (ft): 23.59
Water Column (ft): 78.61
Remarks:

MW-50B-091819

SAMPLING INFORMATION:

Depth sample was acquired: 100 Ft
Sample Date/Time: 09/18/19 @ 1450
Signed Sampler:
Sample Observations: TURBID, BROWN FLOC / STRONG ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-13B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 09/18/19
Well Number: MW-13B
Field Crew: MW, AD
Well Depth (ft): 55.05
DTW (ft): 23.23
Water Column (ft): 31.82
Remarks:

MW-13B-091819

SAMPLING INFORMATION:

Depth sample was acquired: 52 Ft
Sample Date/Time: 09/18/19 @ 1510
Signed Sampler:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-14B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/18/19	Well Depth (ft):	85.34
Well Number:	MW-14B	DTW (ft):	18.26
Field Crew:	MW, AD	Water Column (ft):	67.08

Remarks: MW-14B-091819

SAMPLING INFORMATION:

Depth sample was acquired:	72 ft
Sample Date/Time:	09/18/19 @ 1520
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-14

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/18/19	Well Depth (ft):	22.22
Well Number:	MW-14	DTW (ft):	17.45
Field Crew:	MW, AD	Water Column (ft):	4.77

Remarks: MW-14-091819

SAMPLING INFORMATION:

Depth sample was acquired:	19 ft
Sample Date/Time:	09/18/19 @ 1530
Signed Sampler:	
Sample Observations:	CLEAR / SLIGHT ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-48B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/18/19	Well Depth (ft):	74.07
Well Number:	MW-48B	DTW (ft):	18.02
Field Crew:	MW, AD	Water Column (ft):	56.05

Remarks: MW-48B-091819

SAMPLING INFORMATION:

Depth sample was acquired:	80 ft
Sample Date/Time:	09/18/19 @ 1445
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

(1)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-29

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	14.95
Well Number:	MW-29	DTW (ft):	10.35
Field Crew:	MW, AD, TH, CS	Water Column (ft):	4.60

Remarks:

MW-29-091919

SAMPLING INFORMATION:

Depth sample was acquired:	12 Ft
Sample Date/Time:	09/19/19 @ 0850
Signed Sampler:	Melissa Ulmer
Sample Observations:	TURBID / SLIGHT ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-26

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	17.12
Well Number:	MW-26	DTW (ft):	7.23
Field Crew:	MW, AD, TH, CS	Water Column (ft):	9.89

Remarks:

~~MW-26-091919~~ MW-26-091919

SAMPLING INFORMATION:

Depth sample was acquired:	12 Ft
Sample Date/Time:	09/19/19 @ 0910
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-26B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	41.05
Well Number:	MW-26B	DTW (ft):	8.67
Field Crew:	MW, AD, TH, CS	Water Column (ft):	32.38

Remarks:

MW-26B-091919

SAMPLING INFORMATION:

Depth sample was acquired:	30 Ft
Sample Date/Time:	09/19/19 0920
Signed Sampler:	Melissa Ulmer
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

(2)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-23

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	23.21
Well Number:	MW-23	DTW (ft):	10.27
Field Crew:	AD, CS, TH, MW	Water Column (ft):	12.94

Remarks:

☆DUPLICATE☆ MW-23-091919 MW-23-D-091919

SAMPLING INFORMATION:

Depth sample was acquired:	09/19/19 @ ~~0930~~ 0935 AND 0935
Sample Date/Time:	17 Ft
Signed Sampler:	
Sample Observations:	CLEAR / SLIGHT ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-23B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	53.43
Well Number:	MW-23B	DTW (ft):	7.65
Field Crew:	MW, AD, CS, TH	Water Column (ft):	45.8

Remarks:

MW-23B-091919

SAMPLING INFORMATION:

Depth sample was acquired:	45 Ft
Sample Date/Time:	09/19/19 @ 0945
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-45B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	21.96
Well Number:	MW-45B	DTW (ft):	14.01
Field Crew:	MW, AD, CS, TH	Water Column (ft):	7.95

Remarks:

MW-45B-091919

SAMPLING INFORMATION:

Depth sample was acquired:	20 Ft
Sample Date/Time:	09/19/19 @ ~~0945~~ (MW) 0955
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-21

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 09/19/19	Well Depth (ft): 20.66
Well Number: MW-21	DTW (ft): 16.11
Field Crew: MW, CS, TH, AD	Water Column (ft): 4.55

Remarks:

MW-21-091919

SAMPLING INFORMATION:

Depth sample was acquired: 17.5ft

Sample Date/Time: 09/19/19 @ 1010

Signed Sampler:

Sample Observations: CLEAR / SLIGHT ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-17B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 09/19/19	Well Depth (ft): 27.42
Well Number: MW-17B	DTW (ft): 15.31
Field Crew: MW, TH, AD, CS	Water Column (ft): 12.11

Remarks:

MW-17B-091919

SAMPLING INFORMATION:

Depth sample was acquired: 23ft

Sample Date/Time: 09/19/19 @ 1025

Signed Sampler:

Sample Observations: STRONG ODOR / WHITE FLOATING PARTICULATES / CLEAR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-44B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 09/19/19	Well Depth (ft): 34.54
Well Number: MW-44B	DTW (ft): 13.60
Field Crew: TH, AD, CS, MW	Water Column (ft): 20.94

Remarks:

MW-44B-091919

SAMPLING INFORMATION:

Depth sample was acquired: 30ft

Sample Date/Time: 09/19/19 @ 1050

Signed Sampler:

Sample Observations: TURBID / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(4)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-01

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	16.58
Well Number:	MW-01	DTW (ft):	12.08
Field Crew:	MW, TH, AD, CS	Water Column (ft):	4.50

Remarks:

MW-01-091919

SAMPLING INFORMATION:

Depth sample was acquired:	13 ft			
Sample Date/Time:	09/19/19 @ 1100			
Signed Sampler:				
Sample Observations:	CLEAR / NO ODOR			
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-01B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	44.52
Well Number:	MW-01B	DTW (ft):	11.78
Field Crew:	MW, TH, AD, CS	Water Column (ft):	32.74

Remarks:

MW-01B-091919

SAMPLING INFORMATION:

Depth sample was acquired:	30 ft			
Sample Date/Time:	09/19/19 @ 1110			
Signed Sampler:				
Sample Observations:	CLEAR / NO ODOR			
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-27

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	29.58
Well Number:	MW-27	DTW (ft):	26.95
Field Crew:	MW, TH, AD, CS	Water Column (ft):	2.63

Remarks:

☆ TOP WEIGHT

MW-27-091919

SAMPLING INFORMATION:

Depth sample was acquired:	27 ft			
Sample Date/Time:	09/19/19 @ 1120			
Signed Sampler:				
Sample Observations:	CLEAR / SLIGHT ODOR			
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

(5)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-27B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	50.50
Well Number:	MW-27B	DTW (ft):	26.33
Field Crew:	MW, TH, AD, CS	Water Column (ft):	24.17

Remarks:

MW-27B-091919

SAMPLING INFORMATION:

Depth sample was acquired:	40 Ft
Sample Date/Time:	09/19/19 @
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-11 ☆

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	~~29.82~~ 32.40
Well Number:	MW-11	DTW (ft):	29.82
Field Crew:	MW, AD, TH, CS	Water Column (ft):	2.58

Remarks:

☆ TOP WEIGHT ☆ MW-11-091919 ☆ DILUTE ☆

SAMPLING INFORMATION:

Depth sample was acquired:	~~30 Ft~~ 30 Ft
Sample Date/Time:	09/19/19 @ 1515
Signed Sampler:	
Sample Observations:	TURBID / STRONG ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-12

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	21.03
Well Number:	MW-12	DTW (ft):	14.67
Field Crew:	MW, TH, AD, CS	Water Column (ft):	6.36

Remarks:

MW-12-091919

SAMPLING INFORMATION:

Depth sample was acquired:	18 Ft
Sample Date/Time:	09/19/19 @ 1330
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-12B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	44.31
Well Number:	MW-12B	DTW (ft):	14.59
Field Crew:	MW, TH, AD, CS	Water Column (ft):	29.72

Remarks:

MW-12B-091919

SAMPLING INFORMATION:

Depth sample was acquired:	35 ft
Sample Date/Time:	09/19/19 @ 1335
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-25

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	18.08
Well Number:	MW-25	DTW (ft):	8.47
Field Crew:	MW, AD, CS, TH	Water Column (ft):	9.61

Remarks:

MW-25-091919

SAMPLING INFORMATION:

Depth sample was acquired:	12 ft
Sample Date/Time:	09/19/19 @ 1345
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-25B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	53.13
Well Number:	MW-25B	DTW (ft):	4.46
Field Crew:	MW, CS, TH, AD	Water Column (ft):	48.67

Remarks:

MW-25B-091919

SAMPLING INFORMATION:

Depth sample was acquired:	50 ft
Sample Date/Time:	09/19/19 @ 1350
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

(7)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-42

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	13.39
Well Number:	MW-42	DTW (ft):	4.44
Field Crew:	MW, TH, AD, CS	Water Column (ft):	8.95

Remarks:

MW-42-091919

SAMPLING INFORMATION:

Depth sample was acquired:	10 ft			
Sample Date/Time:	09/19/19 @ 1455			
Signed Sampler:				
Sample Observations:	CLEAR / NO ODOR			
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-41

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	13.19
Well Number:	MW-41	DTW (ft):	4.45
Field Crew:	MW, TH, AD, CS	Water Column (ft):	8.74

Remarks:

* DUPLICATE @ 1445 MW-41-091919 MW-41-D-091919

SAMPLING INFORMATION:

Depth sample was acquired:	9 ft			
Sample Date/Time:	09/19/19 @ 1440			
Signed Sampler:				
Sample Observations:	CLEAR / NO ODOR			
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-40

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	13.15
Well Number:	MW-40	DTW (ft):	2.72
Field Crew:	MW, TH, CS, AD	Water Column (ft):	10.43

Remarks:

MW-40-091919

SAMPLING INFORMATION:

Depth sample was acquired:	10 ft			
Sample Date/Time:	09/19/19 @ 1435			
Signed Sampler:				
Sample Observations:	CLEAR / NO ODOR			
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

(8)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-39

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft): 13.03
Well Number:	MW-39	DTW (ft): 5.21
Field Crew:	MW, TH, AD, CS	Water Column (ft): 7.82
Remarks:		

MW-39-091919

SAMPLING INFORMATION:

Depth sample was acquired:	9 ft
Sample Date/Time:	09/19/19 @ 1430
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-34

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft): 7.82
Well Number:	MW-34	DTW (ft): 3.36
Field Crew:	MW, TH, AD, CS	Water Column (ft): 4.46
Remarks:		

MW-34-091919

SAMPLING INFORMATION:

Depth sample was acquired:	5 ft
Sample Date/Time:	09/19/19 @ 1425
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-15

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft): 19.18
Well Number:	MW-15	DTW (ft): 11.56
Field Crew:	MW, CS, TH, AD	Water Column (ft): 7.62
Remarks:		

MW-15-091919

SAMPLING INFORMATION:

Depth sample was acquired:	13 ft
Sample Date/Time:	09/19/19 @ 1405
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-15B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	80.90
Well Number:	MW-15B	DTW (ft):	15.68
Field Crew:	MW, TH, AD, CS	Water Column (ft):	65.22

Remarks:

MW-15B-091919

SAMPLING INFORMATION:

Depth sample was acquired:	70 ft
Sample Date/Time:	09/19/19 @ 1420
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-36

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	23.84
Well Number:	MW-36	DTW (ft):	18.22
Field Crew:	MW, TH, AD, CS	Water Column (ft):	5.62

Remarks:

DUPLICATE MW-36-091919 MW-36-D-091919

SAMPLING INFORMATION:

Depth sample was acquired:	22 ft
Sample Date/Time:	09/19/19 @ 1535 DUP @ 1540
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-36B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	09/19/19	Well Depth (ft):	42.81
Well Number:	MW-36B	DTW (ft):	17.94
Field Crew:	MW, TH, AD, CS	Water Column (ft):	24.87

Remarks:

MW-36B-091919

SAMPLING INFORMATION:

Depth sample was acquired:	22 ft
Sample Date/Time:	09/19/19 @ 1545
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER	WELL NUMBER MW-07 SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	MW-07	Site:	LEWIS DRIVE
Field Crew:	MW, CS	Date:	09/17/19
Well Depth (ft):	~~14.34~~ 13.81	Purge	
DTW (ft):	12.81	Methodology: low flow	
Water Column (ft):	1.0		
Well Diameter (in):	2		
Gal. Per ft:	0.163		
Well volume (gal):	0.163		
Depth of Screen (ft):	3 ft - 13.5 ft		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
(2")	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 033622

Pump type (please circle): (Peristaltic) Bladder

Pump serial number: 031271

PID reading: opening well 182.5 after venting, if initially high 115.0 middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0900	START	PUMP								CLEAR.
0915	13.53	NO LOW FLOW PARAMETERS COULD BE COLLECTED DUE TO AIR BUBBLES THROUGHOUT TUBING DURING DRAWDOWN OF GROUNDWATER. TEAM WILL WAIT FOR WELL TO RECHARGE BEFORE COLLECTING THE SAMPLE WITH A BAILER. THE ORIGINAL TOTAL DEPTH WAS MEASURED AT 14.34; HOWEVER, ONCE AIR BUBBLES WERE OBSERVED, THE TOTAL DEPTH WAS REMEASURED TO 13.81. 0.12 GALLONS WAS PURGED INTO BUCKET BEFORE WELL BECAME DRY.								
0747	ON 09/18/19	DTP = 12.85					DTW = 12.86			
0950	ON 09/19/19	DTP = 12.89					DTW = 12.90			
0950	COLLECT	[MW-07-091919]								

09/19/19

Remarks: SEE NOTES ABOVE

[MW-07-091819]

SAMPLING INFORMATION:

Depth to Water Before Sampling: 12.90 Depth sample was acquired: 13.5 ft

Sample Methodology: LOW FLOW / BAILER

Sample Date/Time: 09/19/19 @ 0950

Signed Sampler:

Filtered Metals Collected: Y / (N) Filter Size: NA

Sample Observations: CLEAR TO TURBID / SLIGHT ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-20

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 11-4-19	Well Depth (ft): 19.0
Well Number: MW-20	DTW (ft): 13.09
Field Crew: TH, CS, AF	Water Column (ft): 5.91

Remarks: PRODUCT PRESENT IN HYDRASLEEVE. WILL CONFIRM WITH BAILER
BUBBLING FROM CAP UPON ARRIVAL

SAMPLING INFORMATION:

Depth sample was acquired:	5 ft bgs
Sample Date/Time:	11-4-19 / 1055
Signed Sampler:	
Sample Observations:	CLEAR / STRONG ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-26

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 11-4-19	Well Depth (ft): 15.0
Well Number: MW-26	DTW (ft): 7.98
Field Crew: TH, CS, AF	Water Column (ft): 7.02

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	12 ft
Sample Date/Time:	11-4-19 / 1120
Signed Sampler:	
Sample Observations:	CLEAR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-07

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 11-4-19	Well Depth (ft): 13.50
Well Number: MW-07	DTW (ft): 13.23
Field Crew: TH, CS, AF	Water Column (ft): 0.27

Remarks: NOT SAMPLED WITH HS. WILL LOW FLOW

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	11-4-19
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-41

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	11-4-19 14:35	Well Depth (ft):	11.0
Well Number:	MW-41	DTW (ft):	4.35
Field Crew:	TH, ES, AF	Water Column (ft):	6.65

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	8
Sample Date/Time:	11-4-19 / 1435
Signed Sampler:	
Sample Observations:	CLEAR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-36

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	11-4-19 14:05	Well Depth (ft):	24.5
Well Number:	MW-36	DTW (ft):	~~21.40~~ 19.84
Field Crew:	TH, ES, AF	Water Column (ft):	4.66

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	21.0
Sample Date/Time:	11-4-19 / 1405
Signed Sampler:	
Sample Observations:	~~25~~ ~~22~~ CLEAR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-55

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	11-4-19 13:55	Well Depth (ft):	25.2
Well Number:	MW-55	DTW (ft):	21.46
Field Crew:	TH, ES, AF	Water Column (ft):	3.74

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	25
Sample Date/Time:	11-4-19 / 1355
Signed Sampler:	
Sample Observations:	TURBID / BROWN
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-51

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	11-4-19 12:35	Well Depth (ft):	22.5
Well Number:	MW-51	DTW (ft):	18.80
Field Crew:	TH, CS, AF	Water Column (ft):	3.70

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired: 20

Sample Date/Time: 11-4-19/1235

Signed Sampler:

Sample Observations: CLEAR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-52

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	11-4-19 12:25	Well Depth (ft):	28.5
Well Number:	MW-52	DTW (ft):	17.19
Field Crew:	TH, CS, AF	Water Column (ft):	11.31

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired: 22

Sample Date/Time: 11-4-19/1225

Signed Sampler:

Sample Observations: CLEAR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-53

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	11-4-19 12:10	Well Depth (ft):	21.8
Well Number:	MW-53	DTW (ft):	13.19
Field Crew:	TH, AF, CS	Water Column (ft):	34.49

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired: 17 ft.

Sample Date/Time: 11-4-19/1210

Signed Sampler:

Sample Observations: TURBID

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-54

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 11-4-19 12:00	Well Depth (ft): 75.2
Well Number: MW-54	DTW (ft): 15.44
Field Crew: TH, CS, AF	Water Column (ft): 9.76
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired: 20 Ft	
Sample Date/Time: 11-4-19 / 1700	
Signed Sampler:	
Sample Observations: TURBID	
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:	

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-39

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 11-4-19 14:50	Well Depth (ft): 11.0
Well Number: MW-39	DTW (ft): 5.06
Field Crew: TH, CS, AF	Water Column (ft): 5.94
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired: 8 Ft	
Sample Date/Time: 11-4-19 / 1450	
Signed Sampler:	
Sample Observations: CLEAR	
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:	

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date:	Well Depth (ft):
Well Number:	DTW (ft):
Field Crew:	Water Column (ft):
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle): VOCs SVOCs Dissolved Metals Other:	

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400

WELL NUMBER MW-57

SHEET ~~1 OF 5~~ (TH) 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-57	Site: Penn. S. Dive		
Field Crew: C. Sutton	Date: 11/5/19		
Well Depth (ft): 17.6 Purge	Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
DTW (ft): 10.47 Methodology: low flow	2"	0.163	5"	1.02
Water Column (ft): 7.13	3"	0.367	6"	1.469
Well Diameter (in): 2	4"	0.653	8"	2.611
Gal. Per ft: 0.163	Water level indicator, serial number: 16788		
Well volume (gal): 1.162	Pump type (please circle): (Peristaltic) Bladder		
Depth of Screen (ft): 13.9	Pump serial number: G19004391		

PID reading: 0.3 opening well ____ after venting, if initially high ____ middle of sampling 0.00 closing well 0.00

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1410	10.47	202	0	4.78	18.8	975	374.6	0.80	44.03	Clear / no odor
1420	10.57		0.75	4.78	18.2	885	422.1	0.37	50.02	
1425	10.58		1.0	4.79	18.4	870	350.8	0.31	56.65	
1430	10.58		1.20	4.78	18.3	859	408.2	0.29	66.70	
1435	10.60		1.50	4.78	18.3	855	423.6	0.29	95.16	
1440	10.60		2.0	4.77	18.3	848	431.2	0.29	86.21	
1445	10.61		2.28	4.77	18.4	847	435.6	0.29	46.31	
1450	10.61		2.55	4.77	18.3	843	439.0	0.28	19.20	
1455	10.62		2.95	4.77	18.3	849	443.3	0.29	26.66	
1500	10.61		3.40	4.76	18.3	851	445.6	0.31	26.85	
1505	10.61		3.55	4.76	18.4	857	447.6	0.29	25.17	
1510	Sample collected					MW-57-20 11051				
1515	Sample collected					MW-57-D-11051				

11/5/19

Remarks:

Duplicate collected at 1515

SAMPLING INFORMATION:

Depth to Water Before Sampling: 10.47 Depth sample was acquired: 12 ft

Sample Methodology: low flow

Sample Date/Time: 11/5/19 / 1510

Signed Sampler:

Filtered Metals Collected: Y (N) Filter Size: —

Sample Observations: N/A

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: D3161400

WELL NUMBER: MW-56

SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	MW-56
Field Crew:	C. Sutton
Well Depth (ft):	~~14.3~~ 17.6 Purge
DTW (ft):	8.51 Methodology: low flow
Water Column (ft):	5.79
Well Diameter (in):	2
Gal. Per ft:	0.163
Well volume (gal):	0.944
Depth of Screen (ft):	14.3

Site:	Lewis Drive
Date:	11/5/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 16788

Pump type (please circle): Peristaltic Bladder

Pump serial number: B1900431

PID reading: 0.02 opening well; after venting, if initially high; middle of sampling 0.02; closing well 0.01

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1122	8.51	166	0	5.14	19.3	36.2	149.3	16.66	33.53	Initial - Clear/no odor
1135	9.30	166	0.75	5.07	19.1	97.8	257.9	17.92	14.10	Clear/no odor
1140	9.23		1.0	5.08	19.2	52.8	252.6	18.08	23.96	
1145	9.25		1.25	5.02	19.1	98.3	278.4	17.67	24.89	
1150	9.27		1.50	5.09	19.1	112.9	271.9	18.50	24.78	
1155	9.28		1.75	5.01	19.1	126.7	309.9	18.80	23.09	
1200	9.29		2.0	5.01	19.2	136.6	325.9	19.26	22.68	
1205	9.30		2.25	5.00	19.1	152.2	349.0	19.70	21.40	
1210	9.31		2.50	5.01	19.1	162.2	324.9	20.30	18.91	
1215	9.32		2.75	4.99	17.2	171.6	365.8	20.64	21.78	
1220	9.33		3.0	4.99	19.2	174.5	276.3	20.78	27.14	
Well parameters not stabilizing, Sampled after 3 well volumes removed (~2.82 gallons)										
1220	Collected Sample MW-56 - 110519									

11/05/19

Remarks:

Parameters did not stabilize, Sample collected after 3 well volumes

SAMPLING INFORMATION:

Depth to Water Before Sampling:	8.51 Ft
Depth sample was acquired:	12 Ft
Sample Methodology:	low flow
Sample Date/Time:	11/5/19 / 1220
Signed Sampler:	
Filtered Metals Collected:	Y / N Filter Size: ✓
Sample Observations:	Clear/no odor
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: D3161400

WELL NUMBER: MW-07

SHEET: 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	MW-07	Site:	KM Lewis Drive
Field Crew:	C. Sutton	Date:	11/5/19
Well Depth (ft):	13.5	Purge	
DTW (ft):	13.22	Methodology: low flow	
Water Column (ft):	0.28		
Well Diameter (in):	2		
Gal. Per ft:	0.163		
Well volume (gal):	0.046		
Depth of Screen (ft):	13.5		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 16788

Pump type (please circle): Peristaltic Bladder

Pump serial number: G19004391

PID reading: opening well 553.9 after venting, if initially high 35.6 middle of sampling 46.5 closing well 63.3

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1010	13.5	—	—	5.68	21.2	101.5	24.6	0.75	36501	Dry before flow through cell was full
1015	13.24									

Intentionally left blank

11/5/19

Remarks: well was dry, no sample collected

SAMPLING INFORMATION:

Depth to Water Before Sampling:	13.22
Depth sample was acquired:	N/A
Sample Methodology:	low flow
Sample Date/Time:	11/5/19 - No sample
Signed Sampler:	
Filtered Metals Collected:	Y / N
Filter Size:	
Sample Observations:	Sample not collected
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other: No Sample

Attachment D; Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400

WELL NUMBER MW-37

SHEET ~~4~~ 5 OF 5 (RH) 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	MW-37
Field Crew:	A. FARNESS, T.HALL
Well Depth (ft):	18.03
DTW (ft):	3.38
Water Column (ft):	14.65
Well Diameter (in):	2
Gal. Per ft:	0.163
Well volume (gal):	2.39
Depth of Screen (ft):	15 FT

Purge Methodology: low flow

Site: LEWIS DRIVE

Date: 11-5-19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
(2")	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 41957

Pump type (please circle): (Peristaltic) Bladder

Pump serial number: 042904

PID reading: 0.0 opening well 0.0 after venting, if initially high 0.0 middle of sampling 0.0 closing well 0.0

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1420	3.46	200	.50	5.34	17.7	.041	204.4	1.51	18.60	CLEAR/NO ODOR
1425	3.46	200	.75	5.30	17.8	.041	210.4	1.47	23.66	"
1430	3.46	200	1.10	5.29	17.8	.041	219.9	1.43	12.55	"
1435	3.46	200	1.50	5.28	17.9	.041	225.6	1.37	9.04	"
1440	3.46	200	1.75	5.28	17.9	.041	227.8	1.37	8.12	"
1445	3.46	200	2.00	5.29	17.9	.041	230.6	1.34	7.58	"

11-5-19

Remarks:

SAMPLING INFORMATION:

Depth to Water Before Sampling:	3.46
Depth sample was acquired:	12 FT
Sample Methodology:	STRAW
Sample Date/Time:	11-05-19 / 1450
Signed Sampler:	
Filtered Metals Collected:	Y (N) Filter Size: N/A
Sample Observations:	CLEAR/NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER 03161400

WELL NUMBER MW-38

SHEET ~~5~~ OF ~~5~~ 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-38	Site: LEWIS DRIVE		
Field Crew: TH AF	Date: 11-5-19		
Well Depth (ft): 11.51 Purge	Diameter	Gal. Per Foot	Diameter / Gal. Per Foot
DTW (ft): 1.62 Methodology: low flow	2"	0.163	5" 1.02
Water Column (ft): 9.89	3"	0.367	6" 1.469
Well Diameter (in): 2	4"	0.653	8" 2.611
Gal. Per ft: 0.163	Water level indicator, serial number: 41957		
Well volume (gal): 1.61	Pump type (please circle):	(Peristaltic)	Bladder
Depth of Screen (ft): 9 Ft	Pump serial number: 042904		

PID reading: opening well 0.1 after venting, if initially high 0.0 middle of sampling 0.0 closing well 0.0

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1510	1.98	200	.20	5.17	18.10	.116	256.9	0.98	2.54	CLEAR/NO ODOR
1515	1.98	200	.50	5.18	18.39	.111	263.7	0.92	2.04	"
1520	1.98	200	.75	5.18	18.49	.108	268.7	0.91	2.00	"
1525	1.98	200	1.00	5.19	18.59	.107	274.3	0.87	1.96	"
1530	1.98	200	1.20	5.19	18.6	.106	279.3	0.87	1.89	"

11-5-19

Remarks:

SAMPLING INFORMATION:

Depth to Water Before Sampling: 1.98 Depth sample was acquired: 7 Ft

Sample Methodology: STRAW

Sample Date/Time: 11-5-19/1535

Signed Sampler:

Filtered Metals Collected: Y (N) Filter Size: N/A

Sample Observations: CLEAR/NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400

WELL NUMBER

SHEET 1 OF 2

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-15B
Field Crew: TH CS AF
Well Depth (ft): 77.9 Purge
DTW (ft): 15.96 Methodology: typhoon
Water Column (ft): 61.94
Well Diameter (in): 6
Gal. Per ft: 1.469
Well volume (gal): 42.02
Depth of Screen (ft): 10.00

Site: Lewis Drive
Date: 11/6/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 41957
Pump type Typhoon
Pump serial #: 030258 Control Box # 037057

PID reading: opening well 54.3 after venting, if initially high 0.4 middle of sampling 0.0 closing well 0.0

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1010	29.31	2	~~1020~~	8.66	17.8	0.114	128.9	3.48	10.80	STRONG ODOR/DARK COLOR
1015	35.27	2	~~2030~~	9.16	17.7	0.095	119.7	3.09	8.76	CLEARING UP/ODOR STRONG
1020	39.64	2	~~3040~~	9.16	18.0	0.058	131.7	3.83	7.48	clear/odor strong
1025	42.97	2	50	9.22	18.0	0.120	141.3	3.24	10.19	dark color/odor strong
1030	46.91	2	60	9.14	18.0	0.119	157.1	2.48	6.71	light color/odor strong
1035	49.95	2	70	9.17	17.9	0.120	163.3	5.51	7.32	light color/odor strong
1040	52.98	2	80	9.15	18.4	0.121	164.1	3.96	6.16	light color/odor strong
1045	54.52	2	90	9.22	18.5	0.119	160.0	6.24	5.70	light color/odor strong
1050	56.39	2	100	9.45	18.7	0.120	146.0	5.00	5.43	light color/odor strong
1055	57.23	PUMP	STOPPED PUMPING, PUMP DOWN FOR 5 MINS.							
1100	57.71									
1105										
1110	60.40	2	110	9.49	19.4	0.124	158.0	4.92	30.05	dark color/strong odor
1115	61.68	1	115	9.48	19.5	0.123	167.6	7.47	32.17	dark color/strong odor
1120	63.79	1	120	9.40	19.2	0.124	155.1	4.71	22.05	dark color/strong odor
1125	66.44	1	125	9.32	18.9	0.119	142.0	3.49	15.73	dark color/strong odor
1130	67.89	1	130	9.20	19.0	0.121	157.3	3.91	16.19	dark color/strong odor
1135	69.85	1	135	9.12	19.1	0120	156.7	5.78	13.70	dark color/strong odor
1140	70.61	1	140	9.15	19.6	0.123	165.8	3.73	24.58	dark color/strong odor
1145	71.29	1	145	9.22	20.6	0.124	151.4	2.95	24.18	dark color/strong odor
1150	72.01	1	150	9.36	19.6	0.123	125.1	3.62	33.4	dark color/strong odor

Remarks:

SAMPLING INFORMATION:

Depth to Water Before Sampling: 66.56 Depth sample was acquired:
Sample Methodology: BAILER
Sample Date/Time: 11-06-19/1710
Signed Sampler:
Filtered Metals Collected: Y (N) Filter Size: N/A
Sample Observations: ~~DARK BROWN/ODOR~~ (FLY) CLEAR/SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER

WELL NUMBER

SHEET 2 OF 2

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-15B
Site: Lewis Drive
Field Crew: TH CS AF
Date: 11/6/19
Well Depth (ft): 77.9
Purge
DTW (ft): 15.56
Methodology: typhoon
Water Column (ft): 61.94
Well Diameter (in): 6
Gal. Per ft: 1.469
Well volume (gal): 90.92
Depth of Screen (ft): 10

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 41957
Pump type: Typhoon
Pump serial #: 20170
Control Box # 037057

PID reading: opening well 54.3 after venting, if initially high 0.4 middle of sampling 0.0 closing well 0.0

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1155	75.60	2	160	9.22	17.9	0.176	124.0	5.06	61.7	
1158	well	ran dry								

Remarks:

SAMPLING INFORMATION:

Depth to Water Before Sampling: Depth sample was acquired:
Sample Methodology: TH
Sample Date/Time:
Signed Sampler:
Filtered Metals Collected: Y / N Filter Size:
Sample Observations:
Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

SEE FRONT

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161406

WELL NUMBER

SHEET 1 OF 1

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-34
Field Crew: TH, CS, AF
Well Depth (ft): 7.86 Purge
DTW (ft): 2.82 Methodology: typhoon
Water Column (ft): 5.04
Well Diameter (in): 2"
Gal. Per ft: 0.163
Well volume (gal): 0.82
Depth of Screen (ft): 2.50

Site: LEWIS DRIVE
Date: 11-6-19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 41957
Pump type Typhoon
Pump serial #: 030258 Control Box # 077057

PID reading: opening well 0.0 after venting, if initially high middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1330	3.88	—	0	7.66	17.5	0.044	192.0	7.51	301.25	dark color / slight odor
1334	dry		0.85	7.38	18.4	0.018	119.5	5.41	314.54	1

Remarks:
5 WELL VOLUMES = 4.11 gal
Would not pump with typhoon. Well was bailed dry. A bailer was used in place of typhoon pump

SAMPLING INFORMATION:

Depth to Water Before Sampling: 6.56 Depth sample was acquired: 6.56
Sample Methodology: BAILER
Sample Date/Time: 11-06-19 / 1720
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: N/A
Sample Observations: BROWN COLOR / SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400

WELL NUMBER

SHEET 1 OF 1

TYPHOON AND BAILER SAMPLING LOG

Well Number:	MW-40	Site:	LEWIS DRIVE
Field Crew:	TH, CS, AF	Date:	11-6-19
Well Depth (ft):	13.20	Purge	
DTW (ft):	2.82	Methodology: typhoon	
Water Column (ft):	10.38		
Well Diameter (in):	2"		
Gal. Per ft:	0.163		
Well volume (gal):	1.69		
Depth of Screen (ft):	5 ft		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 41957

Pump type

Pump serial #: 030258

Typhoon Control Box # 037057

PID reading: opening well 1.3 after venting, if initially high middle of sampling 2.6 closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
13:55	2.82		0	6.94	19.3	0.024	103.8	3.31	80.27	Dark color/ odor strong
14:05	9.85		4	6.51	19.6	0.066	110.5	5.81	130.26	dark color/odor
14:10	9.60		7	6.46	19.4	0.029	85.5	9.14	100.22	dark color/odor

Remarks: 5 WELL VOLUMES = 8.46 gal; attempted to pump with typhoon. Typhoon was not operating properly; pumped 5 well volumes with bailer and collected sample

SAMPLING INFORMATION:

Depth to Water Before Sampling:	9.60
Depth sample was acquired:	9.60
Sample Methodology:	BAILER
Sample Date/Time:	11-06-19 / 1415
Signed Sampler:	
Filtered Metals Collected:	Y / (N)
Filter Size:	N/A
Sample Observations:	DARK COLOR BROWN / ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER

WELL NUMBER

SHEET 1 OF 1

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-12B	Site: LEWIS DRIVE		
Field Crew: TH, CS, AF	Date: 11-6-19		
Well Depth (ft): 43.0	Purge	Diameter	Gal. Per Foot
DTW (ft): 15.49	Methodology: typhoon	2"	0.163
Water Column (ft): 27.51		3"	0.367
Well Diameter (in): 6"		4"	0.653
Gal. Per ft: 1.469		5"	1.02
Well volume (gal): 40.41		6"	1.469
Depth of Screen (ft): 43.0		8"	2.611

Water level indicator, serial #: 41957

Pump type: Typhoon

Pump serial #: 20170 Control Box # 037057

PID reading: opening well 0.0 after venting, if initially high 0.0 middle of sampling 0.0 closing well 0.0

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1443	15.49		0	6.68	18.4	0.032	65.8	3.51	28.46	slightly cloudy / slight odor
1450	pump quit pumping water, had to replace with different pump									
1502	16.01	2.5	10	6.25	17.0	0.066	76.6	4.82	76.74	Slightly cloudy / slight odor
1510	15.97	2.5	30	6.13	16.7	0.057	84.7	4.44	297.32	
1515	17.58	25	~~42.5~~ 45	5.81	16.6	0.053	108.3	6.32	16.21	Slightly cloudy / slight odor
1520	17.54	2.5	55	5.76	16.6	0.000	115.9	4.37	8.80	Slightly cloudy / Slight odor
1525	17.39	2.5	67.5	5.73	16.6	0.021	114.0	7.55	7.47	Slightly cloudy / slight odor
1530	17.25	2.5	80.0	5.73	16.5	0.049	122.9	5.26	8.33	clear / slight odor
1535	17.09	2.5	92.5	5.77	16.1	0.037	125.1	7.78	6.34	clear / slight odor
1540	17.00	2.5	105	5.81	16.6	0.048	118.8	6.24	7.10	clear / slight odor
1545	16.95	2.5	117.5	5.90	16.2	0.048	112.2	5.25	5.11	clear / slight odor
1550	16.83	2.5	120.0	5.77	16.2	0.040	110.7	4.42	6.33	clear / slight odor
1555	16.79	2.5	132.5	5.81	16.4	0.047	115.0	4.46	4.93	clear / slight odor
1600	16.73	2.5	145	5.76	16.5	0.047	118.6	4.76	4.63	clear / slight odor
1605	16.70	2.5	157.5	5.74	16.1	~~0.046~~ 0.046	122.8	4.86	4.10	clear / slight odor
1610	16.67	2.5	170.0	5.78	16.3	0.047	111.6	4.68	4.02	clear / slight odor
1615	16.11	2.5	182.5	5.82	16.5	0.046	116.0	4.46	2.96	clear / slight odor
1620	15.99	2.5	195	5.80	16.0	0.046	119.3	5.10	2.95	clear / slight odor
1625	16.85	2.5	207.5	5.85	16.2	0.046	112.0	4.60	5.57	Clear / slight odor

Remarks: 5 WELL VOLUMES = 202.06 gal

SAMPLING INFORMATION:

Depth to Water Before Sampling: 16.95 Depth sample was acquired:

Sample Methodology: BAILER

Sample Date/Time: 11-06-19 / 1630

Signed Sampler:

Filtered Metals Collected: Y / N Filter Size: N/A

Sample Observations: CLEAR SLIGHT ODOR

Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER

WELL NUMBER
SHEET 1 OF 1

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-23 [illegible]
Field Crew: CS AF TH
Well Depth (ft): 20
DTW (ft): 11.36
Water Column (ft): 8.64
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 1.41
Depth of Screen (ft): 20

Purge
Methodology: typhoon

Site: Lewis Drive
Date: 11/7/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 41957
Pump type: Typhoon
Pump serial #: 20170
Control Box #: 037057

PID reading: opening well 0.9 after venting, if initially high middle of sampling 0.2 closing well 0.2

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1103	11.36	1.5	0	5.51	18.7	0.045	717.7	2.44	23.10	cloudy/slight odor
1108	11.93	~~1.5~~	~~7.5~~	5.42	19.3	0.062	242.4	~~3.38~~	139.4	cloudy/slight odor
1113	11.65	0.5	7.5	5.37	19.8	0.070	263.2	4.34	10.23	clear/sl. sht odor
1113	well pumped	to	5 well	volumes						

Remarks:
5 well volumes = 7.05 gallons
field duplicate collected at 1125

SAMPLING INFORMATION:

Depth to Water Before Sampling: 11.36
Depth sample was acquired: 10-25
Sample Methodology: typhoon
Sample Date/Time: 11/7/19 1120
Signed Sampler:
Filtered Metals Collected: Y (N) Filter Size: —
Sample Observations: CLEAR / SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER

WELL NUMBER

SHEET 1 OF 1

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-17I
Field Crew: CS AF TH
Well Depth (ft): 27
DTW (ft): 16.75
Water Column (ft): 10.25
Well Diameter (in): 6
Gal. Per ft: 1.469
Well volume (gal): 15.05
Depth of Screen (ft): 27

Purge
Methodology: typhoon

Site: Lewis Drive
Date: 11/7/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 4157
Pump type: Typhoon
Pump serial #: 20170 Control Box # 037657

PID reading: opening well 487 after venting, if initially high 284.5 middle of sampling 73.8 closing well 161.8

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0925	16.75	3.5	0	6.11	19.5	0.058	107.7	6.56	2.85	clear/strong odor
0930	21.44	3.5	17.5	6.08	19.6	0.055	65.4	5.55	8.82	clear/strong odor
0935	22.18	3.5	35.0	6.28	19.6	0.121	50.7	4.60	667.0	cloudy/strong odor
0940	22.53	3.5	42.5	6.28	19.7	0.120	48.8	4.38	8.71	clear/strong odor
0945	22.80	3.5	60.0	6.29	19.8	0.057	48.0	4.57	2561	clear/strong odor
0950	22.68	3.5	77.5	6.41	19.8	0.119	42.6	4.43	5.75	clear/strong odor
0951	Well pumped to 80.0 gallons. pump shut down									

Remarks:
5 well volumes = 75.25 gal

SAMPLING INFORMATION:

Depth to Water Before Sampling: 16.75
Depth sample was acquired: 22.0 ft
Sample Methodology: typhoon
Sample Date/Time: 11/7/19 1000
Signed Sampler:
Filtered Metals Collected: Y / N
Filter Size: —
Sample Observations: CLEAR / STRONG ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER

WELL NUMBER
SHEET 1 OF 1

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-46
Field Crew: TH CS AF
Well Depth (ft): 17.1
DTW (ft): 10.06
Water Column (ft): ~~7.14~~ 7.04
Well Diameter (in): ~~0.163~~ 2
Gal. Per ft: 0.163
Well volume (gal): 1.15
Depth of Screen (ft): 17.1

Purge
Methodology: typhoon

Site: Lewis Drive
Date: 11/7/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 41957
Pump type: Typhoon
Pump serial #r: 20170 Control Box # D37057

PID reading: opening well 2.3 after venting, if initially high — middle of sampling 3.8 closing well 7.8

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1026	10.06	0.75	3	6.05	19.0	0.019	126.3	9.28	10645	cloudy ; slight odor
1031	16.20	0.75	6.75	5.80	19.0	0.076	153.0	12.40	6258	cloudy ; strong odor
1036	16.90	0.75	10.5	5.59	19.1	0.092	224.4	13.31	57.49	cloudy ; strong odor

Remarks:
5 well volumes is 5.75 gallons

SAMPLING INFORMATION:

Depth to Water Before Sampling: 10.32
Depth sample was acquired: 15.0 ft
Sample Methodology: BAILER
Sample Date/Time: 11/7/19 / 10:50
Signed Sampler:
Filtered Metals Collected: Y / N Filter Size: N/A
Sample Observations: CLEAR / SLIGHT ODOR
Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-29

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	~~12/18/19~~ 12/17/19	Well Depth (ft):	14.95
Well Number:	MW-29	DTW (ft):	8.36
Field Crew:	MW, AD, TH, CS	Water Column (ft):	6.59

Remarks:

~~MW-29-121819~~ @ MW-29-121719

SAMPLING INFORMATION:

Depth sample was acquired:	11 FT
Sample Date/Time:	12/17/19 @ 1225
Signed Sampler:	
Sample Observations:	SLIGHTLY TURBID ORANGE
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-19

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/17/19	Well Depth (ft):	12.15
Well Number:	MW-19	DTW (ft):	7.81
Field Crew:	MW, AD	Water Column (ft):	4.34

Remarks:

☆ BAIL PRODUCT ☆ → ☆ NO PRODUCT DETECTED OR OBSERVED IN BAILER, NO SAMPLE COLLECTED TODAY, CHECK FOR RECHARGE (MW)

MW-19-121719

SCREEN 4.5 - 9.5

SAMPLING INFORMATION:

Depth sample was acquired:	9 FT
Sample Date/Time:	~~12/17/19~~ (MW) 12/17/19 @ 1430
Signed Sampler:	
Sample Observations:	STRONG ODOR AND VERY TURBID.
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-20

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/17/19	Well Depth (ft):	~~12.15~~ 19.40
Well Number:	MW-20	DTW (ft):	12.40
Field Crew:	MW, AD	Water Column (ft):	7.00

Remarks:

MW-20-121719

SCREEN 4.0 - 19.0

STRONG ODOR

SAMPLING INFORMATION:

Depth sample was acquired:	16 ft
Sample Date/Time:	12/17/19 @ 1240
Signed Sampler:	
Sample Observations:	SLIGHTLY TURBID, STRONG ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-26

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 12/17/19	Well Depth (ft): 17.12
Well Number: MW-26	DTW (ft): 5.51
Field Crew: MW, AD	Water Column (ft): 11.61

Remarks:

MW-26-121719

SCREEN 5-15

SAMPLING INFORMATION:

Depth sample was acquired:	14 ft
Sample Date/Time:	12/17/19 @ 1255
Signed Sampler:	
Sample Observations:	TURBID / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-26B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 12/17/19	Well Depth (ft): 41.05
Well Number: MW-26B	DTW (ft): 9.19
Field Crew: MW, AD	Water Column (ft): 31.86

Remarks:

MW-26B-121719

SCREEN 26-38

SAMPLING INFORMATION:

Depth sample was acquired:	30 ft
Sample Date/Time:	12/17/19 @ 1300
Signed Sampler:	
Sample Observations:	CLEAR; NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-23B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 12/17/19	Well Depth (ft): 23.21
Well Number: MW-23B	DTW (ft): 9.49
Field Crew: MW, AD	Water Column (ft): ~~23.21~~ 13.72

Remarks:

MW-23B-121719

SCREEN 28.0 - 50.5 ft

SAMPLING INFORMATION:

Depth sample was acquired:	40 ft
Sample Date/Time:	12/17/19 @ 1315
Signed Sampler:	
Sample Observations:	CLEAR, NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

(4) (3)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-45B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/17/19	Well Depth (ft):	21.96
Well Number:	MW-45B	DTW (ft):	15.70
Field Crew:	MW, AD	Water Column (ft):	6.26

Remarks:

MW-45B-121719

19-40.3

SAMPLING INFORMATION:

Depth sample was acquired: 20 Ft

Sample Date/Time: 12/17/19 @ 1330

Signed Sampler:

Sample Observations: CLEAR, NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-21

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/17/19	Well Depth (ft):	20.66
Well Number:	MW-21	DTW (ft):	16.54
Field Crew:	MW, AD	Water Column (ft):	4.12

Remarks:

MW-21-121719

SCREEN 5-20 Ft

SAMPLING INFORMATION:

Depth sample was acquired: 17 Ft

Sample Date/Time: 12/17/19 @ 1540

Signed Sampler:

Sample Observations: CLEAR, NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-44B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/17/19	Well Depth (ft):	34.54
Well Number:	MW-44B	DTW (ft):	14.99
Field Crew:	MW, AD	Water Column (ft):	19.55

Remarks:

MW-44B-121719

SCREEN 14.1-32.1

SAMPLING INFORMATION:

Depth sample was acquired: 25 Ft

Sample Date/Time: 12/17/19 @ 1500

Signed Sampler:

Sample Observations: CLEAR, NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(4) (8)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-01

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/17/19	Well Depth (ft):	16.58
Well Number:	MW-01	DTW (ft):	3.99
Field Crew:	MW, AD	Water Column (ft):	12.59

Remarks:

MW-01-121719

SCREEN 3-13

SAMPLING INFORMATION:

Depth sample was acquired:	10 Ft
Sample Date/Time:	12/17/19 @ 1510
Signed Sampler:	
Sample Observations:	CLEAR, NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-01B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/17/19	Well Depth (ft):	44.52
Well Number:	MW-01B	DTW (ft):	11.61
Field Crew:	MW, AD	Water Column (ft):	32.91

Remarks:

MW-01B-121719

SCREEN 18.5 - 38.5

SAMPLING INFORMATION:

Depth sample was acquired:	25 Ft
Sample Date/Time:	12/17/19 @ 1515
Signed Sampler:	
Sample Observations:	TURBID, NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-27B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/17/19	Well Depth (ft):	50.50
Well Number:	MW-27B	DTW (ft):	29.04
Field Crew:	MW, AD	Water Column (ft):	21.46

Remarks:

MW-27B-121719

SCREEN 36-46

SAMPLING INFORMATION:

Depth sample was acquired:	40 Ft
Sample Date/Time:	12/17/19 @ 1530
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

5

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-12

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/17/19	Well Depth (ft):	21.03
Well Number:	MW-12	DTW (ft):	14.68
Field Crew:	MW, AD	Water Column (ft):	~~19~~ 6.35

Remarks:

MW-12-121719

SCREEN 4.3 - 19.3

SAMPLING INFORMATION:

Depth sample was acquired:	18 FT
Sample Date/Time:	12/17/19 @ 1545
Signed Sampler:	
Sample Observations:	SLIGHT TURBIDITY / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-49

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/17/19	Well Depth (ft):	23.80
Well Number:	MW-49	DTW (ft):	20.10
Field Crew:	MW, AD	Water Column (ft):	23.70

Remarks:

MW-49-121719 ⌀ TOP WEIGHT ⌀

SCREEN 6-21 FT

SAMPLING INFORMATION:

Depth sample was acquired:	21 FT
Sample Date/Time:	12/17/19 @ 1610
Signed Sampler:	
Sample Observations:	CLEAR, NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-~~39~~ 35

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/17/19	Well Depth (ft):	~~13.03~~ 26.26
Well Number:	MW-~~39~~ 35	DTW (ft):	~~4.54~~ 9.27
Field Crew:	MW, AD	Water Column (ft):	~~8.49~~ 16.99

Remarks:

~~MW-39-121719~~ MW-35-121719

~~SCREEN 5-10 FT~~

SAMPLING INFORMATION:

Depth sample was acquired:	~~4 FT~~
Sample Date/Time:	12/17/19 @ 1605
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER	WELL NUMBER
D216100	SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-56
Field Crew: DM, CS
Well Depth (ft): 17.44
DTW (ft): 6.98
Water Column (ft): 10.46
Well Diameter (in): 2"
Gal. Per ft: .163
Well volume (gal): 1.70
Depth of Screen (ft): 4.3 - 14.3 ft

Purge
Methodology: low flow

Site: ~~TESTA~~ LEWIS DRIVE
Date: 12-17-19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045651
Pump type (please circle): Peristaltic Bladder
Pump serial number: 031278

PID reading: opening well 0.0 after venting, if initially high middle of sampling 0.0 closing well 0.0

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1415	7.44	200	.25	4.97	16.7	0.261	493.5	7.94	116.2	TURBID / NO ODOR LIGHT BROWN
1420	7.42	200	.50	4.99	17.1	0.303	492.4	7.98	86.5	"
1425	7.47	200	.75	4.97	16.9	0.378	496.1	8.02	64.83	"
1430	7.45	200	1.00	4.96	17.0	0.452	500.4	8.18	45.56	"
1435	7.45	200	1.25	4.95	16.9	0.539	504.8	8.36	36.67	"
1440	7.48	200	1.50	4.92	16.9	0.701	511.9	8.83	29.15	CLEARING UP / NO ODOR
1445	7.48	200	1.75	4.91	16.9	0.816	516.2	9.14	20.85	"
1450	7.47	200	2.00	4.90	16.9	0.863	518.5	9.30	19.20	"
1455	7.47	200	2.25	4.89	16.8	0.905	520.3	9.44	15.81	CLEAR / NO ODOR
1500	7.47	200	2.50	4.89	17.0	0.932	522.6	9.61	17.08	"
1505	7.47	200	2.75	4.89	16.9	0.968	524.5	9.75	14.50	"
1510	7.47	200	3.00	4.90	16.9	0.978	525.9	9.92	13.85	"
1515	7.47	200	3.25	4.89	16.9	1.003	528.5	10.06	8.59	"
1520	7.48	200	3.50	4.89	16.9	1.003	529.2	10.09	8.82	"
1525	7.48	200	3.75	4.89	16.9	1.020	531.0	10.16	7.74	"
1535	COLLECT SAMPLE			MW-56 - 121719						

Remarks: SOFT BOTTOM
$Fe^{2+} = 0$
SODIUM PERSULFATE = >70 AFTER 1 TO 5 DILUTION
HYDROGEN PEROXIDE = 175 mg/L

SAMPLING INFORMATION:

Depth to Water Before Sampling: 7.48 Depth sample was acquired: 15'
Sample Methodology: LOW FLOW
Sample Date/Time: 12-17-19 / 1535
Signed Sampler:
Filtered Metals Collected: Y / N Filter Size: N/A
Sample Observations: CLEAR
Parameters (please circle): VOCs SVOCs Dissolved Metals Other: SULFATE BY IC

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: D7161400

WELL NUMBER

SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-57
Field Crew: TH, CS
Well Depth (ft): 16.99
DTW (ft): 8.76
Water Column (ft): 8.23
Well Diameter (in): 2"
Gal. Per ft: 0.163
Well volume (gal): 1.34
Depth of Screen (ft): 3-13.9 ft

Purge
Methodology: low flow

Site: LEWIS DRIVE
Date: 12-17-19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045657
Pump type (please circle): Peristaltic Bladder
Pump serial number: D31278

PID reading: opening well 0.5 after venting, if initially high middle of sampling 0.2 closing well 0.1

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1250	8.85	200	0.25	4.48	16.8	1.327	431.6	2.41	16.50	CLEAR/NO ODOR
1255	8.85	200	.50	4.46	16.8	1.320	456.5	2.48	8.78	"
1300	8.85	200	.75	4.47	16.9	1.298	471.2	2.45	10.47	"
1305	8.85	200	1.00	4.48	17.0	1.264	480.1	2.46	14.56	"
1310	8.85	200	1.25	4.49	17.1	1.251	486.9	2.55	15.15	"
1315	8.85	200	1.50	4.49	17.1	1.216	499.2	2.62	5.06	"
1320	8.85	200	1.75	4.49	17.2	1.209	498.0	2.54	8.84	"
1325	8.85	200	2.00	4.50	17.2	1.205	502.6	2.59	6.49	"
1335	DUP	MW-57-D-121719								
1330	MW-57-121719									

Remarks: HIDROGEN PEROXIDE = 90 SODIUM PERSULFATE = >70
DUP @ 1335 MW-57-D-121719 FERROUS Fe^{2+} = 0

SAMPLING INFORMATION:

Depth to Water Before Sampling: 8.85
Depth sample was acquired: 13.00
Sample Methodology: LOW FLOW
Sample Date/Time: 12-17-19 / 1330
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: N/A
Sample Observations: CLEAR/NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: SULFATE BY IC

(1)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-08

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	19.84
Well Number:	MW-08	DTW (ft):	5.49
Field Crew:	MW, AD	Water Column (ft):	14.35

Remarks: MW-08-121819

SCREEN 4.7 - 19.7

SAMPLING INFORMATION:

Depth sample was acquired:	12 FT
Sample Date/Time:	12/18/19 @ 0915
Signed Sampler:	
Sample Observations:	TURBID/NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-16

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	20.58
Well Number:	MW-16	DTW (ft):	10.2
Field Crew:	MW, AD	Water Column (ft):	10.38

Remarks: MW-16-121819

SCREEN 5 - 20

SAMPLING INFORMATION:

Depth sample was acquired:	16 FT
Sample Date/Time:	12/18/19 @ 0925
Signed Sampler:	
Sample Observations:	TURBID ORANGE W/ ORANGE FLOC, STRONG ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-06B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	85.61
Well Number:	MW-06B	DTW (ft):	14.90
Field Crew:	MW, AD	Water Column (ft):	70.71

Remarks: MW-06B-121819

SCREEN 65.5 - 85.5

SAMPLING INFORMATION:

Depth sample was acquired:	75 FT
Sample Date/Time:	12/18/19 @ 0955
Signed Sampler:	
Sample Observations:	CLEAR, NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-06

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	19.39
Well Number:	MW-06	DTW (ft):	14.89
Field Crew:	MW, AD	Water Column (ft):	4.5

Remarks:

MW-06-121819

SCREEN 5 - 19.6

SAMPLING INFORMATION:

Depth sample was acquired:	16 Ft
Sample Date/Time:	12/18/19 @ 1000
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-09B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	151
Well Number:	MW-09B	DTW (ft):	11.31
Field Crew:	MW, AD	Water Column (ft):	139.69

Remarks:

MW-09B-121819

SCREEN 131 - 151

SAMPLING INFORMATION:

Depth sample was acquired:	140 Ft
Sample Date/Time:	12/18/19 @ 1255
Signed Sampler:	
Sample Observations:	Clear, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-09

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	20.21
Well Number:	MW-09	DTW (ft):	0
Field Crew:	AD, MW	Water Column (ft):	20.21

Remarks:

MW-09-121819 ☆ SPARGING ON

SCREEN 4.5 - 19.5

SAMPLING INFORMATION:

Depth sample was acquired:	15 Ft 1250
Sample Date/Time:	12/18/19 @
Signed Sampler:	
Sample Observations:	Clear, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-02B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	81.72
Well Number:	MW-02B	DTW (ft):	10.72
Field Crew:	MW, AP	Water Column (ft):	71

Remarks:

MW-02B-121819

SCREEN 70 - 81

SAMPLING INFORMATION:

Depth sample was acquired:	75 Ft
Sample Date/Time:	12/18/19 @ 1050
Signed Sampler:	
Sample Observations:	Clear
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-02

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	20.58
Well Number:	MW-02	DTW (ft):	0.0
Field Crew:	MW, AD	Water Column (ft):	20.58

Remarks:

MW-02-121819 @ SPARGING ON

SCREEN 5 - 20

SAMPLING INFORMATION:

Depth sample was acquired:	15 Ft
Sample Date/Time:	12/18/19 @ 1045
Signed Sampler:	
Sample Observations:	CLEAR, SLIGHT ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-04

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	19.56
Well Number:	MW-04	DTW (ft):	13.57
Field Crew:	MW, AD	Water Column (ft):	5.99

Remarks:

MW-04-121819

SCREEN 5 - 20

SAMPLING INFORMATION:

Depth sample was acquired:	16 Ft
Sample Date/Time:	12/18/19 @ 1015
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-03

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	20.26
Well Number:	MW-03	DTW (ft):	7.8
Field Crew:	MW, AD	Water Column (ft):	12.48

Remarks: MW-03-121819 * SPARGING ON

SCREEN 5 - 20

SAMPLING INFORMATION:

Depth sample was acquired:	16 FT
Sample Date/Time:	12/18/19 @ 1020
Signed Sampler:	
Sample Observations:	TURBID NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-32

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	28.55
Well Number:	MW-32	DTW (ft):	15.54
Field Crew:	MW, AD	Water Column (ft):	13.29

Remarks: MW-32-121819

SCREEN 9 - 24

SAMPLING INFORMATION:

Depth sample was acquired:	21 FT
Sample Date/Time:	12/18/19 @ 1030
Signed Sampler:	
Sample Observations:	CLEAR, NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-10

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	23.21
Well Number:	MW-10	DTW (ft):	16.77
Field Crew:	MW, AD	Water Column (ft):	6.44

Remarks: MW-10-121819

SCREEN 5 - 20

SAMPLING INFORMATION:

Depth sample was acquired:	20 FT
Sample Date/Time:	12/18/19 @ 1105
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-47

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	22.86
Well Number:	MW-47	DTW (ft):	19.41
Field Crew:	MW, AD	Water Column (ft):	3.45

Remarks:

MW-47-121819

SCREEN 10-20 FT

SAMPLING INFORMATION:

Depth sample was acquired:	20 FT - 21 DUE TO DTW
Sample Date/Time:	12/18/19 0915
Signed Sampler:	
Sample Observations:	Clear, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-31

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	28.03
Well Number:	MW-31	DTW (ft):	22.17
Field Crew:	AD, MW	Water Column (ft):	5.86

Remarks:

MW-31-121819

SCREEN 10-25

SAMPLING INFORMATION:

Depth sample was acquired:	25 FT
Sample Date/Time:	12/18/19 0930
Signed Sampler:	
Sample Observations:	Clear, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-33T

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	99.89
Well Number:	MW-33T	DTW (ft):	28.15
Field Crew:	MW, AD	Water Column (ft):	71.74

Remarks:

MW-33T-121819

SCREEN 84-94

SAMPLING INFORMATION:

Depth sample was acquired:	90 FT 0945
Sample Date/Time:	12/18/19
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-48B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	~~94.07~~ 91 (ft)
Well Number:	MW-48B	DTW (ft):	17.91
Field Crew:	MW, AD	Water Column (ft):	73.09

Remarks:

MW-48B-121819

SCREEN 71-91

SAMPLING INFORMATION:

Depth sample was acquired:	75 ft 1000
Sample Date/Time:	12/18/19
Signed Sampler:	
Sample Observations:	Clear, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-50B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	102.20
Well Number:	MW-50B	DTW (ft):	23.67
Field Crew:	MW, AD	Water Column (ft):	78.53

Remarks:

MW-50B-121819

SCREEN 96-106

SAMPLING INFORMATION:

Depth sample was acquired:	102 ft 1015
Sample Date/Time:	12/18/19
Signed Sampler:	
Sample Observations:	turbid, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-14B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	85.34
Well Number:	MW-14B	DTW (ft):	19.62
Field Crew:	MW, AD	Water Column (ft):	65.72

Remarks:

MW-14B-121819

SCREEN 66-76

SAMPLING INFORMATION:

Depth sample was acquired:	70 ft 1100
Sample Date/Time:	12/18/19
Signed Sampler:	
Sample Observations:	Clear, no sheen
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-14

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	22.22
Well Number:	MW-14	DTW (ft):	17.79
Field Crew:	MW, AD	Water Column (ft):	4.43

Remarks:

MW-14-121819

SCREEN 4.3-19.3

SAMPLING INFORMATION:

Depth sample was acquired:	19 ft
Sample Date/Time:	12/18/19 @
Signed Sampler:	
Sample Observations:	no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-13B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	55.05
Well Number:	MW-13B	DTW (ft):	24.25
Field Crew:	MW, AD	Water Column (ft):	30.8

Remarks:

MW-13B-121819

SCREEN 48-58

SAMPLING INFORMATION:

Depth sample was acquired:	52 ft
Sample Date/Time:	12/18/19 @
Signed Sampler:	
Sample Observations:	clear, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-~~18~~ 43B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	56.55
Well Number:	MW-~~18~~ 43B @	DTW (ft):	2.19
Field Crew:	MW, AD	Water Column (ft):	54.36

Remarks:

MW-43B-121819

SCREEN 31-51

SAMPLING INFORMATION:

Depth sample was acquired:	40 ft
Sample Date/Time:	12/18/19 @ 1420
Signed Sampler:	
Sample Observations:	clear, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

Attachment B

(8)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-43

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	~~16.55~~ RD 10.30
Well Number:	MW-43	DTW (ft):	~~2.14~~ MW 3.47
Field Crew:	MW, AD	Water Column (ft):	6.83

Remarks:

MW-43-121819

SCREEN 2.5 – 7.5

SAMPLING INFORMATION:

Depth sample was acquired:	7 Ft
Sample Date/Time:	12/18/19 1410
Signed Sampler:	
Sample Observations:	Clear, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-24

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	15.50
Well Number:	MW-24	DTW (ft):	3.77
Field Crew:	MW, AD	Water Column (ft):	11.73

Remarks:

MW-24-121819

SCREEN 8-13

SAMPLING INFORMATION:

Depth sample was acquired:	10 Ft
Sample Date/Time:	12/18/19 1340
Signed Sampler:	
Sample Observations:	Clear, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-24B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	42.49
Well Number:	MW-24B	DTW (ft):	4.78
Field Crew:	MW, AD	Water Column (ft):	37.71

Remarks:

MW-24B-121819

SCREEN 19.5 – 39.5

SAMPLING INFORMATION:

Depth sample was acquired:	30 Ft 1330
Sample Date/Time:	12/18/19
Signed Sampler:	
Sample Observations:	Clear, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-15

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	19.18
Well Number:	MW-15	DTW (ft):	12.27
Field Crew:	MW, AD	Water Column (ft):	6.91

Remarks: MW-15-121819

SCREEN 4-19

SAMPLING INFORMATION:

Depth sample was acquired:	16 ft
Sample Date/Time:	12/18/19 1540
Signed Sampler:	
Sample Observations:	no odor, some sediment
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-39

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	13.03
Well Number:	MW-39	DTW (ft):	4.54
Field Crew:	MW, AD	Water Column (ft):	8.49

Remarks: MW-39-121819

SCREEN 5-10 ft

SAMPLING INFORMATION:

Depth sample was acquired:	9 ft
Sample Date/Time:	12/18/19 @ 1540
Signed Sampler:	
Sample Observations:	fluc particles, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-41

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	~~3.81~~ 13.19
Well Number:	MW-41	DTW (ft):	~~13.14~~ 3.81
Field Crew:	AD, MW	Water Column (ft):	9.38

Remarks: MW-41-121819

~~MW-41-D-121819~~ ~~DUPLICATE~~

SCREEN 5-10

SAMPLING INFORMATION:

Depth sample was acquired:	9 ft
Sample Date/Time:	12/18/19 @
Signed Sampler:	
Sample Observations:	Clear, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-42

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	13.39
Well Number:	MW-42	DTW (ft):	4.45
Field Crew:	MW, AD	Water Column (ft):	8.94

Remarks:

MW-42-121819

SCREEN 5-10

SAMPLING INFORMATION:

Depth sample was acquired:	9 FT
Sample Date/Time:	12/18/19 @ 1615
Signed Sampler:	
Sample Observations:	Clear, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-25B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	53.13
Well Number:	MW-25B	DTW (ft):	4.53
Field Crew:	MW, AD	Water Column (ft):	48.6

Remarks:

MW-25B-121819

SCREEN 48-58

SAMPLING INFORMATION:

Depth sample was acquired:	50 FT
Sample Date/Time:	12/18/19 1605
Signed Sampler:	
Sample Observations:	Clear, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-25

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	12/18/19	Well Depth (ft):	18.08
Well Number:	MW-25	DTW (ft):	8.23
Field Crew:	MW, AD	Water Column (ft):	9.85

Remarks:

MW-25-181819

SCREEN 5-15

SAMPLING INFORMATION:

Depth sample was acquired:	14 FT
Sample Date/Time:	12/18/19
Signed Sampler:	
Sample Observations:	Clear, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-28

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 12/18/19	Well Depth (ft):
Well Number: MW-28	DTW (ft):
Field Crew: AD, CS	Water Column (ft):
Remarks: Screen 10-25 ft	

SAMPLING INFORMATION:

Depth sample was acquired:	20 → B
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-36

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 12/18/19	Well Depth (ft): 23.84
Well Number: MW-36	DTW (ft): 19.83
Field Crew: A. Nunn, C. Sutton	Water Column (ft): 4.01
Remarks: no odor	

SAMPLING INFORMATION:

Depth sample was acquired:	22 ft → B
Sample Date/Time:	12/18/19 1445
Signed Sampler:	
Sample Observations:	clear, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-36B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 12/18/19	Well Depth (ft): ~~19.27~~ 42.81
Well Number: MW-36B	DTW (ft): 19.27
Field Crew: AD, CS	Water Column (ft): 23.54
Remarks: no odor	

SAMPLING INFORMATION:

Depth sample was acquired:	25 ft
Sample Date/Time:	12/18/19 1450
Signed Sampler:	
Sample Observations:	clear, no odor
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: D3161400

WELL NUMBER: SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-27
Field Crew: TH, CS
Well Depth (ft): 29.68
DTW (ft): 27.52
Water Column (ft): 2.16
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 0.35
Depth of Screen (ft): 5-30 Ft

Purge
Methodology: low flow

Site: LEWIS DRIVE
Date: 12-17-19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045651
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 031278

PID reading: opening well 1648 after venting, if initially high 1251 middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0955	28.07	150	.15	5.88	17.4	0.160	10.8	1.07	—	CLEAR/STRONG ODOR
1000	28.30	150	.25	5.74	17.4	0.149	16.7	1.08	—	"
1005	28.58	150	.45	5.80	17.4	0.156	0.2	0.81	—	"
1010	28.74	150	.75	5.83	17.3	0.167	-9.2	0.71	—	"
1035	28.95	150	.90	5.98	18.1	0.185	-21.2	0.83	—	"
1535	28.52									
12/18 1528	27.62									
1530	COLLECT	MW-27-12181 9								
1535	COLLECT	MW-27-D-12181 9								

Remarks:
NTU INITIALLY HIGH AROUND 40,000 NTU. CALIBRATED CORRECTLY. WILL CALL PINE TO HAVE ANOTHER SENT OUT.
DRY @ 1015 LET RECOVER 1040 DRY AGAIN. WILL LET RECOVER DURING LUNCH THEN SAMPLE

SAMPLING INFORMATION:

Depth to Water Before Sampling: 27.62
Depth sample was acquired: 29
Sample Methodology: LOW FLOW
Sample Date/Time: 12-17-19
Signed Sampler:
Filtered Metals Collected: Y (N) Filter Size: N/A
Sample Observations: CLEAR, NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400 | WELL NUMBER MW-18 | SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-18
Field Crew: MW, TH
Well Depth (ft): 19.75
DTW (ft): 18.19
Water Column (ft): ~~19.25~~ 1.56
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 0.254
Depth of Screen (ft): 5 - 20
PID reading: opening well 694.3 after venting, if initially high 757 middle of sampling 748.1 closing well 757.2

Site: LEWIS DRIVE
Date: 12/18/19
Purge Methodology: low flow

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045651
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 031278

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1312	START PUMP		0.0							
1320	18.12	150	0.1	5.55	15.3	0.057	183.9	9.02	2276.0	BROWN TURBID WITH ODOR
1325	18.44	150	0.3	5.77	15.6	0.027	156.0	8.07	9578.0	" — "
1330	WATER BEGAN RUNNING CLEAR SO FLOW THROUGH CELL WAS									
	RINSED OUT									
1332	RESTARTED PUMP									
1335	18.74	150	0.5	5.94	15.3	0.025	136.1	7.27	3350.	LESS TURBID BROWN ODOR
1340	18.91	150	0.8	5.79	15.5	0.024	141.9	7.29	2217	" — "
1343	WELL BEGAN TO RUN DRY SO TURBINE WAS PUSHED									
	INTO WELL.								2 INCHES	
1344	19.10									
1345	19.19	150	1.0	5.96	15.4	0.024	128.4	8.04	3578	" — "
1350	19.39	150	1.25	6.07	16.0	0.23	120.3	8.02	4032	" "
1350	COLLECT SAMPLE [MW-18-121819]									

Remarks:

[MW-18-121819]

3 WELL VOLUMES = 0.76

* POSSIBLE SHEEN, DILUTE SAMPLE *

SAMPLING INFORMATION:

Depth to Water Before Sampling: 9.39
Depth sample was acquired: 19.5
Sample Methodology: LOW FLOW
Sample Date/Time: 12/18/19 @ 1350
Signed Sampler:
Filtered Metals Collected: Y (N) Filter Size: N/A
Sample Observations: TURBID / ORANGE / ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400

WELL NUMBER MW-05

SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	MW-05	Site:	LEWIS DRIVE
Field Crew:	MW, TH	Date:	12/18/19
Well Depth (ft):	19.55	Purge	
DTW (ft):	17.52	Methodology: low flow	
Water Column (ft):	~~19.55~~ 2.03		
Well Diameter (in):	2		
Gal. Per ft:	0.163		
Well volume (gal):	0.33		
Depth of Screen (ft):	5-20		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045651

Pump type (please circle): (Peristaltic) Bladder

Pump serial number: 031275

PID reading: opening well 1.1 after venting, if initially high middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1433	START	PUMP								(W)
1435	17.82	160	0	5.68	15.6	0.051	165.0	8.14	40.2	CLEAR/NO ODOR
1440	18.00	160	0.1	5.25	16.5	0.047	211.2	7.92	45.11	" — "
1445	18.31	160	0.4	5.80	16.5	0.066	169.3	6.07	50.0	" — "
1450	18.62	160	0.6	5.30	16.7	0.050	217.9	6.88	25.52	" — "
1455	18.80	160	0.8	5.24	16.7	0.049	233.9	6.58	29.6	" — "
1500	19.43	160	1.1	5.35	16.7	0.066	216.2	5.84	39.0	CLEAR/NO ODOR
1505	COLLECT SAMPLE AFTER 3 WELL VOLUMES WERE PURGED.									
(W) ~~1505~~ 1510	MW-05-121819									

Remarks:

MW-05-121819

1 GAL = 3 WELL VOLUMES

SAMPLING INFORMATION:

Depth to Water Before Sampling: 18.81 AFTER RECHARGE Depth sample was acquired: 19.5 FT

Sample Methodology: LOW FLOW

Sample Date/Time: 12/19/19 @ 1510

Signed Sampler:

Filtered Metals Collected: (Y)/N Filter Size: N/A

Sample Observations: CLEAR, NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400 | WELL NUMBER SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	MW-22	Site:	LEWIS DRIVE
Field Crew:	MW, AD	Date:	12/17/19
Well Depth (ft):	10.30	Purge	
DTW (ft):	9.48	Methodology: low flow	
Water Column (ft):	0.82		
Well Diameter (in):	2"		
Gal. Per ft:	0.163		
Well volume (gal):	.132		
Depth of Screen (ft):	6-11		
PID reading:	13.4	opening well —	after venting, if initially high — middle of sampling — closing well —

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 046465

Pump type (please circle): (Peristaltic) Bladder

Pump serial number: 024464

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1008	BEGIN PUMP									
1010	9.61	150	Ø	6.44	19.4	195.0	63.8	5.54	91.65	GREYISH
1015	9.81	170	Ø.1	5.45	19.9	105.1	142.9	7.54	0.33	CLEAR
1020	10.13	170	0	5.38	20.0	106.7	173.6	7.66	17.7	CLEAR
1021	WELL	BECAME	DRY.							
1415	9.53									
(12/18) 1550	9.49									
1555	COLLECT	MW-22-121819								

Remarks: ON 12/17/19, MW-22 BECAME DRY AT 1021. WILL MONITOR FOR RECHARGE AND THEN COLLECT A SAMPLE.

SAMPLING INFORMATION:

Depth to Water Before Sampling:	9.49
Depth sample was acquired:	10 ft
Sample Methodology:	LOW FLOW
Sample Date/Time:	12/18/19 (1550)
Signed Sampler:	
Filtered Metals Collected:	Y / (N)
Filter Size:	
Sample Observations:	LIGHT GRAY AT START AND THEN CLEAR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-28

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 12/19/19	Well Depth (ft): ~~23~~ 26.09
Well Number: MW-28	DTW (ft): 23.32
Field Crew: AD, MW	Water Column (ft): 2.77 Ft
Remarks:	

MW-28-121919

SAMPLE CONTAINED A BLACK GRITTY MATERIAL. SLIGHT ODOR PRESENT

SCREEN 10-25

SAMPLING INFORMATION:

Depth sample was acquired:	25 Ft W/ TOP WEIGHT
Sample Date/Time:	12/19/19 @ 1635
Signed Sampler:	
Sample Observations:	BLACK GRIT / SLIGHT ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	
Well Number:	Well Depth (ft):
Field Crew:	DTW (ft):
Remarks:	Water Column (ft):

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	
Well Number:	Well Depth (ft):
Field Crew:	DTW (ft):
Remarks:	Water Column (ft):

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER	WELL NUMBER / SHEET
D316 1400	AGRICULTURAL WELLS / 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	AGRICULTURAL WELLS	Site:	LEWIS DRIVE
Field Crew:	TH, CS	Date:	12/19/19
Well Depth (ft):		Purge	
DTW (ft):		Methodology: low flow	
Water Column (ft):			
Well Diameter (in):			
Gal. Per ft:			
Well volume (gal):			
Depth of Screen (ft):			

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number:

Pump type (please circle): ~~Peristaltic~~ Bladder

Pump serial number:

PID reading: opening well | after venting, if initially high | middle of sampling | closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
AW-528	—	—	—	7.38	15.6	0.173	248.5	3.33	0.15	CLEAR/NO ODOR
AW-33920317	—	—	—	5.42	16.7	0.044	251.5	7.85	0.11	CLEAR/NO ODOR

12/19/19

Remarks:

1605 [AW-33920817-121919]

1535 [AW-528-121919]

SAMPLING INFORMATION:

Depth to Water Before Sampling: Depth sample was acquired:

Sample Methodology:

Sample Date/Time: 12/19/19 @ 1605 AND 1535

Signed Sampler:

Filtered Metals Collected: Y / N Filter Size: NA

Sample Observations: CLEAR, NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: D3161400

WELL NUMBER: SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-44
Field Crew: TH, CS
Well Depth (ft): 9.75
DTW (ft): 7.85
Water Column (ft): 1.90
Well Diameter (in): 2"
Gal. Per ft: 0.163
Well volume (gal): .31
Depth of Screen (ft): 5 - 10 Ft

Purge
Methodology: low flow

Site: LEWIS DRIVE
Date: 12-19-19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
(2")	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 046465
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 031778

PID reading: opening well | after venting, if initially high | middle of sampling | closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0855	8.38	170	.25	5.39	13.4	.043	198.3	7.89	10.70	CLEAR/NO ODOR
0900	8.59	170	.50	5.37	13.3	.042	211.6	7.80	7.76	"
0905	8.81	170	.70	5.36	13.3	.042	218.9	7.65	7.37	"
0910	9.00	170	.95	5.35	13.6	.042	224.2	7.37	12.7	"
0915	9.07	170	1.10	5.33	13.7	.042	226.6	7.27	17.1	"

Remarks: CLEAR AT START.
3 WELL VOLUMES PURGED THEN COLLECTED
3 WELL VOLUMES = .93 GAL

SAMPLING INFORMATION:

Depth to Water Before Sampling: 9.07
Depth sample was acquired: 9.50
Sample Methodology: LOW FLOW
Sample Date/Time: 12-19-19 / 0915
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: N/A
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400

WELL NUMBER MW-17B

SHEET OF

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-17B
Field Crew: MW, AD
Well Depth (ft): 27.5
DTW (ft): 16.25
Water Column (ft): 11.25
Well Diameter (in): 6
Gal. Per ft: 1.469
Well volume (gal): 16.5
Depth of Screen (ft): 17-27
PID reading: opening well 308 after venting, if initially high 31.5 middle of sampling closing well

Purge Methodology: typhoon

Site: LEWIS DRIVE
Date: 12/19/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 045651
Pump type: Typhoon
Pump serial #: 026437 Control Box #: 033453

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1550	START PUMP		3 GAL/MIN							
1551	17.50	3	6	6.04	16.6	0.136	59.9	5.61	412	TURBID/ODOR
1552	18.40									
1553	19.3									
1554	19.65	3								
1555	20.10		~25	6.13	19.2	0.125	18.1	5.29	195	TURBID/STRONG ODOR
1556	20.45									
1557	20.90									
1558	21.10	3.5								
1559	21.35									
1600	21.50		~40	5.98	18.6	0.126	26.7	3.68	277	
1601	21.60	3.5								TURBID/STRONG ODOR
1602	21.75	3.5	~42							
1603	21.80	3.5								
1604	21.90									
1605	21.95		~60	5.95	19.3	0.125	16.9	4.68	174.4	
1610	21.00		~~65~~ 70	5.99	19.2	0.122	34.0	3.14	56	TURBID ODOR
1615	20.50		~80	5.21	19.6	0.123	31.3	2.22	43.6	CLEAR/ODOR
1620	20.00		~86	5.99	19.4	0.125	28.0	2.55	684	CLEAR/ODOR
1625	MW-17B-121919									TURBID/ODOR
1630	MW-17B-D-121919									

Remarks:

82 GALLONS = 5 WELL VOLUMES

AT ~~1605~~ 1607, A MEASUREMENT FOR DRUM VOLUME WAS TAKEN, 60 GALLONS HAS BEEN PUMPED BY THIS POINT.

SAMPLING INFORMATION:

Depth to Water Before Sampling: 20.00
Depth sample was acquired: 27.0
Sample Methodology: HIGH-FLOW/BAILER
Sample Date/Time: 12/19/19 @ 1625 DUP AT 1630
Signed Sampler:
Filtered Metals Collected: Y/(N) Filter Size: NA/
Sample Observations: TURBID/STRONG ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400 | WELL NUMBER MW-40 | SHEET OF

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-40
Field Crew: MW, AD
Well Depth (ft): 8.02
DTW (ft): 2.27
Water Column (ft): 5.75
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 0.94
Depth of Screen (ft): 5-10
PID reading:

Site: LEWIS DRIVE
Date: 12/19/19
Purge
Methodology: typhoon

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 045651
Pump type
Pump serial #: 039215
Typhoon Control Box # 033453

opening well | after venting, if initially high | middle of sampling | closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1303	START PUMP									
1303	7.45	2.1	2.5	6.84	15.3	0.076	0.075	4.93	4000	GREY TURBID ODOR
1305	7.90	RECHARGING								
1307	5.90	RECHARGING								
1309	4.30	RECHARGING								
1311	3.81	RECHARGING								
1313	3.15	RECHARGING								
1315	2.86	RECHARGING								
1317	2.70	RESTART PUMP								
1318	6.45	2.1	3.5	6.54	16.6	0.70	13.8	3.99	20000	GREY TURBID ODOR
1320	11.8	DTW WENT TO		11.8,	GREATER	DEPTH	THAN	ORIGINAL	MEASUREMENT	
1322	12.0	2.1	7.5	6.09	16.9	0.098	29.9	2.09	14.80	GREY TURBID
1322	PUMP	BECAME	DRY							
1324	8.30	RECHARGING								
1326	5.95	RECHARGING								
1328	4.65	RECHARGING								
1330	~~4.15~~ 3.95	RECHARGING								
1332	3.42	RECHARGING								
1334	3.10	RECHARGING								
1336	2.90	RECHARGING								
1338	2.76	RECHARGING								

Remarks:
1339, PUMP REMOVED AND DTW INCREASED.
MW-40-121919
5 WELL VOLUMES = 4.68 GALLONS

SAMPLING INFORMATION:

Depth to Water Before Sampling: 3.25 Ft.
Depth sample was acquired: 8 Ft
Sample Methodology: TYPHOON / BAILER
Sample Date/Time: 12/19/19 @ 1340
Signed Sampler:
Filtered Metals Collected: Y / (N)
Filter Size:
Sample Observations: GREY, TURBID, ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER	WELL NUMBER
D316 1400	SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-37
Field Crew: TH, CS
Well Depth (ft): ~~19.00~~ 18.10 Purge
DTW (ft): 3.20
Water Column (ft): 14.90
Well Diameter (in): 2"
Gal. Per ft: 0.163
Well volume (gal): 2.43
Depth of Screen (ft): 5-15'
PID reading: opening well 0 after venting, if initially high middle of sampling closing well

Site: LEWIS DRIVE
Date: 12-19-19
Methodology: low flow

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 046465
Pump type (please circle): Peristaltic Bladder
Pump serial number: 031278

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1000	3.29	200	.40	5.14	14.2	.051	200.2	1.88	52.5	CLEAR / NO ODOR
1005	3.29	200	.75	5.11	14.5	.052	204.8	1.73	39.8	"
1010	3.29	200	1.00	5.10	14.8	.052	208.3	1.65	35.6	"
1015	3.30	200	1.25	5.10	14.7	.051	212.1	1.62	24.3	"
1020	3.30	200	1.50	5.09	14.9	.051	217.6	1.58	19.2	"
1025	3.30	200	1.75	5.09	14.8	.051	220.0	1.58	14.2	"
1030	3.30	200	2.00	5.09	15.0	.050	224.7	1.56	12.0	"
1035	3.31	200	2.25	5.09	15.1	.050	226.2	1.55	8.9	"
1040	3.31	200	2.50	5.08	14.9	.050	229.6	1.55	7.97	"

12-19-19

Remarks: WATER CLEAR FROM START TO FINISH
NO ODOR FOR DURATION OF LOW FLOW

Fe^{2+} = 0 mg/L
SODIUM PERSULFATE = 0 mg/L
HYDROGEN PEROXIDE = 0 mg/L

SAMPLING INFORMATION:

Depth to Water Before Sampling: 3.31
Depth sample was acquired: ~~17~~ 17'
Sample Methodology: LOW FLOW
Sample Date/Time: 12-19-19 / 1045
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: N/A
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: SULFATE BY IC

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400	SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-38
Field Crew: TH, CS
Well Depth (ft): 11.47
DTW (ft): 1.24
Water Column (ft): 10.23
Well Diameter (in): 2"
Gal. Per ft: 0.163
Well volume (gal): 1.67
Depth of Screen (ft): 4-9'
PID reading: opening well 0 after venting, if initially high middle of sampling closing well

Purge
Methodology: low flow

Site: LEWIS DRIVE
Date: 12-19-19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 046465
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 031278

Field Parameters

Time / Stabilization	DTW (toc) <0.33' or 4" & <5% of wc	Flow Rate (ml/min) 100-500	Total Volume (gal) NA	pH (Std. Units) ±0.1 SU	Temp (°C) ±1°C	Cond. (mS/cm) ±10%	ORP (mV) ±10 mV	D.O. [Surface] (mg/L) ±10%	Turbidity (NTU) ±10% or < 10	Color/Odor NA
1315	1.53	200	.25	4.90	14.4	.244	342.7	1.37	36.9	CLEAR / NO ODOR
1320	1.55	200	.50	4.85	14.8	.277	379.3	1.37	12.0	"
1325	1.56	200	.75	4.85	14.8	.220	395.6	1.50	6.00	"
1330	1.57	200	1.00	4.84	14.7	.220	408.0	1.51	4.8	"
1335	1.57	200	1.25	4.84	14.8	.221	412.3	1.53	4.5	"
1340	1.56	200	1.50	4.84	14.7	.218	415.5	1.57	3.68	"

12-19-19

Remarks: WATER CLEAR FROM START TO FINISH.

* SODIUM PERSULFATE WAS UNDILUTED

Fe^{+2} = 0 mg/L
SODIUM PERSULFATE = 70 mg/L
HYDROGEN PEROXIDE = 20 mg/L

SAMPLING INFORMATION:

Depth to Water Before Sampling: 1.56
Depth sample was acquired: 10.50
Sample Methodology: LOW FLOW
Sample Date/Time: 12-19-19 / 1345
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: N/A
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: SULFATE BY IC

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400

WELL NUMBER MW-15B

SHEET 1 OF 3

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-15B
Field Crew: MW, AD
Well Depth (ft): ~~84.00~~ 82 Purge
DTW (ft): 15.92 Methodology: typhoon
Water Column (ft): 66.08
Well Diameter (in): 6
Gal. Per ft: ~~1.02~~ 1.469
Well volume (gal): 97.1
Depth of Screen (ft): 67.9 - 77.9

Site: LEWIS DRIVE
Date: 12/19/19

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 045651
Pump type (Typhoon)
Pump serial #: 026437 Control Box # 033453

PID reading: opening well 72.4 after venting, if initially high middle of sampling 0.0 closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
~~0858~~	~~START~~	~~PUMP~~								
0902	17.70	3								
0905	20.55	3	6	6.84	15.3	0.180	88.2	4.15	131.0	CLEAR/TURBID/ODOR
0906	22.22	3								
0907	23.75	3								
0908	25.45	3								
0909	26.90	3	30							
0910	28.45	3	33	7.76	15.3	0.167	47.8	3.68	42.6	CLEAR/~~NO~~ ODOR
0911	30.10	3								
0912	31.45	3								
0913	33.05	3								
0914	34.60	3								
0915	35.90	3		8.25	15.3	1.66	58.9	3.60	4.08	CLEAR/ODOR
0916	37.50	3								
0917	39.00	3								
0918	40.40	3								
0919	41.80	3								
0920	43.20	2.1		8.46	15.9	0.166	-0.8	2.78	19.6	CLEAR/ODOR
0921	44.65	2.1								
0922	45.10	2.1								
0923	47.55	2.1								

Remarks:

SAMPLING INFORMATION:

Depth to Water Before Sampling: 41.29 Depth sample was acquired: 70 ft
Sample Methodology: HIGH FLOW
Sample Date/Time: 12/20/19 @ 840/0845
Signed Sampler:
Filtered Metals Collected: Y/(N) Filter Size: N/A
Sample Observations: ODOR/CLEAR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400 | WELL NUMBER MW-15B | SHEET 2 OF 3

TYPHOON AND BAILER SAMPLING LOG

Well Number:	MW-15B	Site:	LEWIS DRIVE
Field Crew:	MW, AD	Date:	12/19/19
Well Depth (ft):	82'	Purge	
DTW (ft):	15.92	Methodology: typhoon	
Water Column (ft):	66.8		
Well Diameter (in):	4		
Gal. Per ft:	1.469		
Well volume (gal):	97.1		
Depth of Screen (ft):	67.9-77.9		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 045651
Pump type: Typhoon
Pump serial #: 024457 | Control Box #: 033453

PID reading: opening well | after venting, if initially high | middle of sampling | closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0924	48.95	2.1								
0925	50.35	2.1		8.65	16.9	0.150	-28.6	2.28	45	CLEAR/ODOR
0926	51.85	2.1								
0927	53.25	2.1								
0928	54.50	2.1								
0929	55.90	2.1								
0930	56.94	2.1		8.57	16.7	0.148	25.8	6.92	119	CLEAR/ODOR
0931	58.35	2.1								
0932	59.45	2.1								
0933	60.82	2.1								
0934	61.87	2.1								
0935	PUMP	WENT	DRY, LOWERED PUMP							
0936	63.00	2.1		6.44	15.1	0.165	9.2	3.72	29.0	
0937	64.35	2.1								
0938	65.55	2.0								
0939	66.62	2.0								
0940	67.88	2.0		8.51	16.9	0.167	-43.8	2.82	39.25	
0941	69.20	2.0								
0943	DRY	LOWERED PUMP								
0944	70.80	2.0								
0945	71.10	2.0		8.37	15.7	0.177	3.4	5.67	6.44	

Remarks:

SAMPLING INFORMATION:

Depth to Water Before Sampling	41.29
Depth sample was acquired	70 FT
Sample Methodology	HIGH FLOW
Sample Date/Time	12/20/19 @ 0840/0845
Signed Sampler	
Filtered Metals Collected	Y / (N)
Filter Size	NA
Sample Observations	CLEAR/ODOR
Parameters (please circle)	(VOCs) SVOCs Dissolved Metals Other

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400 MW-15B | WELL NUMBER MW-15B | SHEET 3 OF 3

TYPHOON AND BAILER SAMPLING LOG

Well Number:	MW-15B	Site:	LEWIS DRIVE
Field Crew:	MW, AD	Date:	12/19/19
Well Depth (ft):	82	Purge	
DTW (ft):	15.92	Methodology: typhoon	
Water Column (ft):	66.8		
Well Diameter (in):	6		
Gal. Per ft:	1.469		
Well volume (gal):	97.1		
Depth of Screen (ft):	67.9 - 77.9		
PID reading:	opening well	after venting, if initially high	middle of sampling / closing well

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 045651
Pump type: Typhoon
Pump serial #: 026437 Control Box # 033453

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0946	72.75									
0947	74.20									
0948	75.55	3.0								
0949	76.90									
0949	PUMP	WENT DRY								
0952	77.10	RECHARGE	MEASUREMENTS	BELOW						
0954	77.10									
1006	~~77~~ 77.50									
1035	74.99									
1050	74.16									
1050	73.67									
1240	69.25									
1400	66.57									
1430	65.61									
12/20 0835	41.29									
12/20 0840	MW-15B-122019									
12/20 0845	MW-15B-D-122019									

Remarks:

~ 120 GALLONS PURGED.

NEED POLYTANK FOR ACCURATE TOTAL VOLUME MEASUREMENTS DURING HIGH FLOW

SAMPLING INFORMATION:

Depth to Water Before Sampling: 41.29 Depth sample was acquired: TOP

Sample Methodology: HIGH FLOW

Sample Date/Time: 12/20/19 @ 0840/0845

Signed Sampler:

Filtered Metals Collected: Y / N Filter Size: N/A

Sample Observations: CLEAR / ODOR

Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400	MW-23
	SHEET 1 OF 1

Typhoon and Bailer Sampling Log

Well Number:	MW-23	Site:	LEWIS DRIVE
Field Crew:	MW, TH	Date:	12/20/19
Well Depth (ft):	20	Purge	
DTW (ft):	9.82	Methodology: low flow	
Water Column (ft):	10.18		
Well Diameter (in):	3		
Gal. Per ft:	0.163		
Well volume (gal):	1.65		
Depth of Screen (ft):	5-20		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 046465
Pump type (please circle): TYPHOON Peristaltic Bladder
Pump serial number: 026437

PID reading: opening well 0.0 after venting, if initially high middle of sampling 0.5 closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1400	START	PUMP	—							
1401	12.65	3.5	—	5.44	16.8	0.075	163.4	3.90	4487	TURB.B/ODOR
1403	—	3.5	10.3							
1404	13.43	3.5	—	5.18	17.3	0.069	175.4	2.83	336	LIGHT TURB.B/ODOR
1405	—	3.5	17.2							
1406	13.57	3.5	—	5.21	17.4	0.068	187.3	2.82	30.2	CLEAR/ODOR
1407	—	—	25.8							
~~1408~~	1407-STOP PUMP, ALLOW TO RECHARGE									
1416	9.98									
1420	MW-23-122019									

Remarks:

25.8 TOTAL GALLONS PURGED

8.3 GALLONS = 5 WELL VOLUMES

SAMPLING INFORMATION:

Depth to Water Before Sampling:	9.98
Depth sample was acquired:	15 ft
Sample Methodology:	HIGH FLOW
Sample Date/Time:	12/20/19 @ 1420
Signed Sampler:	
Filtered Metals Collected:	Y / N
Filter Size:	N/A
Sample Observations:	CLEAR/ODOR
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

HIGH FLOW
Attachment D: ~~Low Flow~~ Sampling Log

JACOBS

PROJECT NUMBER	D3161400	WELL NUMBER	MW-46
		SHEET 1 OF 1	

Typhoon and Bailer Sampling Log

Well Number:	MW-46	Site:	LEWIS DRIVE
Field Crew:	MW, TH	Date:	12/20/19
Well Depth (ft):	17.05	Purge	
DTW (ft):	8.23	Methodology: low flow	
Water Column (ft):	8.82		
Well Diameter (in):	2		
Gal. Per ft:	0.163		
Well volume (gal):	1.44		
Depth of Screen (ft):	9-14		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 046465
Pump type (please circle): (TYPHOON) Peristaltic Bladder
Pump serial number: 038215

PID reading: opening well | after venting, if initially high | middle of sampling | closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1444	START	PUMP								
1445	WELL WENT DRY, INTERMITTENT WATER PUMPING FROM WELL									
	AFTER RECHARGE.									
1447	—	— ☆								
1448	12.45	— ☆								
1449	RESTART PUMP									
1450		— ☆		5.13	16.8	0.102	352.1	20.45	449	CLEAR / ODOR
1450	WELL BECAME DRY.									
1451	RECHARGED BACK TO			9 ft ~~BG~~ BTOC.						
1510	MW-46-122019			VOC SULFATE						

Remarks:
SWELL VOLUMES = 7.2 GALLONS
HYDROGEN PEROXIDE = 15 mg/L
Fe^{2+} = 0.0 mg/L
10.3 TOTAL GALLONS PURGED. SODIUM PERSULFATE = ~~##~~ 70 mg/L

SAMPLING INFORMATION:

Depth to Water Before Sampling:	9.0 ft	Depth sample was acquired:	~~MSL~~ 11ft
Sample Methodology:	HIGH FLOW		
Sample Date/Time:	12/20/19 @ 1510		
Signed Sampler:			
Filtered Metals Collected:	Y / (N)	Filter Size:	NA
Sample Observations:	TURBID / ODOR		
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals
Other:	SULFATE		

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER D3161400 | WELL NUMBER ~~MW-11A~~ MW-12B | SHEET OF

Typhoon and Bailer Sampling Log

Well Number:	MW-12B	Site:	LEWIS DRIVE
Field Crew:	MW, TH	Date:	12/20/19
Well Depth (ft):	43	Purge	
DTW (ft):	12.52	Methodology: low flow	
Water Column (ft):	30.48		
Well Diameter (in):	6		
Gal. Per ft:	1.469		
Well volume (gal):	44.78		
Depth of Screen (ft):	33-43		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 046465

Pump type (please circle): (TYPHOON) Peristaltic Bladder

Pump serial number: 026437

PID reading: opening well 0.0 after venting, if initially high middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min) (CLEAR/MIN)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0943	START PUMP									(E)
0945	13.33	3	1	6.60	15.7	0.058	66.8	4.20	1150	TURBID/NO ODOR
0950	13.43	3	1	5.91	16.2	.051	70.8	3.25	241.3	"
0955	13.51	3	1	5.93	16.1	0.049	80.6	~~3.45~~	61.20	CLEARING UP/NO ODOR
1000	13.55	3	53	5.8	16.2	0.049	95.8	2.91 2.65	15.05	CLEAR/NO ODOR
1005	13.58	3	1	5.67	16.4	0.048	101.1	1.40	9.56	CLEAR/NO ODOR
1010	13.64	3	90	5.63	16.4	0.048	99.7	2.38	0	CLEAR/NO ODOR
1015	13.70	3	1	5.59	16.3	0.048	107.0	1.45	0	CLEAR/NO ODOR
1020	13.87	3	140	5.63	16.3	0.048	107.5	2.27	0	"
1025	14.02	3	150	5.60	16.4	0.048	110.4	2.22	0	"
1030	14.21	3	1	5.64	16.3	0.048	112.2	3.15	0	"
1035	14.31	3	170	5.69	16.3	0.047	115.0	3.30	0	CLEAR/NO ODOR
1040	14.40	3	180	5.68	16.4	0.047	114.6	2.55	0	"
1045	14.48	3	200	5.71	16.2	0.047	125.3	2.68	0	"
1050	14.51	3	215	5.67	16.4	0.047	122.8	2.42	0	"
1055	14.54	3	235	5.75	16.1	0.047	129.9	2.98	0	"
1115	15.80									(E)
1115	MW-12B-122019									
			12/20/19							

Remarks:

223
5 SWELL VOLUMES = 223 GALLONS

TOTAL PURGED = 235 GALLONS

SAMPLING INFORMATION:

Depth to Water Before Sampling:	15.80	Depth sample was acquired:	38 ft
Sample Methodology:	HIGH FLOW		
Sample Date/Time:	12/20/19 @ 1115		
Signed Sampler:			
Filtered Metals Collected:	Y / (N)	Filter Size:	N/A
Sample Observations:	CLEAR/ NO ODOR		
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals Other:

Attachment B

(1)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-39

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 02/11/20	Well Depth (ft): 13.09
Well Number: MW-39	DTW (ft): 3.69
Field Crew: MW, TH, CS	Water Column (ft): 9.4

Remarks:

MW-39-021120

SAMPLING INFORMATION:

Depth sample was acquired: 9ft

Sample Date/Time: 02/11/20 @

Signed Sampler:

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-40

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 02/11/20	Well Depth (ft): 13.21
Well Number: MW-40	DTW (ft): 2.11
Field Crew: MW, TH, CS	Water Column (ft): 11.10

Remarks:

MW-40-021120

SAMPLING INFORMATION:

Depth sample was acquired: 8 ft

Sample Date/Time: 02/11/20 @

Signed Sampler:

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-41

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 02/11/20	Well Depth (ft): 13.19
Well Number: MW-41	DTW (ft): 3.39
Field Crew: MW, TH, CS	Water Column (ft): 9.8

Remarks:

MW-41-021120

SCREEN 5-10 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 9 ft

Sample Date/Time: 02/11/20 @

Signed Sampler:

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(2)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-55

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC		
Date:	Well Depth (ft):	23.2
Well Number:	DTW (ft):	14.31
Field Crew:	Water Column (ft):	8.89
Remarks:		

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-34

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC		
Date: 02/11/20	Well Depth (ft):	7.85
Well Number: MW-34	DTW (ft):	2.65
Field Crew: TH, CS, MW	Water Column (ft):	5.20
Remarks: MW-34-021120		

SAMPLING INFORMATION:

Depth sample was acquired:	6 ft
Sample Date/Time:	02/11/20 @ 1525
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC		
Date:	Well Depth (ft):	
Well Number:	DTW (ft):	
Field Crew:	Water Column (ft):	
Remarks:		

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

(3)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-20

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	02/11/20	Well Depth (ft):	19.90
Well Number:	MW-20	DTW (ft):	6.65
Field Crew:	MW, TH, CS	Water Column (ft):	12.75

Remarks:

★ DUPLICATE ★

SAMPLING INFORMATION:

Depth sample was acquired:				
Sample Date/Time:				
Signed Sampler:				
Sample Observations:				
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-26

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:		Well Depth (ft):	17.20
Well Number:	MW-26	DTW (ft):	1.37
Field Crew:	MW, TH, CS	Water Column (ft):	15.83

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:				
Sample Date/Time:				
Signed Sampler:				
Sample Observations:				
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-51

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	02/11/20	Well Depth (ft):	22.5
Well Number:	MW-51	DTW (ft):	16.14
Field Crew:	MW, TH, CS	Water Column (ft):	6.36

Remarks:

MW-51-021120

SAMPLING INFORMATION:

Depth sample was acquired:	19ft			
Sample Date/Time:	02/11/20 @ 1635			
Signed Sampler:				
Sample Observations:	CLEAR, NO ODOR			
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

(4)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-52

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	02/11/20	Well Depth (ft):	28.5
Well Number:	MW-52	DTW (ft):	15.11
Field Crew:	MW, TH, CS	Water Column (ft):	13.39

Remarks: MW-52-021120

SAMPLING INFORMATION:

Depth sample was acquired:	~~22ft~~ @ ~~19ft~~ @ 27ft
Sample Date/Time:	02/11/20 @ 1705
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-53

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:		Well Depth (ft):	21.8
Well Number:	MW-53	DTW (ft):	5.18
Field Crew:	MW, TH, CS	Water Column (ft):	16.62

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-54

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:		Well Depth (ft):	25.2
Well Number:	MW-54	DTW (ft):	9.80
Field Crew:	MW, TH, CS	Water Column (ft):	15.40

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER

WELL NUMBER MW-12B

SHEET 1 OF 2

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-12B
Field Crew: TH, CS
Well Depth (ft): 43'
DTW (ft): 10.93
Water Column (ft): 32.07
Well Diameter (in): 6"
Gal. Per ft: 1.469
Well volume (gal): 47.11
Depth of Screen (ft):

Purge
Methodology: typhoon

Site: LEWIS DRIVE
Date: 2-11-20

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 046465
Pump type
Pump serial #: 029227/031360
Typhoon Control Box # 033473/021467

PID reading: opening well 5.0 after venting, if initially high /middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc		NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1250	11.16	5.5	20	7.04	17.0	.119	41.1	3.57	35.41	LIGHT BRAWN/NO ODOR
1252	11.16									
1256	11.13	5.5	55	~~6.44~~ 5	~~16.9~~ 18.6	~~0.091~~ 0.119	~~73.4~~ 56.4	~~7.38~~ 3.96	~~43.35~~ 7.83	Clear/no odor
1258	11.11									
1300	11.09									
1302	11.08	5.5	75	5.77	16.9	0.092	~~6.67~~ 62.7	3.70	4.83	clear/no odor
1304	11.07									
1306	11.06									
~~1307~~	Inverter	overheated - temp. paused								
1311	11.00	5.5	110	5.81	16.9	0.095	59.8	3.65	6.01	clear/strong odor
1313	10.99									
1315	10.00									
1316	9.79	5.5	140	5.67	16.8	0.091	73.8	3.36	0.32	Clear/slight odor
1318	9.51									
1320	9.37									
1322	9.17	5.5	160	5.71	16.9	0.093	66.5	4.39	1.65	clear/slight odor
1324	9.13									
1326	9.19									
1328	9.24	5.5	190	5.69	16.8	0.091	76.5	3.72	0.58	Clear/no odor
1600	11.47	PUMP TO BE RESTARTED								
1613	12.13	6	220	6.63	17.0	0.097	49.2	3.54	3.83	Clear/no odor

Remarks: WL FLUXUATING BETWEEN 11.00' & 9.00'
1330 PUMPING PAUSED TO EMPTY TANK

SAMPLING INFORMATION:

Depth to Water Before Sampling: 10.58 Depth sample was acquired: 40
Sample Methodology: HYDRASLEEVE
Sample Date/Time: 02-11-20/
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: N/A
Sample Observations: CLEAR/NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER

WELL NUMBER MW-123

SHEET 2 OF 2

TYPHOON AND BAILER SAMPLING LOG

Well Number:

Field Crew:

Well Depth (ft): Purge

DTW (ft): Methodology: typhoon

Water Column (ft): SEE PG 1

Well Diameter (in):

Gal. Per ft:

Well volume (gal):

Depth of Screen (ft):

Site:

Date:

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #:

Pump type Typhoon

Pump serial #r: Control Box #

PID reading: opening well after venting, if initially high middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,		NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1618	12.16	6	250	5.91	16.9	0.093	36.5	3.97	0	clear/no odor
1624	11.90	6	280	5.64	16.8	0.089	58.8	3.15	0	CLEAR/NO ODOR
1630	11.81	6	310	5.72	16.8	0.087	58.3	3.84	0	clear/no odor
1635	11.69	6	340	5.59	16.8	0.086	76.8	3.72	0	clear/no odor
1640	11.61	6.5	375	5.6	16.8	0.084	85.0	3.60	0	clear/no odor
1645	11.52	6.5	410	5.51	16.7	0.082	90.3	3.90	0	clear/no odor
1650	11.50	6.5	445	5.62	16.7	0.083	88.8	3.75	0	"

02-11-20

Remarks:

SAMPLING INFORMATION:

Depth to Water Before Sampling: Depth sample was acquired:

Sample Methodology: SEE PG 1

Sample Date/Time:

Signed Sampler:

Filtered Metals Collected: Y / N Filter Size:

Sample Observations:

Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

Recharge

MW-12B

1650	- 11.56
1652	- 10.82
1654	- 10.75
1656	- 10.70
1658	- 10.66
1700	- 10.63
1702	- 10.61
1704	- 10.59
1706	- 10.55
1708	- 10.58
1710	- 10.58

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER KMLDOM20 | WELL NUMBER MW-37 | SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	MW-37	Site:	LEWIS DRIVE
Field Crew:	MW, TH, CS	Date:	2/11/20
Well Depth (ft):	18.11	Purge Methodology:	low flow
DTW (ft):	2.76		
Water Column (ft):	15.35		
Well Diameter (in):	2		
Gal. Per ft:	0.166		
Well volume (gal):	2.54		
Depth of Screen (ft):	5-15		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 042925

Pump type (please circle): (Peristaltic) Bladder

Pump serial number: 010570

PID reading: 0.0 opening well | after venting, if initially high | middle of sampling 0.0 | closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1310	START PUMP									(2)
1320	2.95	200	0.75	4.99	15.1	0.129	254.8	2.47	2.48	CLEAR/NO ODOR
1325	2.94	200	1.00	5.01	15.5	0.128	264.2	2.42	2.21	CLEAR/NO ODOR
1330	2.90	200	1.20	5.06	15.5	0.127	271.4	2.41	2.16	CLEAR/NO ODOR
1335	2.92	200	1.30	5.08	15.5	0.128	275.3	2.44	3.45	CLEAR/NO ODOR
1340	2.95	200	1.50	5.06	15.5	0.126	280.3	2.33	4.35	CLEAR/NO ODOR
1345	2.95	200	1.65	5.07	15.5	0.124	284.5	2.28	4.66	CLEAR/NO ODOR
1350	2.95	200	2.00	5.07	15.6	0.123	288.9	2.25	5.06	CLEAR/NO ODOR
1355	COLLECT SAMPLE MW-37-0211 20									

Remarks:

Fe^{2+} = 0.0

PERSULFATE = 30 ppm

H_2O_2 = 2.5 ppm

SAMPLING INFORMATION:

Depth to Water Before Sampling: 2.95 | Depth sample was acquired: 14 ft

Sample Methodology: LOW FLOW

Sample Date/Time: 02/11/20 @ 1355

Signed Sampler:

Filtered Metals Collected: Y / (N) Filter Size: NA

Sample Observations: CLEAR/NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: SULFATE

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER KMLDOM20 | WELL NUMBER MW-38 | SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	MW-38	Site:	LEWIS DRIVE
Field Crew:	TH, CS, MW	Date:	02/11/20
Well Depth (ft):	11.52	Purge	
DTW (ft):	0.6	Methodology: low flow	
Water Column (ft):	10.92		
Well Diameter (in):	2		
Gal. Per ft:	0.163		
Well volume (gal):	1.78		
Depth of Screen (ft):	4-9		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 042925

Pump type (please circle): (Peristaltic) Bladder

Pump serial number: 010570

PID reading: 0.0 opening well | after venting, if initially high | middle of sampling 0.0 | closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1425	START PUMP									
1430	1.14	200	~~0.00~~ 0.25	4.88	16.7	0.316	278.5	0.36	5.30	CLEAR/NO ODOR
1435	1.10	200	0.60	4.89	16.8	0.316	308.8	0.02	3.61	CLEAR/NO ODOR
1440	~~1.68~~ 1.10	200	1.00	4.89	16.8	0.315	321.2	0.00	4.49	CLEAR/NO ODOR
1445	1.10	200	1.25	4.89	16.7	0.314	330.3	0.00	7.40	CLEAR/NO ODOR
1450	1.10	200	1.45	4.89	16.7	0.314	338.4	0.00	26.30	CLEAR/NO ODOR
1455	1.10	200	1.70	4.89	16.7	0.314	345.3	0.00	28.40	CLEAR/NO ODOR
1500	1.12	200	1.90	4.89	16.7	0.313	352.2	0.00	33.31	CLEAR/NO ODOR
1505	1.12	200	2.40	4.89	16.6	0.312	356.8	0.0	39.36	CLEAR/NO ODOR
1510	1.12	200	2.60	4.89	16.5	0.311	360.6	0.0	31.80	CLEAR/NO ODOR
1515	MW-38-021120									

Remarks:

MW-38-021120

Fe^{2+} = 0.0 mg/L

H_2O_2 = ~~30~~ < PPM AND > PPM

PERSULFATE = 56 PPM

SAMPLING INFORMATION:

Depth to Water Before Sampling:	1.12
Depth sample was acquired:	9 ft
Sample Methodology:	LOW FLOW
Sample Date/Time:	02/11/20 @ 1515
Signed Sampler:	
Filtered Metals Collected:	Y (N)
Filter Size:	NA
Sample Observations:	CLEAR/NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other: SULFATE

40.8
9.39

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER KMLDOM20 | WELL NUMBER MW-17B | SHEET 1 OF 2

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-17B
Field Crew: TH, CS
Well Depth (ft): 27.49
DTW (ft): 11.10
Water Column (ft): 16.39
Well Diameter (in): 6"
Gal. Per ft: 1.469
Well volume (gal): 50.19
Depth of Screen (ft): 17-27'

Purge
Methodology: typhoon
10" BORE HOLE 4.08

Site: LEWIS DRIVE
Date: 02-12-20

Diameter	Gal. Per Foot
2"	0.163
3"	0.367
4"	0.653

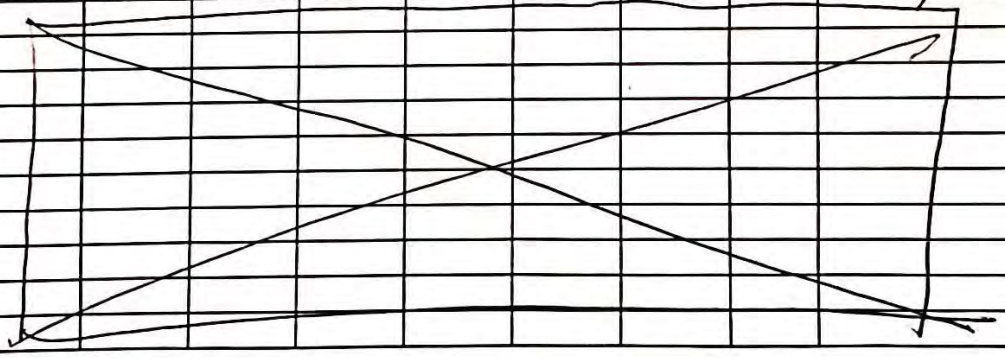
Diameter	Gal. Per Foot
5"	1.02
(6")	1.469
8"	2.611

Water level indicator, serial #:
Pump type: Typhoon
Pump serial #r:
Control Box #

PID reading: opening well 1635 after venting, if initially high 81.8 middle of sampling 399.0 closing well 734.2

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc		NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1600	11.04		BEGIN PURGE							
1605	19.95	6	30	5.95	19.7	0.454	11.0	3.68	90.99	SLIGHT TURBID/STRONG ODOR
1610	19.42	6	55	5.90	20.1	0.418	14.7	2.12	23.65	CLEAR/STRONG ODOR
1615	19.13	6	80	5.83	20.1	0.392	26.7	1.85	5.90	clear/strong odor
1620	19.07	6	105	5.83	20.1	0.348	24.1	1.80	4.75	clear/slight odor
1625	19.13	6	130	5.93	20.1	0.377	26.5	1.76	3.60	clear/no odor
1630	19.17	6	160	5.80	20.1	0.372	29.1	2.07	4.60	CLEAR/no odor
1635	19.10	5	185	5.84	20.0	0.366	30.7	2.53	4.23	"
1640	18.99	5	210	5.78	19.7	0.362	38.4	2.45	4.10	"
1645	18.97	5	235	5.85	19.7	0.359	32.4	8.01	1.05	"
1650	18.97	5	260	5.76	19.7	0.362	38.7	3.58	3.58	DO = 1.68 "
1653	14.40									
1655	13.58									
1657	12.95									
1659	12.45									
1701	12.15									
1703	11.97									
1705	11.85									
1707	11.75									
1710	11.70									
1712	11.63									



Remarks:
Contd. on back
Sheen on Sample in HS. Lab dilute

SAMPLING INFORMATION:

Depth to Water Before Sampling: 11.38
Depth sample was acquired: 23.0
Sample Methodology: HS
Sample Date/Time: 2/12/2020 / 1727
Signed Sampler:
Filtered Metals Collected: Y / N Filter Size: NA
Sample Observations: CLEAR/SLIGHT ODOR
Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

SHEET 2 OF 2

time	DTW (ft)
1714	11.58
1716	11.53
1718	11.50
1720	11.48
1722	11.44
1724	11.42
1726	11.40
1728	11.38
1730	11.37

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER KMLOOM20 | WELL NUMBER MW-23 | SHEET 1 OF 1

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-23
Field Crew: TH, CS
Well Depth (ft): 23.12
DTW (ft): 4.95
Water Column (ft): 18.17
Well Diameter (in): 2
Gal. Per ft: .163
Well volume (gal): 2.96
Depth of Screen (ft): 5-20 7.91-22.91 btoc
PID reading: opening well [illegible].7 after venting, if initially high middle of sampling closing well

Site: LEWIS DRIVE
Date: 2-12-20

Purge Methodology: typhoon

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
(2")	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #:
Pump type Typhoon
Pump serial #: Control Box #

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc		NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1455	4.95	BEGIN PURGE								DARK BROWN/STRONG ODOR
1500	6.85	2	5	5.62	16.1	0.196	145.2	2.56	1035	"
1505	7.00	2	15	5.21	16.2	0.181	156.6	2.12	142.2	"
1510	5.97	1	20	5.12	16.7	0.179	178.3	2.46	232.05	"
1515	[illegible]	STOPPED PURGE								
1518	5.25	START RECHARGE= DATA COLLECTION								
1520	5.07									
1522	5.05									
1524	5.03									
1526	5.03									
1528	5.00									
1530	5.00									
1532	5.00	END RECHARGE DATA COLLECTION								
1625	COLLECT	MW-23-021220 AND MW-23-D-021220								

02/12/20

Remarks: 14.80 = 5 WELL VOLUMES
WELL SILTED UP. FLOW SLOWED ONCE PUMP GOT CLOGGED.

SAMPLING INFORMATION:

Depth to Water Before Sampling: 5.00
Depth sample was acquired: 19 Ft bTOC
Sample Methodology: BAILER
Sample Date/Time: 02/12/20 @ 1625
Signed Sampler:
Filtered Metals Collected: Y / N Filter Size: N/A
Sample Observations: TURBID / ODOR
Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: KMLDOM20

WELL NUMBER: MW-45

SHEET 1 OF 1

TYPHOON AND BAILER SAMPLING LOG

Well Number:	MW-45	Site:	LEWIS DRIVE
Field Crew:	MW, TH, CS	Date:	02/12/20
Well Depth (ft):	14.45	Purge Methodology:	typhoon
DTW (ft):	8.91		
Water Column (ft):	5.54		
Well Diameter (in):	2		
Gal. Per ft:	~~0.90~~ 0.163		
Well volume (gal):	090		
Depth of Screen (ft):	4.42 - 14.42		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 042925

Pump type: TYPHOON ~~Typhoon~~

Pump serial #: 010570 Control Box #:

PID reading: opening well | after venting, if initially high | middle of sampling | closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	0.3	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1530	START PUMP									
1535	10.00	0.3	1	4.63	17.0	0.058	258.6	6.57	85.86	CLEAR/NO ODOR
1540	10.35	0.3	2.6	4.48	17.2	0.070	362.8	6.34	121.66	CLEAR/NO ODOR
1545	10.54	0.3	3.5	4.45	17.3	0.074	381.5	6.15	119.41	CLEAR/NO ODOR
1550	10.63	0.3	4.6	4.44	17.3	0.081	398.2	6.32	158.62	CLEAR/NO ODOR
1555	10.67	0.3	5.5	4.45	17.4	0.091	409.8	6.22	187.09	CLEAR/NO ODOR
1600	COLLECT SAMPLE		MW-45-021220							
1602	10.70	START RECOVERY			DATA COLLECTION					
1603	10.21									
1604	9.95		TIME	DTW						
1605	9.86		1616	9.06						
1606	9.66		1617	9.03	END RECOVERY DATA COLLECTION					
1607	9.56									
1608	9.46									
1609	9.40									
1610	9.31									
1611	9.26									
1612	9.21									
1613	9.16									
1614	9.13									
1615	9.09									

Remarks:

MW-45-021220

5 X WELL VOLUME = 4.5 GALLONS

~~5.5 GAL~~

TOTAL 6.5 GALLONS PURGED

SAMPLING INFORMATION:

Depth to Water Before Sampling: 10.69

Depth sample was acquired: 13 FT

Sample Methodology: LOW FLOW

Sample Date/Time: 2/12/20 @ 1600

Signed Sampler:

Filtered Metals Collected: Y (N) Filter Size: NA

Sample Observations: CLEAR/NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(3)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-20

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 02/11/20	Well Depth (ft): 19.40
Well Number: MW-20	DTW (ft): 6.65
Field Crew: MW, TH, CS	Water Column (ft): 12.75

Remarks:

☆ DUPLICATE ☆

MW-20-021120

MW-20-D-021120

SAMPLING INFORMATION:

Depth sample was acquired: ~~02/12/20~~ 15 Ft	
Sample Date/Time: 02/12/20 @ 1740 AND 1241	
Signed Sampler:	
Sample Observations: TURBID / ODOR / SHEEN	
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:	

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-26

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 02/12/20	Well Depth (ft): 17.20
Well Number: MW-26	DTW (ft): 1.37
Field Crew: MW, TH, CS	Water Column (ft): 15.83

Remarks:

MW-26-021220

SAMPLING INFORMATION:

Depth sample was acquired: 12 Ft	
Sample Date/Time: 02/12/20 @ 1800	
Signed Sampler:	
Sample Observations: CLEAR / NO ODOR	
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:	

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-51

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 02/11/20	Well Depth (ft): 22.05
Well Number: MW-51	DTW (ft): 16.14
Field Crew: MW, TH, CS	Water Column (ft): 16.34

Remarks:

MW-51-021120

SAMPLING INFORMATION:

Depth sample was acquired: 19 Ft	
Sample Date/Time: 02/11/20 @ 1635	
Signed Sampler:	
Sample Observations: CLEAR, NO ODOR	
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:	

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: KMLDOM20

WELL NUMBER: SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	MW-57	Site:	LEWIS DRIVE
Field Crew:	MW, TH, CS	Date:	02/12/20
Well Depth (ft):	13.90	Purge Methodology:	low flow
DTW (ft):	4.75		
Water Column (ft):	9.15		
Well Diameter (in):	2		
Gal. Per ft:	0.163		
Well volume (gal):	1.49		
Depth of Screen (ft):	3 - 13		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 046465

Pump type (please circle): (Peristaltic) Bladder

Pump serial number: 010570

PID reading: opening well | after venting, if initially high | middle of sampling | closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1100	START PUMP									(MW)
1105	4.84	180	0.2	4.47	15.3	1.989	414.8	8.79	3.61	CLEAR / NO ODOR
1110	4.84	180	0.5	4.45	15.4	1.986	435.7	8.71	2.32	CLEAR / NO ODOR
1110	4.84	180	0.7	4.44	15.5	1.982	450.8	8.59	1.91	CLEAR / NO ODOR
1115	4.86	180	1.0	4.44	15.6	1.973	461.2	8.47	0.86	CLEAR / NO ODOR
1120	4.86	180	1.3	4.44	15.6	1.969	470.1	8.30	1.51	CLEAR / NO ODOR
1125	4.86	180	1.6	4.44	15.6	1.960	476.1	8.22	0.90	CLEAR / NO ODOR
1130	4.86	180	1.8	4.44	15.6	1.960	477.7	8.19	0.78	CLEAR / NO ODOR
1135	4.86	180	2.0	4.44	15.7	1.955	484.3	8.15	0.79	CLEAR / NO ODOR
1140	COLLECT	SAMPLE	MW-57-021220							

02/12/20

Remarks:

Fe^{2+} = 0.0 mg/L

H_2O_2 = FULLY CONCENTRATED = 90ppm

PERSULFATE = 1:25 DILUTION = 21 ppm (21 x 25 = 525ppm)

MW-57-021220

SAMPLING INFORMATION:

Depth to Water Before Sampling:	4.86	Depth sample was acquired:	12 ft
Sample Methodology:	LOW FLOW		
Sample Date/Time:	02/12/20		
Signed Sampler:			
Filtered Metals Collected:	Y / (N)	Filter Size:	NA
Sample Observations:	CLEAR / NO ODOR		
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals
Other:	SULFATE		

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: KMLDOM20

WELL NUMBER: SHEET 1 OF 1

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-07
Field Crew: MW, TH, CS
Well Depth (ft): 13.60
DTW (ft): 9.11
Water Column (ft): 4.91
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 3.75 (5X WELL VOL)
Depth of Screen (ft): 3.5 - 13.5
PID reading: opening well 26.20 after venting, if initially high middle of sampling ~~747~~ closing well

Site: LEWIS DRIVE
Date: ~~02/20/20~~ 02/12/20

Purge Methodology: typhoon

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.387	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 042925
Pump type
Pump serial #: 031360 (YSI) Typhoon Control Box # 021467

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,		NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1335	8.96	WITH PUMP IN WELL								
1343	9.11 DTP / DTW W/O PUMP									
1345	9.02 DTP / DTW									
1347	8.95 DTP / DTW									
1400	12.72	—	VIA	BAILER / BEGIN RECHARGE DATA COLLECTION						
1402	12.08									
1404	10.90									
1406	10.65									
1408	10.35									
1410	10.06									
1412	9.86									
1414	9.72									
1416	9.56									
1418	9.48									
1420	9.41									
1422	9.35									
1424	9.26									
1426	9.21									
1428	9.16	END	RECHARGE DATA COLLECTION							
			02/12/20							

Remarks: 3.75 GALLONS BAILED TO EQUAL 5 WELL VOLUMES
NO YSI PARAMETERS TAKEN DUE TO SHEEN

SAMPLING INFORMATION:

Depth to Water Before Sampling: 9.12 Depth sample was acquired: 10 FT
Sample Methodology: HYDRASLEEVE
Sample Date/Time: 02/13/20 @ 1450
Signed Sampler:
Filtered Metals Collected: Y (N) Filter Size: NA
Sample Observations: TURBID / STRONG ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER KMLDOM20 | WELL NUMBER MW-15B | SHEET 1 OF 2

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-15B
Field Crew: TH, CS, MW
Well Depth (ft): 73.10
DTW (ft): 13.75
Water Column (ft): 59.35
Well Diameter (in): 6
Gal. Per ft: 1.469
Well volume (gal): 113.2
Depth of Screen (ft): ~~73.10~~ 67.9-77.9
PID reading: opening well 103.3 after venting, if initially high 2.9 middle of sampling closing well

Site: LEWIS DRIVE
Date: 02-12-20
Purge
Methodology: typhoon

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	(6")	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 045080
Pump type: Typhoon
Pump serial #: 029227 Control Box # 021467

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,		NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0927	13.46	BEGIN PURGE								
0932	18.40	2	10	7.85	17.0	0.540	168.2	2.93	56.84	GRAY/SLIGHT ODOR
0937	24.43	2	20	8.13	17.4	0.511	27.1	3.20	42.22	"
0942	29.10	2	30	8.23	17.5	0.507	-16.5	2.50	33.29	"
0947	35.95	2	40	8.32	17.5	0.507	-141.2	1.54	12.89	CLEAR/SLIGHT ODOR
0952	39.20	2	50	8.35	17.5	0.504	-115.2	1.97	11.63	"
0957	43.15	1	55	8.38	17.7	0.501	-175.2	1.36	12.92	"
1002	47.50	2	65	8.32	17.6	0.491	-121.2	1.21	29.68	"
1007	53.30	2	75	8.28	17.6	0.418	-152.7	1.53	41.45	"
1012	57.45	2	85	8.20	17.7	0.484	-177.2	1.76	61.97	LIGHT BROWN/SLIGHT ODOR
1017	61.40	2	95	8.18	17.6	0.484	-170.5	1.23	72.38	"
1022	65.06	2	105	8.20	17.6	0.483	-137.5	1.86	82.75	"
1027	69.30	2	115	8.22	17.7	0.483	-64.5	1.52	85.42	"
1032	72.15	2	125	8.11	18.0	0.483	-106.2	1.00	81.23	"
10:37	73.98	1	130	8.11	18.5	0.488	-136.2	0.53	78.16	"
1042	75.45	1	135	8.15	18.6	0.488	-104.9	0.59	69.74	"
1047	77.25	WELL DRY								
1055	75.85	AFTER REMOVING PUMP + TUBING								
1055	BEGIN	RECHARGE	DATA COLLECTION (SEE PAGE 2)							

Remarks:
WTL AFTER DEPLOYING PUMP 13.46
PUMP STOPPED @ 0954 TO CLEAN SCREEN

SAMPLING INFORMATION:

Depth to Water Before Sampling: 35.81 Depth sample was acquired: 70 FT
Sample Methodology: BAILER
Sample Date/Time: 02/13/20 @ 1455
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: NA
Sample Observations: CLEAR / STRONG ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: KMLDOM20

WELL NUMBER: SHEET 2 OF 2

TYPHOON AND BAILER SAMPLING LOG

Well Number:	MW-15B	Site:	LEWIS DRIVE
Field Crew:	TH, CS, MW	Date:	02/12/20 TO 2/13/20
Well Depth (ft):	73.10	Purge	
DTW (ft):	13.75	Methodology: typhoon	
Water Column (ft):	59.35		
Well Diameter (in):	6 - 10		
Gal. Per ft:	1.469		
Well volume (gal):	113.2		
Depth of Screen (ft):	67.9 - 77.9		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 645080

Pump type: Typhoon

Pump serial #: 029227 Control Box # 021467

PID reading: opening well 103.3 after venting, if initially high 2-9 middle of sampling closing well 0

Field Parameters

	Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
	Stabilization	<0.33' or 4" & <5% of wc,		NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
2/12	1055	75.85	START RECOVERY WELL DATA COLLECTION								
	1105	75.32									
	1115	74.80									
	1125	74.27									
	1155	72.23									
	1320	69.10									
	1427	66.78									
	1515	65.25									
	1705	61.81									
	1821	59.58									
2/13	0900	41.01									
	1511	35.81	END RECOVERY WELL DATA COLLECTION								
	1655	MW-15B-021320									

02/13/20

Remarks:

MW-15B-021320

SAMPLING INFORMATION:

Depth to Water Before Sampling:	35.81	Depth sample was acquired:	70 ft
Sample Methodology:	BAILER		
Sample Date/Time:	02/13/20 @ 1655		
Signed Sampler:			
Filtered Metals Collected:	Y / (N)	Filter Size:	NA
Sample Observations:	CLEAR / STRONG ODOR		
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals Other:

Attachment B

1

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-39

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 02/11/20	Well Depth (ft): 13.09
Well Number: MW-39	DTW (ft): 3.69
Field Crew: MW, TH, CS	Water Column (ft): 9.4

Remarks:

MW-39-021120

SAMPLING INFORMATION:

Depth sample was acquired: 9ft

Sample Date/Time: 02/11/20 @

Signed Sampler:

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-40

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 02/11/20	Well Depth (ft): 13.21
Well Number: MW-40	DTW (ft): 2.11
Field Crew: MW, TH, CS	Water Column (ft): 11.10

Remarks:

MW-40-021120

SAMPLING INFORMATION:

Depth sample was acquired: 8 ft

Sample Date/Time: 02/11/20 @

Signed Sampler:

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-41

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 02/11/20	Well Depth (ft): 13.19
Well Number: MW-41	DTW (ft): 3.39
Field Crew: MW, TH, CS	Water Column (ft): 9.8

Remarks:

MW-41-021120

SCREEN 5-10 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 9 ft

Sample Date/Time: 02/11/20 @

Signed Sampler:

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(2)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-55

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC		
Date:	Well Depth (ft):	25.2
Well Number:	DTW (ft):	16.31
Field Crew:	Water Column (ft):	8.89
Remarks:		

SAMPLING INFORMATION:

Depth sample was acquired:				
Sample Date/Time:				
Signed Sampler:				
Sample Observations:				
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-34

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC		
Date: 02/11/20	Well Depth (ft):	7.85
Well Number: MW-34	DTW (ft):	2.65
Field Crew: TH, CS, MW	Water Column (ft):	5.20
Remarks: MW-34-021120		

SAMPLING INFORMATION:

Depth sample was acquired:	6 ft			
Sample Date/Time:	02/11/20 @ 1525			
Signed Sampler:				
Sample Observations:	CLEAR / NO ODOR			
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals	Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC		
Date:	Well Depth (ft):	
Well Number:	DTW (ft):	
Field Crew:	Water Column (ft):	
Remarks:		

SAMPLING INFORMATION:

Depth sample was acquired:				
Sample Date/Time:				
Signed Sampler:				
Sample Observations:				
Parameters (please circle):	VOCs	SVOCs	Dissolved Metals	Other:

(3)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-20

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	02/11/20	Well Depth (ft):	19.40
Well Number:	MW-20	DTW (ft):	6.65
Field Crew:	MW, TH, CS	Water Column (ft):	12.75

Remarks:

☆ DUPLICATE ☆

MW-20-021120

MW-20-D-021120

SAMPLING INFORMATION:

Depth sample was acquired:	~~02/12/~~ 15 Ft
Sample Date/Time:	02/12/20 @ 1740 AND 1741
Signed Sampler:	
Sample Observations:	TURBID / ODOR / SHEEN
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-26

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	02/12/20	Well Depth (ft):	17.20
Well Number:	MW-26	DTW (ft):	1.37
Field Crew:	MW, TH, CS	Water Column (ft):	15.83

Remarks:

MW-26-021220

SAMPLING INFORMATION:

Depth sample was acquired:	12 Ft
Sample Date/Time:	02/12/20 @ 1800
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-51

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	02/11/20	Well Depth (ft):	22.5
Well Number:	MW-51	DTW (ft):	16.14
Field Crew:	MW, TH, CS	Water Column (ft):	6.36

Remarks:

MW-51-021120

SAMPLING INFORMATION:

Depth sample was acquired:	19 Ft
Sample Date/Time:	02/11/20 @ 1635
Signed Sampler:	
Sample Observations:	CLEAR, NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-52

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 02/11/20	Well Depth (ft): 28.5
Well Number: MW-52	DTW (ft): 15.11
Field Crew: MW, TH, CS	Water Column (ft): 13.39

Remarks: MW-52-021120

SAMPLING INFORMATION:

Depth sample was acquired: ~~22 PT~~ @ ~~19 PT~~ @ 27 PT

Sample Date/Time: 02/11/20 @ 1705

Signed Sampler:

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-53

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 02/13/20	Well Depth (ft): 21.8
Well Number: MW-53	DTW (ft): 5.18
Field Crew: MW, TH, CS	Water Column (ft): 16.62

Remarks: MW-53-021320

SAMPLING INFORMATION:

Depth sample was acquired: 17 PT

Sample Date/Time: 02/13/20 @ 1410

Signed Sampler:

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-54

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 02/13/20	Well Depth (ft): 25.2
Well Number: MW-54	DTW (ft): 9.80
Field Crew: MW, TH, CS	Water Column (ft): 15.40

Remarks: MW-54-021320

SAMPLING INFORMATION:

Depth sample was acquired: 20 PT

Sample Date/Time: 02/13/20 @ 1420

Signed Sampler:

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: KMLDOM20

WELL NUMBER: MW-56

SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	MW-56	Site:	LEWIS DRIVE
Field Crew:	MW, TH, CS	Date:	02/13/20
Well Depth (ft):	17.6	Purge	
DTW (ft):	3.61	Methodology: low flow	
Water Column (ft):	13.99		
Well Diameter (in):	2		
Gal. Per ft:	0.163		
Well volume (gal):	2.28		
Depth of Screen (ft):	4.3 - 13.3		
PID reading:	3.7 opening well	after venting, if initially high	middle of sampling 0.2 closing well 0.1

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 042925

Pump type (please circle): (Peristaltic) Bladder

Pump serial number: 010570

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1100	START	Pump								(a)
1105	3.58	200	0.25	5.00	14.3	0.588	299.8	6.05	21.32	CLEAR/NO ODOR
1110	3.65	200	0.50	4.97	14.4	0.591	331.4	5.56	11.56	CLEAR/NO ODOR
1115	3.70	200	0.75	4.97	14.5	0.590	348.9	5.42	2.52	CLEAR/NO ODOR
1120	3.74	200	1.00	4.97	14.7	0.624	356.2	5.58	6.24	CLEAR/NO ODOR
1125	3.78	200	1.25	4.97	14.8	~~8.604~~	368.8	5.50	5.50	CLEAR/NO ODOR
1130	3.79	200	1.50	4.96	14.9	0.677	381.3	5.66	4.79	CLEAR/NO ODOR
1135	3.81	200	1.75	4.95	14.9	0.679	386.9	5.80	5.54	CLEAR/NO ODOR
1140	3.82	200	2.00	4.94	15.0	0.686	393.1	5.96	6.65	CLEAR/NO ODOR
1145	3.82	200	2.25	4.94	15.0	0.686	397.3	6.11	8.08	CLEAR/NO ODOR
1150	3.83	200	2.50	4.94	15.1	0.686	399.3	6.19	9.18	CLEAR/NO ODOR
1155	MW-56-021320									

02/13/20

Remarks:

HYDROGEN PEROXIDE = 120 ppm
SODIUM PERSULFATE = 21 ppm
Fe^{2+} = 0.0 ppm

MW-56-021320

SAMPLING INFORMATION:

Depth to Water Before Sampling:	3.83	Depth sample was acquired:	10 ft
Sample Methodology:	LOW FLOW		
Sample Date/Time:	02/13/20 @ 1155		
Signed Sampler:			
Filtered Metals Collected:	Y (N)	Filter Size:	NA
Sample Observations:	CLEAR/NO ODOR		
Parameters (please circle):	(VOCs)	SVOCs	Dissolved Metals (Other: SULFATE)

Attachment D: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: 14MLDOM20

WELL NUMBER: MW-46

SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: MW-46
Field Crew: MW, TH, CS
Well Depth (ft): 17.65
DTW (ft): 4.00
Water Column (ft): 13.05
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 2.12
Depth of Screen (ft): 9 - 14
PID reading: 0.0 opening well; after venting, if initially high; middle of sampling 0.0; closing well 0.0

Purge
Methodology: low flow

Site: LEWIS DRIVE
Date: 02/13/20

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 0412925
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 010570

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0920	START PUMP									
0925	4.06	200	0.25	4.93	14.5	0.041	261.2	28.77	2.85	CLEAR/NO ODOR
0930	4.06	200	0.50	4.91	14.4	0.038	285.4	28.01	10.65	CLEAR/NO ODOR
0935	4.06	200	0.75	4.94	14.6	0.037	292.6	27.77	41.03	CLEAR/NO ODOR
0940	4.06	200	1.00	4.94	14.6	0.037	296.1	27.78	59.68	CLEAR/NO ODOR
0945	4.06	200	1.25	4.96	14.7	0.037	299.3	27.77	77.37	CLEAR/NO ODOR
0950	4.06	200	1.50	4.97	14.7	0.037	303.8	27.75	106.14	CLEAR/NO ODOR
0955	4.06	200	1.75	4.97	14.7	0.037	307.5	27.97	11.19	CLEAR/NO ODOR
1000	4.06	200	2.00	4.98	14.7	0.038	312.0	28.82	75.13	CLEAR/NO ODOR
1005	4.06	200	2.25	4.98	14.7	0.038	313.8	28.61	77.23	CLEAR/NO ODOR
1010	MW-46-021320									

02/13/20

Remarks:

MW-46-021320

Fe^{2+} = 0.0 mg/L
PERSULFATE = 0.0 PPM
H_2O_2 = 0.0 PPM

SAMPLING INFORMATION:

Depth to Water Before Sampling: 4.06
Depth sample was acquired: 12 FT
Sample Methodology: LOW FLOW
Sample Date/Time: 02/13/20 @ 1010
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: NA
Sample Observations: CLEAR/NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER KMLDOM20 | WELL NUMBER MW-36 | SHEET 1 OF 1

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-36
Field Crew: TM, CS
Well Depth (ft): 23.70
DTW (ft): ~~15.00~~ 14.81
Water Column (ft): ~~8.00~~ 8.89
Well Diameter (in): 2
Gal. Per ft: .163
Well volume (gal) 1.45 x 5 = 7.25
Depth of Screen (ft):

Site: LEWIS DRIVE
Date: 02-18-20
Purge Methodology: typhoon

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial # 046465
Pump type TRASH PUMP
Pump serial #: 39518

PID reading: opening well 1.2 after venting, if initially high: middle of sampling: closing well:

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond (mS/cm)	ORP (mV)	DO (Surface) (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc		NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0835	BEGIN		PURGE							
0840	20.45	1.5	4	5.24	17.9	.079	102.1	3.65	20.73	CLEAR/NO ODOR
0845	WELL	DRY								
	14	GALLONS		PURGED						

2-18-20

Remarks: PURGED USING 3/8" TUBING AND GM POWERED PUMP

SAMPLING INFORMATION:

Depth to Water Before Sampling: 14.84
Depth sample was acquired: 20.00
Sample Methodology: HS
Sample Date/Time: 2-18-20 / 1620
Signed Sampler:
Filtered Metals Collected: Y (N) Filter Size:
Sample Observations: CLEAR/NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Scanned with CamScanner

MW - 36 RECHARGE

0845	23.45
0846	~~[illegible]~~ 15.20
0847	16.35
0848	15.59
0849	15.42
0851	15.19
0853	15.09
0855	15.01
0857	14.98

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER 'KMLDOM20 | WELL NUMBER MW-13B | SHEET 1 OF 2

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-13B
Field Crew: TH, CS
Well Depth (ft): 58.5
DTW (ft): 20.03
Water Column (ft): 38.47
Well Diameter (in): 6
Gal. Per ft: 1.469 (10" BOREHOLE 4.08)
Well volume (gal): 81.932 (410 GALLON)
Depth of Screen (ft):
PID reading: opening well 1204 after venting, if initially high 588 middle of sampling 120.7 closing well

Site: LEWIS DRIVE
Date: 2-13-20

Purge Methodology: typhoon

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 046456
Pump type: Typhoon
Pump serial #: 031360
Control Box # 021467

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc		NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1420	19.90		BEGIN PURGE							
1425	29.25	2	10	8.32	17.9	0.392	-63.3	5.47	2.24	CLEAR/STRONG ODOR
1430	35.80 MOVED		PUMP DOWN TO 50'							"
1432	37.09									"
1435	38.62		WELL DRY		MOVED PUMP DOWN					"
1440	39.54	2	30	7.57	17.6	0.246	-124.6	4.22	11.96	"
1445	41.33	1	35	7.36	17.9	0.262	-111.8	4.13	0.63	"
1450	43.27	2	45	6.97	17.7	0.267	-73.5	4.72	4.40	"
1455	45.24	1	55	6.88	18.0	0.253	-94.2	3.70	0.0	"
1500	45.96	.5	58	6.68	18.5	0.224	-55.2	3.84	0.0	"
1505	45.57	.5	60	6.68	18.5	0.207	-46.7	4.41	0.0	"
1510	45.28	.5	65	6.53	18.5	0.198	-33.8	4.45	0.0	"
1515	45.02	.5	70	6.52	18.5	0.191	-29.5	3.75	0.0	"
1520	44.96	.5	75	6.35	18.4	0.189	-8.1	3.46	0.0	"
1525	43.41	.5	80	6.36	18.2	0.189	-40.5	3.61	0.0	"
1530	47.08	1	90	6.45	17.8	0.203	-39.6	4.19	0.0	"
1540	PUMP		STOPPED							

Remarks:
PUMP PLACE AT 40' BTOC
1430 MOVED PUMP TO 50' BTOC
1440 MOVED PUMP TO 57' BTOC
PUMP SCREEN CONTINUOUSLY GETTING CLOGGED UNABLE TO MAINTAIN MAXIMUM FLOW, PINE INDICATED TYPHOON NOT MEANT FOR TURBID WATER
PUMP REMOVED, SCREEN DIRTY

SAMPLING INFORMATION:

Depth to Water Before Sampling: 19.83
Depth sample was acquired: 50.0
Sample Methodology: LS
Sample Date/Time: 2-18-20 / 1735
Signed Sampler:
Filtered Metals Collected: Y (N)
Filter Size:
Sample Observations: SLIGHT TURBIDITY / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

MW-14B

1404	14.66 ft
1448	14.64 ft
1508	14.83 ft

MW-50B

1415	15.91 ft
1450	12.90 ft
1456	17.91
1534	17.91

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER KMLDOM.20 | WELL NUMBER MW-13B | SHEET 2 OF 2

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-13B
Field Crew: TH, CS
Well Depth (ft): 58.5
DTW (ft): 19.89
Water Column (ft): 38.61
Well Diameter (in): 6
Gal. Per ft: 1.469 FOR 28' 4.08 FOR 10'
Well volume (gal): 82.83 x 5 414.14
Depth of Screen (ft):

Site: LEWIS DRIVE
Date: 2-18-20

Purge Methodology: typhoon

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 046465
Pump type TRASH
Pump serial #: 39518
Control Box # ~~Typhoon~~ N/A

PID reading: opening well | after venting, if initially high | middle of sampling | closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc		NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
~~1115~~	19.83	BEGIN PURGE								
1325	BEGIN PURGE									
1330			20	6.94	12.4	1252	-123.6	2.90	15.15	
1335	WELL	SLOW	TO		RECHARGE		PUMP STOPPED			PUMPING
~~1335~~ 1345		SWITCHED	TO	3/8	" POLY					
1350	30.90									

Remarks: FIRST ATTEMPTED TO USE 1" TUBING, PUMPED 2 MIN THEN STOPPED. WELL WAS NOT DRY. SWITCHED TO 3/8" POLY, PUMPED BUT HAD A LOT OF AIR IN LINES.

SAMPLING INFORMATION:

Depth to Water Before Sampling: | Depth sample was acquired:
Sample Methodology:
Sample Date/Time: SEE PG 1
Signed Sampler:
Filtered Metals Collected: Y / N | Filter Size:
Sample Observations:
Parameters (please circle): VOCs | SVOCs | Dissolved Metals | Other:

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER KMLDOM20 | WELL NUMBER MW-50B | SHEET 2 OF 2

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-50B
Field Crew: TH, CS
Well Depth (ft): 107.40
DTW (ft): 18.45 ON 2/17
Water Column (ft): 88.95
Well Diameter (in): 4
Gal. Per ft: 0.1653
Well volume (gal): 200.9 x 5 = 1000.5
Depth of Screen (ft):

Site: LEWIS DRIVE
Date: 2/17/20

Purge Methodology: typhoon

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
(4")	0.653	8"	2.611

Water level indicator, serial #: 046456
Pump type: TRASH ~~Typhoon~~
Pump serial #: 39518 ~~Control Box #~~

PID reading: opening well 2.4 after venting, if initially high middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc		NA	(TH) ±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
~~1445~~	~~25.46~~	8	560	~~5.30~~	17.7	.062	182.8	7.08	4.96	CLEAR/NO ODER
1450	25.83	8	600	5.28	17.5	.061	192.3	6.87	0.0	"
1455	25.78	8	640	5.27	17.5	.061	201.4	6.72	0.0	"
1500	25.83	8	680	5.35	17.6	.061	182.5	6.90	0.0	"
1505	25.96	8	720	5.33	17.6	.061	190.9	7.02	0.0	"
1507	STOP PURGE TO TE FULL									
1540	BEGIN PURGE									
1542	23.92			(TH) 5.32						
1545	25.31	8	780	~~5.08~~	17.5	.061	170.3	7.06	4.62	CLEAR/NO ODOR
1550	25.68	8	820	5.33	17.4	.061	185.7	7.03	0.0	"
1555	25.82	8	860	5.32	17.3	.061	189.2	7.09	0.0	"
1600	25.91	8	900	5.26	17.4	.061	197.1	7.02	0.0	"
1605	26.00	8	940	5.24	17.3	.061	201.0	7.10	0.0	"
1610	26.08	8	980	5.29	17.3	.061	200.8	6.82	0.0	"
1613			1000	STOP PURGE						

2-18-20

Remarks:

SAMPLING INFORMATION:

Depth to Water Before Sampling: Depth sample was acquired: 100.00
Sample Methodology:
Sample Date/Time: SEE PG 1
Signed Sampler:
Filtered Metals Collected: Y / N Filter Size:
Sample Observations:
Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

50B Rechorse 2/13/20

SEWER FLOW RATE

1613	23.8 ft
1615	21.04
1617	20.34
1619	20.09
1621	19.87
1623	19.71
1625	19.57
1627	19.50
1629	19.44
1631	19.36
1633	19.31
1635	19.25
1740	18.71

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: KMLDOM20 | WELL NUMBER: MW-50B | SHEET 1 OF 2

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-50B
Field Crew: TH, CS
Well Depth (ft): 107.40
DTW (ft): 18.05 → 18.45
Water Column (ft): 89.35
Well Diameter (in): 4
Gal. Per ft: ~~0.653~~ 1.65 18.5 BOREHOLE ~~4.69~~ 7.74
Well volume (gal): 200.9
Depth of Screen (ft):
PID reading: opening well 2.4 after venting, if initially high middle of sampling closing well

Site: LEWIS DRIVE
Date: 2-13-20 CONT'D 2-17-20
Purge Methodology: typhoon

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
(4")	0.653	8"	2.611

Water level indicator, serial #: 046465
Pump type
Pump serial #: 031360
Typhoon Control Box # 021467

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc		NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
~~1000~~	18.02		BEGIN PURGE							
1015			PROBLEMS WITH PUMPS							
1100	18.00		BEGIN PURGE WITH ONE PUMP							
1105	18.60									
2/17 1105	18.41		BEGIN PURGE							
1110	24.85	8	40	7.46	17.3	0.068	137.4	7.70	88.29	LIGHT BROWN/NO ODOR
1115	25.46	8	80	5.70	17.4	0.065	156.4	6.70	13.69	CLEARING UP "
1120	25.72	8	120	5.64	17.4	0.063	154.5	7.02	5.35	CLEAR/NO ODOR
1125	25.82	8	160	5.54	17.4	0.062	165.2	6.98	.94	"
1130	25.92	8	200	5.46	17.4	0.062	165.9	6.66	2.54	"
1135	26.02	8	240	5.48	17.4	0.062	163.9	7.01	0.0	"
1137	STOP	PURGE	TO EMPTY	TOTE						
1215	BEGIN	PURGE	20	MIN	TO	EMPTY	TOTE			
1220	24.92	8	280	5.57	17.5	.064	160.6	7.19	11.5	"
1225	25.41	8	320	5.42	17.4	.062	169.5	6.71	4.19	CLEAR/NO ODOR
1230	25.66	8	360	5.47	17.5	.062	175.8	6.95	0.0	"
1235	25.75	8	400	5.50	17.5	.062	181.2	7.18	0.0	"
1240	25.79	8	440	5.42	17.5	.061	179.2	6.88	0.0	"
1245	25.92	8	480	5.32	17.4	.061	190.0	6.60	0.0	"
1250	STOP	PURGE	520	TOTE	FULL					
1435	24.85	BEGIN	PURGE							

Remarks:
5 WELL VOLUMES = 1,000.45 GALLONS
PUMPS INITIALLY LOWERED TOO LOW AND WOULD NOT PUMP BECAUSE OF SEDIMENT

SAMPLING INFORMATION:

Depth to Water Before Sampling: 18.47
Depth sample was acquired: 100.00
Sample Methodology: HS
Sample Date/Time: 2-18-20 / 1650
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size:
Sample Observations: TURBID / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

~~5~~ 7.74 20' 45.29

WELL ID	TIME	DTW @ START 19.90
MW-13D	1120	19.93
13B	1135	19.92
13B	1236	19.95
13B	1457	19.95
13B	1607	20.00

DRAWDOWN WHILE PUMPING AT MW-50B

2/17/20 @ 8 GPM

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER KMLDOM.20 | WELL NUMBER MW-11 | SHEET 1 OF 1

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-11
Field Crew: TH, CS
Well Depth (ft): 32.25
DTW (ft): 26.50
Water Column (ft): 5.75
Well Diameter (in): 2
Gal. Per ft: .163
Well volume (gal): .94 x5 4.69
Depth of Screen (ft):

Site: LEWIS DRIVE
Date: 2-18-20

Purge
Methodology: typhoon

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
(2")	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 046965
Pump type TRASH ~~Typhoon~~
Pump serial #: 39518 ~~Control Box #~~

PID reading: opening well 915.2 after venting, if initially high 914.3 middle of sampling 910.2 closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc		NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0935	26.49	BEGIN PURGE								
0940	28.40	.5	2.5	5.47	19.6	.104	120.0	3.99	480	TURBID/STRONG ODOR
0945	28.58	.5	5	5.56	21.2	.103	109.2	3.13	279	
0947	STOPPED PURGE. WELL VOLUME REACHED									

Remarks: WELL LID BLOWN OFF UPON OPENING. NO DAYLIGHTING
A LOT OF BUBBLES IN PURGE WATER. UNABLE TO PUMP FAST SINCE PUMP IS DRAWING IN BUBBLES/AIR. SHEEN IN BUCKET WHILE PURGING

SAMPLING INFORMATION:

Depth to Water Before Sampling: 25.42
Depth sample was acquired: 29.00
Sample Methodology: HS
Sample Date/Time: 2-18-20 / 1705
Signed Sampler:
Filtered Metals Collected: Y (N) Filter Size:
Sample Observations: TURBID. SHEEN ON SAMPLES. SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

MW-11

TIME	RECHARGE DTW
0946	28.55
0951	26.94
0953	26.75
0955	26.66
0957	26.61
0959	25.58

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: KMLO 0M20

WELL NUMBER: MW-123

SHEET 2 OF 2

TYPHOON AND BAILER SAMPLING LOG

Well Number:		Site: LEWIS DRIVE	
Field Crew:		Date: 2-11-20	
Well Depth (ft):	Purge	Diameter / Gal. Per Foot	Diameter / Gal. Per Foot
DTW (ft):	Methodology: typhoon	2" 0.163	5" 1.02
Water Column (ft): SEE PG 1		3" 0.367	6" 1.469
Well Diameter (in):		4" 0.653	8" 2.611
Gal. Per ft:		Water level indicator, serial #:	
Well volume (gal):		Pump type SEE PG 1	Typhoon
Depth of Screen (ft):		Pump serial #r:	Control Box #

PID reading: opening well | after venting, if initially high | middle of sampling | closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc		NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1618	12.16	6	250	5.91	16.9	0.093	36.5	3.97	0	clear/no odor
1624	11.90	6	280	5.64	16.8	0.089	59.8	3.15	0	CLEAR/NO ODOR
1630	11.81	6	310	5.72	16.8	0.087	58.3	3.84	0	clear/no odor
1635	11.69	6	340	5.59	16.8	0.086	76.8	3.72	0	clear/no odor
1640	11.61	6.5	375	5.6	16.8	0.084	85.0	3.60	0	clear/no odor
1645	11.52	6.5	410	5.51	16.7	0.082	90.3	3.90	0	clear/no odor
1650	11.50	6.5	445	5.62	16.7	0.083	88.8	3.75	0	"

02-11-20

Remarks:

SAMPLING INFORMATION:

Depth to Water Before Sampling:	Depth sample was acquired:
Sample Methodology: SEE PG 1	
Sample Date/Time:	
Signed Sampler:	
Filtered Metals Collected: Y / N	Filter Size:
Sample Observations:	
Parameters (please circle): VOCs SVOCs Dissolved Metals Other:	

MW-12B

Recharge

1650 - 11.56
1652 - 10.82
1654 - 10.75
1656 - 10.70
1658 - 10.66
1700 - 10.63
1702 - 10.61
1704 - 10.59
1706 - 10.55
1708 - 10.58
1710 - 10.58

Attachment D2: Low Flow Sampling Log

JACOBS

PROJECT NUMBER KMLDOM20	WELL NUMBER MW-12B SHEET 1 OF 2

TYPHOON AND BAILER SAMPLING LOG

Well Number: MW-12B		Site: LEWIS DRIVE	
Field Crew: TH, CS		Date: 2-11-20	
Well Depth (ft): 43'	Purge		
DTW (ft): 10.93	Methodology: typhoon		
Water Column (ft): 32.07			
Well Diameter (in): 6"			
Gal. Per ft: 1.469		Water level indicator, serial #: 046465	
Well volume (gal): 47.11		Pump type	Typhoon
Depth of Screen (ft):		Pump serial #: 029227/031360	Control Box # 033473/021467
PID reading:	opening well 5.0	after venting, if initially high / middle of sampling	closing well

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc		NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1250	11.16	5.5	20	7.04	17.0	.119	41.1	3.57	35.41	LIGHT BROWN/NO ODOR
1252	11.16									
1256	11.13	5.5	55	~~6.44~~ 6.45	~~18.8~~ 16.9	~~0.001~~ 0.101	~~56.4~~ 56.4	~~9.38~~ 3.96	~~43.75~~ 7.85	clear/no odor
1258	11.11									
1300	11.09									
1302	11.08	5.5	75	5.77	16.9	0.092	~~5.27~~ 62.7	3.70	4.83	clear/no odor
1304	11.07									
1306	11.06									
~~1307~~	Inverter overheated - temp. paused									
1311	11.00	5.5	110	5.81	16.9	0.095	59.8	3.65	6.01	clear/strong odor
1313	10.99									
1315	10.00									
1316	9.79	5.5	140	5.67	16.8	0.091	73.8	3.36	0.32	Clear/slight odor
1318	9.51									
1320	9.37									
1322	9.17	5.5	160	5.71	16.9	0.093	66.5	4.39	1.65	Clear/slight odor
1324	9.15									
1326	9.19									
1328	9.24	5.5	190	5.69	16.8	0.091	76.5	3.72	0.58	Clear/no odor
1600	11.47	PUMP TO BE RESTARTED								
1613	12.13	6	220	6.63	17.0	0.097	49.2	3.54	3.87	Clear/no odor

Remarks: WTL FLUXUATING BETWEEN 11.00' + 9.00'
1330 PUMPING PAUSED TO EMPTY TANK

SAMPLING INFORMATION:

Depth to Water Before Sampling: 10.58   Depth sample was acquired: 40
Sample Methodology: HYDRASLEEVE
Sample Date/Time: 02-11-20 /
Signed Sampler: [signature]
Filtered Metals Collected: Y / (N)   Filter Size: N/A
Sample Observations: CLEAR/NO ODOR
Parameters (please circle): (VOCs)   SVOCs   Dissolved Metals   Other:

Attachment B

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-36

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 2-18-20	Well Depth (ft): 23.70
Well Number: MW-36	DTW (ft): 14.81
Field Crew: TH, CS	Water Column (ft): 8.89
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired:	20
Sample Date/Time:	2-18-20 / 1620
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-55

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 2-18-20	Well Depth (ft): 25.50
Well Number: MW-55	DTW (ft): 16.35
Field Crew: TH, CS	Water Column (ft): 9.15
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired:	21
Sample Date/Time:	02-18-20 / 1635
Signed Sampler:	
Sample Observations:	SAMPLE CLEAR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-50B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 2-18-20	Well Depth (ft): 107.40
Well Number: MW-50B	DTW (ft): 18.43
Field Crew: TH, CS	Water Column (ft): 88.97
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired:	100.0
Sample Date/Time:	2-18-20 / 1650
Signed Sampler:	
Sample Observations:	SLIGHT TURBIDITY / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

Attachment B

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-11

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 2-18-20	Well Depth (ft): 32.25
Well Number: MW-11	DTW (ft): 26.50
Field Crew: TH, CS	Water Column (ft): 5.75
Remarks: VOTS HAD SHEEN. WILL NEED TO BE DILUTED	

SAMPLING INFORMATION:

Depth sample was acquired:	29.0
Sample Date/Time:	2-18-20/1705
Signed Sampler:	
Sample Observations:	SLIGHT TURBIDITY/STRONG ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-13B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date: 2-18-20	Well Depth (ft): 58.50
Well Number: MW-13B	DTW (ft): 20.03
Field Crew: TH, CS	Water Column (ft): 38.47
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired:	50.0
Sample Date/Time:	2-18-20/1735
Signed Sampler:	
Sample Observations:	SLIGHT TURBIDITY / SLIGHT ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC	
Date:	Well Depth (ft):
Well Number:	DTW (ft):
Field Crew:	Water Column (ft):
Remarks:	

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

Attachment B

(1)

JACOBS

PROJECT NUMBER: KMLDOM20 D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-12

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	03/10/20	Well Depth (ft):	21.25
Well Number:	MW-12	DTW (ft):	9.22
Field Crew:	MW, AF	Water Column (ft):	12.03

Remarks:

MW-12-031020

Fe^{2+} = 0.0 MG/L

SCREEN 4.3 - 19.3 bgs

SAMPLING INFORMATION:

Depth sample was acquired: 17 Ft bgs

Sample Date/Time: 03/10/20 @ 0935

Signed Sampler:

Sample Observations: DARK FLOC / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other:) NITRATE, SULFATE CO_2, CH_4, ALKALINITY

JACOBS

PROJECT NUMBER: KMLDOM20 D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-15

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	03/10/20	Well Depth (ft):	13.75
Well Number:	MW-15	DTW (ft):	7.96
Field Crew:	MW, AF	Water Column (ft):	5.79

Remarks:

MW-15-031020

Fe^{2+} = 0.0 MG/L

SCREEN 4 - 19 Ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 10 ft

Sample Date/Time: 03/10/20 @ 1335

Signed Sampler:

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other:) NITRATE, SULFATE, CO_2, CH_4, ALKALINITY

JACOBS

PROJECT NUMBER: KMLDOM20 D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-24

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	03/10/20	Well Depth (ft):	15.33
Well Number:	MW-24	DTW (ft):	4.70
Field Crew:	MW, AF	Water Column (ft):	10.63

Remarks:

MW-24-031020

SCREEN: 8-13Ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 10 ft

Sample Date/Time: 03/10/20 @ 1400

Signed Sampler:

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
KMLDOM20 ~~D3161400~~.A.PN.EV.LDOMR.GW	MW-24B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC			
Date:	03/10/20	Well Depth (ft):	44.28
Well Number:	MW-24B	DTW (ft):	5.34
Field Crew:	MW, AF	Water Column (ft):	38.92

Remarks:

[MW-24B-031020]

SCREEN: 19.5-39.5 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired:	30 ft bgs
Sample Date/Time:	03/10/20 @ 1355
Signed Sampler:	[signature]
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	VOCs (circled) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
KMLDOM20 ~~D3161400~~.A.PN.EV.LDOMR.GW	MW-25

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC			
Date:	03/10/20	Well Depth (ft):	17.95
Well Number:	MW-25	DTW (ft):	6.00
Field Crew:	MW, AF	Water Column (ft):	11.95

Remarks:

[MW-25-031020] $Fe^{2+} = 0.0 \frac{mg}{L}$

SCREEN: 5-15 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired:	12 ft bgs
Sample Date/Time:	03/10/20 @ 1050
Signed Sampler:	[signature]
Sample Observations:	CLEAR/NO ODOR
Parameters (please circle):	VOCs (circled) SVOCs Dissolved Metals Other: NITRATE, SULFATE, CO_2, CH_4, ALKALINITY

JACOBS

PROJECT NUMBER	WELL NUMBER
KMLDOM20 ~~D3161400~~.A.PN.EV.LDOMR.GW	MW-25B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC			
Date:	03/10/20	Well Depth (ft):	63.10
Well Number:	MW-25B	DTW (ft):	2.45
Field Crew:	MW, AF	Water Column (ft):	60.6

Remarks:

[MW-25B-031020]

SCREEN: 48-58 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired:	50 ft bgs
Sample Date/Time:	03/10/20 @ 1100
Signed Sampler:	[signature]
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	VOCs (circled) SVOCs Dissolved Metals Other:

(3)

JACOBS

PROJECT NUMBER KMLDOMZO D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER MW-28

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 03/10/20
Well Number: MW-28
Field Crew: MW, AF
Remarks:

Well Depth (ft): 28.10
DTW (ft): 17.70
Water Column (ft): 10.3

MW-28-031020

Fe^{2+} = 0.75 mg/L

SCREEN: 10-25 Ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: ~~20~~ 22 Ft bgs
Sample Date/Time: 03/10/20 @ 1000
Signed Sampler:
Sample Observations: SLIGHT TURBIDITY / DARK FLOC / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other: NITRATE, SULFATE, CO_2, CH_4, ALKALINITY)

JACOBS

PROJECT NUMBER KMLDOMZO D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER MW-34

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 03/10/20
Well Number: MW-34
Field Crew: MW, AF
Remarks:

Well Depth (ft): 7.82
DTW (ft): 2.55
Water Column (ft): 5.27

MW-34-03/10/20 → MW-34-031020

SCREEN 2.5-5.0 Ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 5 Ft bgs
Sample Date/Time: 03/10/20 @ 1325
Signed Sampler:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER KMLDOMZO D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER MW-35

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 03/10/20
Well Number: MW-35
Field Crew: MW, AF
Remarks:

Well Depth (ft): 28.15
DTW (ft): 7.16
Water Column (ft): 20.99

MW-35-031020

Fe^{2+} = 0.0 mg/L

SCREEN: 10-25 Ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 20 Ft bgs
Sample Date/Time: 03/10/20 @ 1035
Signed Sampler:
Sample Observations: NO ODOR / CLEAR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other: NITRATE, SULFATE, CO_2, CH_4, ALKALINITY)

(4)

JACOBS

PROJECT NUMBER: KMLDOM20 ~~D3161400~~.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-39-0310-20

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 03/10/20
Well Number: MW-39
Field Crew: MW, AF

Well Depth (ft): 13.07
DTW (ft): 4.40
Water Column (ft): 8.67

Remarks:

MW-39-031020

SCREEN: 5-10 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 8 Ft bgs
Sample Date/Time: 03/10/20 @ 1315
Signed Sampler:
Sample Observations: ORANGE FLOC / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: KMLDOM20 ~~D3161400~~.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-40

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 03/10/20
Well Number: MW-40
Field Crew: MW, AF

Well Depth (ft): 13.21
DTW (ft): 2.31
Water Column (ft): 10.90

Remarks:

MW-40-031020

Fe^{2+} = 2.0 mg/L

SCREEN: 5-10 Ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 10 Ft bgs
Sample Date/Time: 03/10/20 @ 1300
Signed Sampler:
Sample Observations: CLEAR / SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other: NITRATE, SULFATE, CO_2, CH_4, ALKALINITY)

JACOBS

PROJECT NUMBER: KMLDOM20 ~~D3161400~~.A.PN.EV.LDOMR.GW

WELL NUMBER: ~~MW-40~~ MW-41

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 03/10/20
Well Number: MW-41
Field Crew: MW, AF

Well Depth (ft): 13.50
DTW (ft): 3.51
Water Column (ft): 9.99

Remarks:

MW-41-031020 AND MW-41-D-031020

SCREEN: 5-10Ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 10 ft bgs
Sample Date/Time: 03/10/20 @ 1245 DUP AT 1250
Signed Sampler:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(5)

JACOBS

PROJECT NUMBER
KMLDOMZO
D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER
MW-42

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 03/10/20
Well Number: ~~03~~ MW-42
Field Crew: MW, AF
Remarks:

Well Depth (ft): 15.40
DTW (ft): 4.13
Water Column (ft): 9.27

MW-42-031020

$Fe^{2+} = 0.0 \frac{mg}{L}$

SCREEN: 5-10 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 10 ft bgs
Sample Date/Time: 03/10/20 @ 1230
Signed Sampler:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other) NITRATE, SULFATE, CO_2, CH_4, ALKALINITY

JACOBS

PROJECT NUMBER
KMLDOMZO
D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER
MW-43

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 03/10/20
Well Number: MW-43
Field Crew: MW, AF
Remarks:

Well Depth (ft): 10.35
DTW (ft): 4.22
Water Column (ft): 6.13

MW-43-031020

SCREEN: 2.5 - 7.5 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 7 ft bgs
Sample Date/Time: 03/10/20 @ 1420
Signed Sampler:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER
KMLDOMZO
D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER
MW-43B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 03/10/20
Well Number: MW-43B
Field Crew: MW, AF
Remarks:

Well Depth (ft): 56.40
DTW (ft): 2.66
Water Column (ft): 53.74

MW-43B-031020

SCREEN: 31-51 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 45 ft bgs
Sample Date/Time: 03/10/20 @ 1425
Signed Sampler:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

(6)

JACOBS

PROJECT NUMBER	WELL NUMBER
KMLDOM20 D3161400.A.PN.EV.LDOMR.GW	MW-49

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/10/20	Well Depth (ft): 23.35
Well Number: MW-49	DTW (ft): 12.05
Field Crew: MW, AF	Water Column (ft): 11.30

Remarks:

MW-49-031020

SCREEN: 6-21 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired:	20 ft bgs
Sample Date/Time:	03/10/20 @ 1020
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	Well Depth (ft):
Well Number:	DTW (ft):
Field Crew:	Water Column (ft):

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	

Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	Well Depth (ft):
Well Number:	DTW (ft):
Field Crew:	Water Column (ft):

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	

Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

Attachment D1: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: KMLDOM20

WELL NUMBER: MW-37

SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	MW-37	Site:	LEWIS DRIVE
Field Crew:	MW, AF	Date:	03/10/20
Well Depth (ft):	18.15	Purge	
DTW (ft):	3.18	Methodology: low flow	
Water Column (ft):	14.97		
Well Diameter (in):	2		
Gal. Per ft:	0.163		
Well volume (gal):	2.44		
Depth of Screen (ft):	5 - 15 ft bgs		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 046465

Pump type (please circle): (Peristaltic) Bladder

Pump serial number: 15906

PID reading: 0.0 opening well | after venting, if initially high | middle of sampling 0.0 | closing well 0.0

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1540	3.32	200	0.26	4.98	14.1	0.210	318.5	6.10	0.0	CLEAR/NO ODOR
1545	3.26	200	0.50	4.96	14.7	0.209	359.7	6.04	0.85	CLEAR/NO ODOR
1550	3.26	200	0.75	4.96	14.7	0.206	379.5	5.97	0.0	CLEAR/NO ODOR
1555	3.26	200	1.00	4.96	14.7	0.202	390.8	5.89	0.0	CLEAR/NO ODOR
1600	3.26	200	1.25	4.96	14.8	0.199	397.5	~~4.96~~ 5.82	0.0	DO = 5.82 " "
1605	3.26	200	1.50	4.96	14.9	0.196	403.2	5.74	0.0	CLEAR/NO ODOR
1610	3.26	200	1.75	4.96	14.9	0.194	408.5	5.68	0.0	CLEAR/NO ODOR
1615	COLLECT SAMPLE= MW-37-031020									

03/10/20

Remarks: START PUMP AT 1535

TOTAL VOLUME PURGED = 2.0 GAL

MW-37-031020

Fe^{2+} = 0.0 mg/L

HYDROGEN PEROXIDE = <30ppm

PERSULFATE = 14ppm AT 1:5 DILUTION = 70ppm

SAMPLING INFORMATION:

Depth to Water Before Sampling:	3.26
Depth sample was acquired:	12 ft bgs
Sample Methodology:	LOW FLOW / STRAW
Sample Date/Time:	03/10/20 @ 1615
Signed Sampler:	
Filtered Metals Collected:	Y / (N)
Filter Size:	N/A
Sample Observations:	CLEAR/NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals (Other) SULFATE

Attachment D1: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: HMLDOM20

WELL NUMBER: MW-38

SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	MW-38	Site:	LEWIS DRIVE
Field Crew:	MW, AF	Date:	03/10/20
Well Depth (ft):	7.82	Purge	
DTW (ft):	1.65	Methodology: low flow	
Water Column (ft):	6.17		
Well Diameter (in):	2"		
Gal. Per ft:	0.163		
Well volume (gal):	1.01		
Depth of Screen (ft):	4-9 ft bgs		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 045647

Pump type (please circle): (Peristaltic) Bladder

Pump serial number: 012045

PID reading: 0.0 opening well | after venting, if initially high | middle of sampling 0.0 | closing well 0.0

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1540	1.40	300	0.0	5.10	17.2	0.278	258.9	3.03	4.5	CLEAR/NO ODOR
1545	1.60	300	0.4	5.05	15.3	0.275	284.3	1.24	2.6	
1550	1.55	300	0.8	5.05	15.2	0.274	288.3	1.20	2.5	
1555	1.52	300	1.2	5.04	15.3	0.301	301.9	1.09	2.3	
1600	1.52	300	1.6	5.05	15.3	0.314	315.4	0.97	2.1	
1605	1.52	300	2.0	5.05	15.4	0.274	352.3	1.92	6.8	
1610	1.52	300	2.4	5.04	15.4	0.274	350.1	0.47	0.7	
1615	1.52	300	2.8	5.04	15.4	0.274	353.5	0.41	2.1	
1620	1.52	300	3.2	5.04	15.4	0.274	359.4	0.24	6.3	
1625	1.52	300	3.6	5.04	15.5	0.274	362.1	0.18	9.8	
1630	1.52	300	4.0	5.04	15.5	0.274	365.1	0.17	0.9	
1635	1.52	300	4.4	5.04	15.5	0.274	369.4	0.17	1.9	
1640	1.52	300	4.8	MW-38-031020						

03/10/20

Remarks:

TOTAL VOLUME PURGED = 5.0 GAL

MW-38-031020

Fe^{2+} = 0.0 mg/L

PERSULFATE = 56 ppm

H_2O_2 = 0.0 ppm

SAMPLING INFORMATION:

Depth to Water Before Sampling: 1.52 Depth sample was acquired: 6 ft bgs

Sample Methodology: LOW FLOW / STRAW

Sample Date/Time: 03/10/20 @ 1640

Signed Sampler:

Filtered Metals Collected: Y (N) Filter Size: N/A

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other) SULFATE

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-48B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/11/20	Well Depth (ft): 98.28
Well Number: MW-48B	DTW (ft): 14.84
Field Crew: MW, AF	Water Column (ft): 83.44

Remarks:

MW-48B-031120

SCREEN 71.0 – 91.0 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired:	80 ft bgs
Sample Date/Time:	03/11/20 @ 1115
Signed Sampler:	
Sample Observations:	CLEAR / SLIGHT ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-33T

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/11/20	Well Depth (ft): 100.00
Well Number: MW-33T	DTW (ft): 23.73
Field Crew: MW, AF	Water Column (ft): 96.27

Remarks:

MW-33T-031120

SCREEN: 84-94 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired:	90 ft bgs
Sample Date/Time:	03/11/20 @ 1350
Signed Sampler:	
Sample Observations:	CLEAR/NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-31

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/11/20	Well Depth (ft): 28.38
Well Number: MW-31	DTW (ft): 16.32
Field Crew: MW, AF	Water Column (ft): 12.06

Remarks:

MW-31-031120

SCREEN: 10-25 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired:	20 ft bgs
Sample Date/Time:	03/11/20 @ 1400
Signed Sampler:	
Sample Observations:	CLEAR/NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-13

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/11/20	Well Depth (ft): 22.20
Well Number: MW-13	DTW (ft): 17.63
Field Crew: MW, AF	Water Column (ft):

Remarks:

MW-13-031120

SCREEN: 4-19 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired:	19 ft bgs
Sample Date/Time:	03/11/20 @ 1055
Signed Sampler:	
Sample Observations:	STRAW COLOR / STRONG ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-14

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/11/20	Well Depth (ft): 22.54
Well Number: MW-14	DTW (ft): 11.16
Field Crew: MW, AF	Water Column (ft): 11.38

Remarks:

MW-14-031120

SCREEN 4.3 - 19.3 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired:	18 ft bgs
Sample Date/Time:	03/11/20 @ 1030
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-14B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/11/20	Well Depth (ft): 74.55
Well Number: MW-1413	DTW (ft): 12.84
Field Crew: MW, AF	Water Column (ft): 61.71

Remarks:

MW-14B-031120

SCREEN: 66 - 76 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired:	70 ft bgs
Sample Date/Time:	03/11/20 @ 1035
Signed Sampler:	
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

Attachment B

(3)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-47

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC		
Date: 3/11/20	Well Depth (ft):	22.85
Well Number: MW-47	DTW (ft):	12.55
Field Crew: MW, AF	Water Column (ft):	10.30
Remarks: MW-47-031120		
SCREEN 10-20 ftbgs		

SAMPLING INFORMATION:

Depth sample was acquired:	18 Ft bgs
Sample Date/Time:	03/11/20 @ 1410
Signed Sampler:	Melissa Allen
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC		
Date:	Well Depth (ft):	
Well Number:	DTW (ft):	
Field Crew:	Water Column (ft):	
Remarks:		

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC		
Date:	Well Depth (ft):	
Well Number:	DTW (ft):	
Field Crew:	Water Column (ft):	
Remarks:		

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

Attachment D1: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: KMLDOM20 | WELL NUMBER | SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	MW-56	Site:	LEWIS DRIVE
Field Crew:	MW, CS	Date:	03/11/20
Well Depth (ft):	17.43	Purge	
DTW (ft):	3.16	Methodology: low flow	
Water Column (ft):	14.27		
Well Diameter (in):	2"		
Gal. Per ft:	0.163		
Well volume (gal):	2.32		
Depth of Screen (ft):	4.3 - 14.3		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 046465
Pump type (please circle): (Peristaltic) Bladder
Pump serial number: 159016

PID reading: opening well 3.0 after venting, if initially high middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1522	START	PUMP								
1525	3.58	250	Ø	4.95	16.7	0.790	343.6	9.63	28.62	NO ODOR/ LIGHT TURBID
1530	3.66	250	0.4	4.97	16.4	0.665	362.7	8.79	10.21	CLEAR/NO ODOR
1535	3.62	200	0.7	4.97	16.4	0.662	370.0	8.64	10.02	CLEAR/NO ODOR
1540	3.57	200	1.0	4.98	16.4	0.670	377.6	8.64	8.35	CLEAR/NO ODOR
1545	3.58	200	1.25	4.99	16.3	0.660	381.9	8.60	10.41	CLEAR/NO ODOR
1550	3.60	200	1.50	4.99	16.2	0.647	384.9	8.46	15.00	CLEAR/NO ODOR
1555	3.61	200	1.75	4.99	16.2	0.652	388.1	8.45	7.30	CLEAR/NO ODOR
1600	3.63	200	2.00	4.99	16.3	0.645	387.8	8.63	4.34	Clear/no odor
1605	3.62	200	2.25	4.94	16.4	0.646	387.4	8.57	8.24	CLEAR/NO ODOR
1610	COLLECT	MW-56-03	1120							

03/11/20

Remarks:

TOTAL VOLUME PURGED = 2.3 GALLONS

MW-56-031120

Fe^{2+} = 0.0 MG/L
PERSULFATE = > 350 ppm
H_2O_2 ≈ 30 ppm

SAMPLING INFORMATION:

Depth to Water Before Sampling: 3.62 ft BTOC
Depth sample was acquired: 10 ft bgs
Sample Methodology: LOW FLOW / STRAW
Sample Date/Time: 03/11/20 @ 1610
Signed Sampler: Melissa Mun
Filtered Metals Collected: Y / (N) Filter Size: N/A
Sample Observations: CLEAR/NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other:) SULFATE

Attachment D1: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: KMLDOM20

WELL NUMBER: SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	MW-57	Site:	Lewis Drive
Field Crew:	CS	Date:	3/11/20
Well Depth (ft):	17.35	Purge Methodology:	low flow
DTW (ft):	4.62		
Water Column (ft):	12.73		
Well Diameter (in):	2		
Gal. Per ft:	0.163		
Well volume (gal):	2.08		
Depth of Screen (ft):	3.9 - 13.9 ft		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
(2")	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 046465

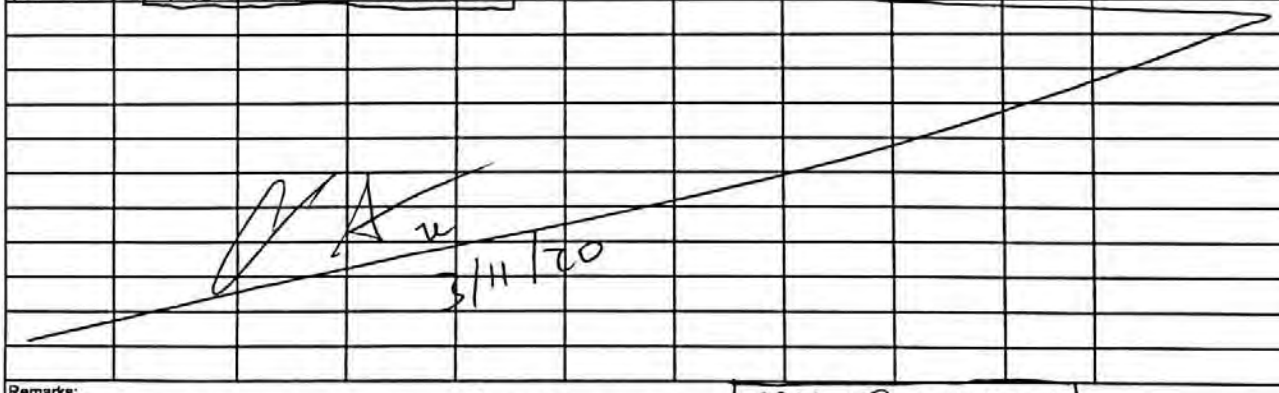
Pump type (please circle): (Peristaltic) Bladder

Pump serial number: 12045

PID reading: 3.0 opening well; after venting, if initially high; middle of sampling; closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1510	~~4.73~~	~~260~~	Resin Purge							
1520	4.71	260	1.2	4.61	17.6	1083	477.0	5.90	18.51	clear / no odor
1525	4.70	260	1.5	4.61	17.4	1086	509.0	5.96	27.16	1
1530	4.71	260	1.8	4.60	17.6	1.099	526.8	6.10	31.50	1
1535	4.73	260	2.1	4.61	17.5	1.086	533.7	6.10	36.90	1
1540	4.74	260	2.4	4.61	17.4	1.085	540.3	6.01	40.90	1
1545	4.73	260	2.7	4.59	17.3	1.096	546.2	6.30	5.80	1
1550	4.73	260	3.0	4.59	17.3	1.086	548.7	6.05	8.20	1
1555	4.73	260	3.3	4.60	17.4	1.086	551.6	6.03	9.57	1
1605	MW-57-031120									



Remarks:

three well volumes = 6.24 gal

MW-57-031120

Fe^{2+} = 0.0 mg/L

H_2O_2 = 60 ppm (mg/L)

Sodium persulfate = >350 ppm (mg/L)

SAMPLING INFORMATION:

Depth to Water Before Sampling: 4.73 btc

Depth sample was acquired: 13.00 ft bgs ~~14.00 ft bgs~~

Sample Methodology: low flow / straw

Sample Date/Time: 3/11/20 1605

Signed Sampler:

Filtered Metals Collected: Y / (N) Filter Size: N/A

Sample Observations: clear / no odor

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: SULFATE

Purged ~ 5.0 gallons

KMLDOM20

SHALLOW BEDROCK

(1)

JACOBS

PROJECT NUMBER (KMLDOM20) ~~D3161400~~.A.PN.EV.LDOMR.GW

WELL NUMBER MW-01

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 03/12/20
Well Number: MW-01
Field Crew: MW, TH, CS, AF
Well Depth (ft): 15.65
DTW (ft): 3.25
Water Column (ft): 12.40
Remarks:

MW-01-031220

$Fe^{2+} = 2.5 \frac{mg}{L}$

SCREEN 3.0-13.0 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 12 ft bgs
Sample Date/Time: 03/12/20 @
Signed Sampler:
Sample Observations: ORANGE FLOC/ SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other) NITRATE, SULFATE CO_2, CH_4, ALKALINITY

JACOBS

PROJECT NUMBER ~~D3161400~~.A.PN.EV.LDOMR.GW

WELL NUMBER MW-01B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 03/12/20
Well Number: MW-01B
Field Crew: MW, AF, CS, TH
Well Depth (ft): 44.00
DTW (ft): 4.66
Water Column (ft): 39.34
Remarks:

MW-01B-031220

SCREEN: 18.5-38.5 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 30 ft bgs
Sample Date/Time: 03/12/20 @ 1410
Signed Sampler:
Sample Observations: SLIGHT ODOR / CLEAR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER ~~D3161400~~.A.PN.EV.LDOMR.GW

WELL NUMBER MW-11

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 03/12/20
Well Number: MW-11
Field Crew: MW, TH, CS, AF
Well Depth (ft): 32.03
DTW (ft): 26.62
Water Column (ft): 5.41
Remarks:

MW-11-031220

$Fe^{2+} = 5.0 \frac{mg}{L}$

14.2-25 @
SCREEN: ~~6~~-11 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 25 ft bgs
Sample Date/Time: 03/12/20 @ 1515
Signed Sampler:
Sample Observations: STRAW COLOR / STRONG ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other:) NITRATE, SULFATE CO_2, CH_4, ALKALINITY

KMLDOM20

SHALLOW BEDROCK

(2)

JACOBS

PROJECT NUMBER	WELL NUMBER
~~D3161400~~.A.PN.EV.LDOMR.GW	MW-22

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	03/12/20	Well Depth (ft):	10.30
Well Number:	MW-22	DTW (ft):	4.95
Field Crew:	MW, AF	Water Column (ft):	5.35

Remarks:

MW-22-031220

$Fe^{2+} = 0.0 \frac{mg}{L}$

SCREEN: 6-11 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 10 ft bgs

Sample Date/Time: 03/12/20 @ 1540

Signed Sampler: [signature]

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other:) NITRATE, SULFATE CO_2, CH_4, ALKALINITY

JACOBS

PROJECT NUMBER	WELL NUMBER
~~D3161400~~.A.PN.EV.LDOMR.GW	MW-27

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	03/12/20	Well Depth (ft):	30.10
Well Number:	MW-27	DTW (ft):	19.90
Field Crew:	MW, AF	Water Column (ft):	20.20

Remarks:

MW-27-031220

SCREEN: 15-30 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 27 ft bgs

Sample Date/Time: 03/12/20 @ 1450

Signed Sampler: [signature]

Sample Observations: SLIGHT ODOR / SLIGHT TURBID

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
~~D3161400~~.A.PN.EV.LDOMR.GW	MW-27B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	03/12/20	Well Depth (ft):	42.60
Well Number:	MW-27B	DTW (ft):	27.80
Field Crew:	MW, AF	Water Column (ft):	14.8

Remarks:

MW-27B-031220

SCREEN: 36-46 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 35 ft BGS

Sample Date/Time: 03/12/20 @ 1440

Signed Sampler: [signature]

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

KMLDOM2D

SHALLOW BEDROCK (3)

JACOBS

PROJECT NUMBER	WELL NUMBER
~~D3161400~~.A.PN.EV.LDOMR.GW	MW-44-031220

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/12/20	Well Depth (ft): 9.80
Well Number: MW-44	DTW (ft): 2.20
Field Crew: MW, AF, CS, TH	Water Column (ft): 7.60

Remarks:

MW-44-031220

SCREEN: 5-10 Ft bgs

SAMPLING INFORMATION:

Depth sample was acquired:	7 Ft bgs
Sample Date/Time:	03/12/20 @ 1350
Signed Sampler:	Melissa Allen
Sample Observations:	CLEAR / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
~~D3161400~~.A.PN.EV.LDOMR.GW	MW-44B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/12/20	Well Depth (ft): 35.85
Well Number: MW-44B	DTW (ft): 7.34
Field Crew: MW, CS, TH, AF	Water Column (ft): 28.51

Remarks:

MW-44B-031220

SCREEN 16.1 - 37.1 Ft bgs

SAMPLING INFORMATION:

Depth sample was acquired:	23 Ft bgs
Sample Date/Time:	03/12/20 @ 1400
Signed Sampler:	Melissa Allen
Sample Observations:	TURBID / SLIGHT ODOR / ORANGE FLOC.
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
~~D3161400~~.A.PN.EV.LDOMR.GW	~~VBS-02~~ (MW)

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 0	Well Depth (ft):
Well Number:	DTW (ft):
Field Crew:	Water Column (ft):

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:	
Sample Date/Time:	
Signed Sampler:	
Sample Observations:	
Parameters (please circle):	VOCs SVOCs Dissolved Metals Other:

CUPBOARD CREEK ①

JACOBS

PROJECT NUMBER: ~~D3161400~~.A.PN.EV.LDOMR.GW | WELL NUMBER: MW-19

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/12/20	Well Depth (ft): 12.20
Well Number: MW-19	DTW (ft): 4.92
Field Crew: MW, AF, TH, CS	Water Column (ft): 7.28

Remarks: MW-19-031220

$Fe^{2+} = 0.0 \frac{mg}{L}$

SCREEN: 4.5-9.5 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 9.5 ft bTOC

Sample Date/Time: 03/12/20 @ ~~1030~~ @ 1230

Signed Sampler: Melissa Allen

Sample Observations: TURBID / STRAW COLOR / STRONG ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other): NITRATE, SULFATE CO_2, CO_4, ALKALINITY

JACOBS

PROJECT NUMBER: ~~D3161400~~.A.PN.EV.LDOMR.GW | WELL NUMBER: MW-20

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/12/20	Well Depth (ft): 19.46
Well Number: MW-20	DTW (ft): 8.69
Field Crew: MW, TH, CS, AF	Water Column (ft): 10.77

Remarks: MW-20-031220

$Fe^{2+} = 5.5 \frac{mg}{L}$

SCREEN: 4-19 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 16 ft bgs

Sample Date/Time: 03/12/20 @ 1030

Signed Sampler: Melissa Allen

Sample Observations: TURBID / STRONG ODOR / SHEEN

Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other): NITRATE, SULFATE CO_2, CO_4, ALKALINITY

JACOBS

PROJECT NUMBER: ~~D3161400~~.A.PN.EV.LDOMR.GW | WELL NUMBER: MW-23B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/12/20	Well Depth (ft): ~~44.30~~ @ 60.16
Well Number: MW-23B	DTW (ft): ~~4.50~~ @ 8.32
Field Crew: MW, TH, CS, AF	Water Column (ft): ~~42.80~~ @ 51.84

Remarks: MW-23B-031220

SCREEN: 28.0-50.5 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 40 ft ~~BGS~~ BTOC

Sample Date/Time: 03/12/20 @ 0910

Signed Sampler: Melissa Allen

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

KMLDOM20

CUPBOARD CREEK

(2)

JACOBS

PROJECT NUMBER	WELL NUMBER
KMLDOM20 D3161400.A.PN.EV.LDOMR.GW	MW-26

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/12/20	Well Depth (ft): 17.05
Well Number: MW-26	DTW (ft): 1.15
Field Crew: MW, TH, CS, AF	Water Column (ft):

Remarks:

MW-26-031220

SCREEN: 5-15 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 15 ~~ft~~ Ft BTOC (12 ft bgs)

Sample Date/Time: 03/12/20 @ 08 55

Signed Sampler: Melissa Ulle

Sample Observations: SLIGHTLY TURBID / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-26B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/12/20	Well Depth (ft): 44.30
Well Number: MW-26B	DTW (ft): 1.50
Field Crew: MW, TH, AF, CS	Water Column (ft): 42.80

Remarks:

MW-26B-031220

SCREEN: 26-38 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 30 ft bgs

Sample Date/Time: 03/12/20 @ 0845

Signed Sampler: Melissa Ulle

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-29

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/12/20	Well Depth (ft): 14.85
Well Number: MW-29	DTW (ft): 1.93
Field Crew: MW, CS, AF, TH	Water Column (ft): 12.92

Remarks:

MW-29-031220

SCREEN 5-15ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 12 ft bgs

Sample Date/Time: 03/12/20 @ 1250

Signed Sampler: Melissa Ulle

Sample Observations: CLEAR/NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

KMLDOMZ01

HAYFIELD

(1)

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-45B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/12/20

Well Number: MW-45B

Field Crew: MW, AF, CS, TH

Well Depth (ft): 40.94

DTW (ft): 11.35

Water Column (ft): 29.59

Remarks:

MW-45B-031220

SCREEN: 19-40.3 Ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 03/12/20 @ 0925

Sample Date/Time: 30 Ft bgs

Signed Sampler:

Sample Observations: CLEAR/NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-21

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/12/20

Well Number: MW-21

Field Crew: MW, AF

Well Depth (ft): 20.55 BTOC

DTW (ft): 10.58 BTOC

Water Column (ft): 9.97

Remarks:

MW-21-031220

SCREEN: 5-20 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 03/12 15 Ft bgs

Sample Date/Time: 03/12/20 @ 0925 & 0945

Signed Sampler:

Sample Observations: CLEAR/SLIGHT ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-17B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/12/20

Well Number: MW-17B

Field Crew: MW, AF

Well Depth (ft): 27.69

DTW (ft): 9.63

Water Column (ft):

Remarks:

7-17

SAMPLING INFORMATION:

Depth sample was acquired:

Sample Date/Time:

Signed Sampler:

Sample Observations:

Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

Attachment D1: Low Flow Sampling Log

JACOBS

PROJECT NUMBER: KMLDOM20

WELL NUMBER: SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number:	MW-46	Site:	LEWIS DRIVE
Field Crew:	TH, CS, MW	Date:	03/12/20
Well Depth (ft):	17.08	Purge	
DTW (ft):	3.81	Methodology: low flow	
Water Column (ft):	13.27		
Well Diameter (in):	2"		
Gal. Per ft:	0.163		
Well volume (gal):	2.16		
Depth of Screen (ft):	9-14.0 Ft bgs		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial number: 046465

Pump type (please circle): (Peristaltic) Bladder

Pump serial number: 15906

PID reading: opening well 0.2 after venting, if initially high middle of sampling closing well

Field Parameters

Time	DTW (toc)	Flow Rate (ml/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.33' or 4" & <5% of wc,	100-500	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1505	START	PUMP								(w)
1510	3.85	220	0.25	5.09	15.5	0.043	309.9	17.78	0.0	CLEAR / SLIGHT ODOR
1515	3.87	220	0.75	5.06	15.3	0.043	326.9	17.89	0.0	
1520	3.87	220	1.20	5.05	15.3	0.044	335.4	17.55	0.0	
1525	3.89	220	1.60	5.05	15.2	0.045	341.2	17.41	0.0	
1530	3.92	220	2.00	5.05	15.3	0.045	342.3	17.33	0.0	
1535	3.94	220	2.40	5.06	15.2	0.046	340.4	17.17	0.0	
1540	MW-46-031220									

Remarks:

MW-46-031220

Fe^{2+} = 0.0 mg/L

H_2O_2 = 0.0 mg/L

SODIUM PERSULFATE < 7.0 ppm

SAMPLING INFORMATION:

Depth to Water Before Sampling: 3.94 Depth sample was acquired: 14.0 ft bgs

Sample Methodology: LOW FLOW / STRAW

Sample Date/Time: 03/12/20 @ 1540

Signed Sampler:

Filtered Metals Collected: Y / (N) Filter Size: NA

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other) SULFATE

Attachment D2: High Flow Sampling Log

JACOBS

PROJECT NUMBER	WELL NUMBER
KMLDOM20	MW-13B
	SHEET 1 OF 1

HIGH FLOW SAMPLING LOG

Well Number: MW-13B
Field Crew: TH, CS
Well Depth (ft): ~~55.50~~ 48-58
DTW (ft): 18.82
Water Column (ft): 36.68
Well Diameter (in): 6
Gal. Per ft: 1.469
Well volume (gal): 79.99
Depth of Screen (ft): ~~40-60~~ 48-58
PID reading: opening well 6.70 after venting, if initially high 15.0 middle of sampling 18.3 closing well 16.9

Site: LEWIS DRIVE
Date: 3-10-20
Purge
Methodology: High

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 033622
Pump type (circle one) (Submersible) Trash
Pump serial #: 047008 Control Box # 047009

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	NA	0-10	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1310	~~21.94~~ ~~2.5~~		BEGIN		PURGE	6.249				
1315	21.94	2.5	20	7.53	17.9	~~2465~~	-208.6	4.14	4.35	CLEAR/STRONG ODOR
1320	33.21	2.5	32	7.43	17.6	~~2354~~	-218.6	3.94	5.90	" .235 ms/cm
1325	36.54	2.5	44	7.30	17.7	~~2274~~	-225.8	3.27	6.37	" .222 ms/cm
1330	41.62	2.5	56	7.23	17.8	.218	-156.5	4.01	7.00	"
1335	45.64	2.5	68	7.14	18.0	0.212	-127.7	4.34	4.51	"
1340	51.14	2.5	80	6.97	17.8	0.199	-126.1	3.81	5.57	"
1345	52.64	2.5	92	6.87	17.7	0.169	-112.6	3.50	6.18	"
1348	54.20	WELL DRY			PUMP SHUTOFF					
1354	51.94	RECHARGE DATA								
1359	49.82	RECHARGE DATA								
1404	48.29	RECHARGE DATA								
1414	45.43	RECHARGE DATA								
1424	42.70	RECHARGE DATA								
1459	35.25	Recharge data								
1538	29.26	Recharge data								
1656	22.67	Recovery data								
3/11 0736	18.80	RECOVERY								
3/11 1043	18.95	RECOVERY								
					3-10-20					

Remarks: 5 WELL VOLUMES = 399.95 gal
MW-13B-031120
TRIED USING GEOSUB WITH MEGA MONSOON, BUT GEO SUB KEPT GETTING CLOGGED WITH SAND.

SAMPLING INFORMATION:

Depth to Water Before Sampling: 18.95
Depth sample was acquired: 50 Ft bgs
Sample Methodology: BAILER
Sample Date/Time: 03/11/20 @ 1045
Signed Sampler:
Filtered Metals Collected: Y (N) Filter Size: NA
Sample Observations: STRONG ODOR / CLEAR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: High Flow Sampling Log

JACOBS

PROJECT NUMBER: KMLDOM20 | WELL NUMBER: MW-17B | SHEET 1 OF 1

HIGH FLOW SAMPLING LOG

Well Number: MW-17B | Site: LEWIS DRUG
Field Crew: TM, AF | Date: 3-11-20
Well Depth (ft): 27.50 | Purge
DTW (ft): 9.62 | Methodology: High
Water Column (ft): 17.88
Well Diameter (in): 6
Gal. Per ft: 1.469
Well volume (gal): 52.38 x 5 = 261.88
Depth of Screen (ft): 27.00
Water level indicator, serial #: 033622
Pump type (circle one): Submersible
Pump serial #: 039518 | Control Box # N/A
PID reading: opening well 633.0 | after venting, if initially high 88.7 | middle of sampling 221.0 | closing well 13.0

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	NA	0-10	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1540	9.60	START		PURGE						
1543	21.50	18	36	6.26	19.3	260.9	9.0	3.20	204.1	TURBID/STRONG ODOR
1545	WELL	DRY								
1550	11.53	AFTER	5 MIN	RECHARGE						
1553	BEGIN	PURGE	AGAIN	AT	LOWER	FLOW	RATE			
1558	17.20	6	60	5.97	19.6	174.8	42.8	1.80	690.2	TURBID/STRONG ODOR
1603	18.90	6	100	5.91	19.6	167.3	47.8	1.60	780.2	"
1608	19.43	6	135	6.04	19.6	167.2	44.6	2.23	~~785.2~~	CLEARING UP 654 NTU
1615	19.50	6	160	5.89	19.6	161.5	45.6	1.71	25.6	" STRONG ODOR
1620	19.50	6	190	5.84	19.7	158.5	57.4	1.27	24.5	CLOUDY/STRONG ODOR
1625	19.50	6	220	5.84	19.7	157.4	58.9	1.27	26.8	"
1630	19.50	6	250	5.89	19.6	155.6	29.7	1.62	40.0	"
1635	19.50	REACHED		5	WELL	VOLUMES	SHUTOFF		PUMP	
1640	12.95	RECOVERY		DATA						
1645	11.03	RECOVERY		DATA						
1650	10.45	RECOVERY		DATA						
1655	10.20	RECOVERY		DATA						
1705	9.95	RECOVERY		DATA						
1715	9.90	RECOVERY		DATA						
3/12 1000	9.65	RECOVERY		DATA						

Remarks: SHEEN IN FIRST READING. @ 1608 CLEANED NTU PROBE. GIVING FALSE READING FOR PREVIOUS TIMES
03/12/20 < 0.01 ft OF PRODUCT DETECTED WITH ~~SHEEN~~ SOUNDER CONFIRMED PRODUCT WITH BAILER (SEE PHOTO

SAMPLING INFORMATION:

Depth to Water Before Sampling: 0965 | Depth sample was acquired: 23Ft bgs
Sample Methodology: BAILER
Sample Date/Time: 03/12/20 @ 1000
Signed Sampler:
Filtered Metals Collected: Y (N) | Filter Size: N/A
Sample Observations: CLEAR / STRONG ODOR / ORANGE FILM
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

☆ DILUTE SAMPLE ☆

Attachment D2: High Flow Sampling Log

JACOBS

PROJECT NUMBER: KMLDOM20

WELL NUMBER: MW-15B

SHEET 1 OF 1

HIGH FLOW SAMPLING LOG

Well Number: MW-15B
Field Crew: TH, CS, MW, AF
Well Depth (ft): 73.65
DTW (ft): 13.77
Water Column (ft): 59.88
Well Diameter (in): 6
Gal. Per ft: 1.469
Well volume (gal): 114.07
Depth of Screen (ft): 77.90 - 67.90
PID reading: opening well 17.1 after venting, if initially high

Site: LEWIS DRIVE
Date: 3/10/20
Purge Methodology: High

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 033622
Pump type (circle one): (Submersible) x2 Trash
Pump serial #: 038215 & 029030
Control Box # 029226 & 24470
middle of sampling 22.1
closing well 15.0

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	NA	0-10	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0910	13.20	BEGIN PURGE								
0920	21.99	1.0	15	7.41	17.4	248.0	-119.6	3.00	107.23	BROWN/STRONG ODOR
0925	33.66	3.0	50	7.39	17.4	205.0	-170.9	3.23	28.26	SLIGHTLY BROWN/ STRONG ODOR
0930	43.34	3.5	77.5	7.45	17.5	202.5	-159.0	3.70	22.48	" "
0940	55.24	3.5	100	7.53	17.4	200.3	-112.3	3.79	22.81	" "
0945	61.08	2.0	115	7.58	17.4	200.6	-144.3	2.92	29.16	" "
0950	71.24	2.0	125	7.62	17.4	200.7	-154.7	3.24	23.76	" "
0955	75.58	2.0	135	7.69	17.6	206.3	-164.7	2.72	6530	" "
1000	WELL DRY / STOP PUMP AND REMOVE PUMP									
1022	77.48	RECOVERY DATA								
1052	75.80	RECOVERY DATA								
1233	70.80	RECOVERY DATA								
1335	68.41	RECOVERY DATA								
1418	67.01	RECOVERY DATA								
1501	65.58	RECOVERY DATA								
1541	64.27	RECOVERY DATA								
1700	61.83	RECOVERY DATA								
03/11 0731	42.27	RECOVERY DATA								
03/11 1015	39.70	RECOVERY DATA								
		03/10/20 - 3/11/20								

Remarks: 5 WELL VOLUMES = 570.35 GALLONS

MW-15B-031120

SAMPLING INFORMATION:

Depth to Water Before Sampling: 39.70
Depth sample was acquired: 70 ft bgs
Sample Methodology: BAILER
Sample Date/Time: 03/11/20 @ 1015
Signed Sampler:
Filtered Metals Collected: Y (N) Filter Size: NA
Sample Observations: CLEAR / STRONG ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: High Flow Sampling Log

JACOBS

PROJECT NUMBER: KMLDOM20

WELL NUMBER: MW-07

SHEET 1 OF 1

HIGH FLOW SAMPLING LOG

Well Number: MW-07
Site: Lewis Drive
Field Crew: TH CS
Date: 3/10/2020
Well Depth (ft): 13.66
Purge Methodology: High
DTW (ft): 6.88
Water Column (ft): 6.78
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): 1.11 x 5 = 5.55
Depth of Screen (ft): 13.5' - 3.0'

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 033622
Pump type (circle one) Submersible (Trash)
Pump serial #: 039518 Control Box # N/A

PID reading: opening well 76.0 after venting, if initially high 96.0 middle of sampling 88.0 closing well 94.0

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	NA	0-10	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1437	Begin	Purge								
1440	6.85	2	3	5.50	16.4	0.043	91.8	4.46	166.32	brown / odor
1442	DRY									
1444	8.98	Recovery	data							
1446	8.49	Recovery	data							
1448	8.01	Recovery	data							
1450	7.82	Recovery	data							
1452	7.62	Recovery	data							
1457	7.36	Recovery	data							
1535	6.95	Recovery	data							

3-10-20

Remarks: 5.55 = 5 well volumes
3.50 gallons purged before well was dry.
MW-07-031120

SAMPLING INFORMATION:

Depth to Water Before Sampling: 6.86 ft bgs
Depth sample was acquired: 10 ft bgs
Sample Methodology: BAILER
Sample Date/Time: 03/11/20 @
Signed Sampler:
Filtered Metals Collected: Y (N) Filter Size: NA
Sample Observations: SLIGHTLY TURBID / STRONG ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: High Flow Sampling Log

JACOBS

PROJECT NUMBER	WELL NUMBER	SHEET
KMLDOM20	MW-45	1 of 1

HIGH FLOW SAMPLING LOG

Well Number: MW-45
Field Crew: TM, CS
Well Depth (ft): 14.45
DTW (ft): 7.60
Water Column (ft): 6.85
Well Diameter (in): 2
Gal. Per ft: .163
Well volume (gal): 1.18
Depth of Screen (ft): 14.42 - 4.00
PID reading: opening well 0.0

Purge
Methodology: High

Site: LEWIS DRIVE
Date: 3-10-20

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 033627
Pump type (circle one) Submersible (Trash)
Pump serial #: 039518 Control Box # N/A

after venting, if initially high | middle of sampling | closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	NA	0-10	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1516	Begin	Purge								
1518	7.85	2	3	5.09	17.0	0.029	221.6	7.73	116.75	brown/no odor
1519	Dry									
1521	9.15	Recovery		data						
1523	8.80	RECOVERY		DATA						
1525	8.31	RECOVERY		DATA						
1527	8.11	RECOVERY		DATA						
1529	7.95	RECOVERY		DATA						
1534	7.70	RECOVERY		DATA						

3-10-20

Remarks:

MW-45-031120

SAMPLING INFORMATION:

Depth to Water Before Sampling: 7.65 ft bgs
Depth sample was acquired: 11 ft bgs
Sample Methodology: BAILER
Sample Date/Time: 03/11/20 @ 0930
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: NA
Sample Observations: SLIGHTLY TURBID / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: High Flow Sampling Log

JACOBS

PROJECT NUMBER: KMLDOM20

WELL NUMBER: MW-23

SHEET 1 OF

HIGH FLOW SAMPLING LOG

Well Number: MW-23
Site: LEWIS DRIVE
Field Crew: TM, CS
Date: 3-10-20
Well Depth (ft): 23.02
Purge
DTW (ft): 4.55
Methodology: High
Water Column (ft): 18.47
Well Diameter (in): 2

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Gal. Per ft: .163
Water level indicator, serial #: 033622
Well volume (gal): 3.01
Pump type (circle one) Submersible Trash
Depth of Screen (ft): ~~23-80~~ 5-20
Pump serial #: 039578
Control Box # N/A
PID reading: opening well 0.4 after venting, if initially high 0.5 middle of sampling closing well .4

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	NA	0-10	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1635	4.47	BEGIN	PURGE							
1638	8.11	3	6	5.00	15.6	0.078	163.5	4.50	4643	cloudy / no odor
1643	8.26	3	21	4.77	15.6	0.073	204.1	4.39	78.45	slightly cloudy / no odor
1644	Stop	pursing - pumped			more	than	5	well	volumes	
1645	5.30	Recovery	data							
1647	4.72	Recovery	data							
1649	4.73	RECOVERY	DATA							
1651	4.66	RECOVERY	DATA							
1653	4.55	RECOVERY	DATA							

3-10-20

Remarks:
5 well volumes = 15.05

MW-23-031120
MW-23D-031120

SAMPLING INFORMATION:

Depth to Water Before Sampling: 4.53 ft BTOC
Depth sample was acquired: 15 ft bgs
Sample Methodology: BAILER
Sample Date/Time: 03/11/20 @ 0920 DUP AT 0925
Signed Sampler:
Filtered Metals Collected: Y / (N) Filter Size: N/A
Sample Observations: TURBID / SLIGHT ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

MW-50B (1)

Attachment D2: High Flow Sampling Log

JACOBS

PROJECT NUMBER	WELL NUMBER
KMLDOM20	SHEET 1 OF 2 MW-50B

HIGH FLOW SAMPLING LOG

Well Number:	MW-50B	Site:	LEWIS DRIVE
Field Crew:	JH, CS	Date:	3-11-20
Well Depth (ft):	109.70	Purge	
DTW (ft):	18.22	Methodology: High	
Water Column (ft):	91.48		
Well Diameter (in):	4" + 13.75 BOREHOLE = 17.75		
Gal. Per ft:	.653 + ~~1.565~~ 7.74		
Well volume (gal):	~~1007.4~~ 201.48		
Depth of Screen (ft):	109.60		

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.387	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 033622

Pump type (circle one) Submersible Trash

Pump serial #: 039518 Control Box # N/A

PID reading: opening well 0.3 after venting, if initially high middle of sampling 0.0 closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	NA	0-10	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
0850	18.20	BEGIN		PURGE						
0855	24.90	10	25	6.20	17.2	71.4	113.9	2.34	487.2	Orangish/muddy
0900	25.41	8	85	5.60	17.3	59.7	146.9	3.11	6.3	clear/no odor
0905	25.66	8	135	5.56	17.2	58.0	158.3	3.11	3.5	clear/no odor
0910	25.82	8	170	5.44	17.3	57.8	186.0	3.06	1.1	"
0915	25.93	8	200	5.53	17.3	57.6	176.1	2.08	0.7	"
0920	25.99	8	240	5.48	17.3	57.6	183.7	2.42	0.2	"
0925	25.75	8	280	5.55	17.2	57.6	183.1	2.98	2.8	"
0930	25.82	8	320	5.49	17.3	~~56~~ 57.6	183.3	2.12	0.1	"
0935	25.87	8	360	5.53	17.2	57.5	184.8	3.05	0	"
0940	25.93	8	400	5.56	17.1	57.7	187.3	3.06	0	"
0945	26.00	8	440	5.52	17.3	57.5	186.0	2.40	0	"
0950	26.03	8	480	5.57	17.2	57.5	191.9	3.05	0	"
1000	26.14	8	560	5.48	17.3	57.5	194.8	2.46	0	"
1010	26.08	8	640	5.61	17.5	57.9	195.1	2.19	0	"
1020	26.16	8	720	5.61	17.6	58.0	197.7	1.95	0	"
1030	26.24	8	760	5.56	17.6	58.5	206.4	2.09	0	"
1040	25.85	8	820	5.59	17.5	58.1	214.4	3.05	4.3	", pump down ~2min
1050	26.02	8	~~840~~ 900	5.65	17.5	57.9	221.1	3.56	2.4	"
1100	26.14	8	980	5.70	17.5	58.1	221.4	3.42	0.7	"
1110	26.23	8	1160	5.60	17.4	57.8	201.5	2.71	0.2	"

Remarks: 5 WELL VOLUMES = 1007.4. WATER STARTED OUT VERY TURBID LIKE RED CLAY MIXED IN. CLEARED UP QUICK

SAMPLING INFORMATION:

Depth to Water Before Sampling:	18.37 Ft BTOC
Depth sample was acquired:	100.00 Ft
Sample Methodology:	BAILER
Sample Date/Time:	3/11/20 @ 1335
Signed Sampler:	
Filtered Metals Collected:	Y (N)
Filter Size:	NA
Sample Observations:	TURBID / NO ODOR
Parameters (please circle):	(VOCs) SVOCs Dissolved Metals Other:

MW-50B (2)

Attachment D2: High Flow Sampling Log

JACOBS

PROJECT NUMBER	WELL NUMBER
KMLDOM20	SHEET 2 OF 2 MW-50B

HIGH FLOW SAMPLING LOG

Well Number: MW-50B		Site: LEWIS DRIVE	
Field Crew:		Date: 3-11-20	
Well Depth (ft):	Purge	Diameter / Gal. Per Foot	Diameter / Gal. Per Foot
DTW (ft):	Methodology: High	2" 0.163	5" 1.02
Water Column (ft): SEE		3" 0.367	6" 1.469
Well Diameter (in): PAGE 1		4" 0.653	8" 2.611
Gal. Per ft:		Water level indicator, serial #:	
Well volume (gal):		Pump type (circle one) SEE PG 1	Submersible (Trash)
Depth of Screen (ft):		Pump serial #:	Control Box #

PID reading: opening well | after venting, if initially high | middle of sampling | closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	NA	0-10	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1111	23.22	RECOVERY		DATA						
1113	21.24	RECOVERY		DATA						
1115	20.50	RECOVERY		DATA						
1117	20.21	RECOVERY		DATA						
1119	20.04	RECOVERY		DATA						
1121	19.80	RECOVERY		DATA						
1123	19.65	RECOVERY		DATA						
1125	19.58	RECOVERY		DATA						
1127	19.48	RECOVERY		DATA						
1129	19.39	RECOVERY		DATA						
1134	19.24	RECOVERY		DATA						
1139	19.12	RECOVERY		DATA						
1144	19.03	RECOVERY		DATA						
1335	18.37	RECOVERY		DATA						
1335	MW-50B-031120									

Remarks: MW-50B-031120

SAMPLING INFORMATION:

Depth to Water Before Sampling: 18.37 Ft BTOC	Depth sample was acquired: 100.00
Sample Methodology: BAILER	
Sample Date/Time: 03/11/20	
Signed Sampler:	
Filtered Metals Collected: Y (N)	Filter Size: NA
Sample Observations: TURBID / NO ODOR	
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:	

Attachment D2: High Flow Sampling Log

JACOBS

PROJECT NUMBER: KMLDOM20

WELL NUMBER: MW-12B

SHEET 1 OF 1

HIGH FLOW SAMPLING LOG

Well Number: MW-12B
Field Crew: TH, AF
Well Depth (ft): 39.19
DTW (ft): 10.92
Water Column (ft): 28.27
Well Diameter (in): 6
Gal. Per ft: 1.469
Well volume (gal): 67.64 x 5 = 338.19
Depth of Screen (ft): 43.00

Site: LEWIS DRIVE
Date: 3-11-20

Purge Methodology: High

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial # 033622
Pump type (circle one) Submersible (Trash)
Pump serial #: D39518 Control Box # N/A

PID reading: opening well; after venting, if initially high; middle of sampling; closing well

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	NA	0-10	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1355	10.92	BEGIN PURGE								
1400	12.60	16	10	6.02	16.7	78.8	82.2	2.62	110.1	BROWN / NO ODOR
1405	12.84	16	115	5.97	16.4	68.5	81.6	3.45	5.7	clear / no odor
1410	12.93	16	240	5.88	16.6	64.8	94.4	3.39	2.0	" "
1415	12.46	16	300	5.96	16.5	62.6	94.9	4.40	0.2	" "
1420	11.35	16	400	5.85	16.5	60.4	108.8	4.23	0.4	" "
1420	STOPPED	PURGE								
1421	9.68	RECOVERY DATA								
1423	9.12	RECOVERY DATA								
1425	9.05	RECOVERY DATA								
1427	8.98	RECOVERY DATA								
1429	8.95	RECOVERY DATA								
1433	8.95	RECOVERY DATA								
				3-11-20						

Remarks:

MW-12B-031120

SCREEN 23-33 ft BGS

SAMPLING INFORMATION:

Depth to Water Before Sampling: 9.03 bTOC
Depth sample was acquired: 25 ft BGS
Sample Methodology: BAILER
Sample Date/Time: 03/12/20 @ 1500
Signed Sampler:
Filtered Metals Collected: Y (N) Filter Size: NA
Sample Observations: SLIGHTLY TURBID / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

Attachment D2: High Flow Sampling Log

JACOBS

PROJECT NUMBER	WELL NUMBER
KMLDOM20	MW-36
	SHEET 1 OF 1

HIGH FLOW SAMPLING LOG

Well Number: MW-36
Field Crew: TH CS
Well Depth (ft): 23.66
DTW (ft): 13.01
Water Column (ft): 10.65
Well Diameter (in): 2
Gal. Per ft: 0.163
Well volume (gal): ~~23.66~~ 1.74
Depth of Screen (ft): 23.65

Site: LEWIS DRIVE
Date: 3-10-20

Purge
Methodology: High

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	6"	1.469
4"	0.653	8"	2.611

Water level indicator, serial #: 033627
Pump type (circle one) Submersible (Trash)
Pump serial #: 039518 Control Box # N/A

PID reading: 0.1 opening well; after venting, if initially high; middle of sampling; closing well 45.7

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (°C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	NA	0-10	NA	±0.1 SU	±1°C	±10%	±10 mV	±10%	±10% or < 10	NA
1605	Begin purge									
1606	12.97	2	1.25	5.61	18.7	0.095	48.0	4.27	70.15	Cloudy/no odor
1611	16.31	2	11.25	5.30	18.5	0.031	102.1	5.41	1.50	Clear/no odor
1612	Stopped pursing - pumped over 5 well volumes									
1614	13.9	Recovery data								
1616	13.56	Recovery data								
1618	13.36	Recovery data								
1620	13.25	Recovery data								
1625	13.12	Recovery data								

3-10-20

Remarks: 5 well volumes = 7.01

~~MW-36~~ MW-36-031320
MW-36-D-031320

SCREEN: 9.5-24.5

SAMPLING INFORMATION:

Depth to Water Before Sampling: 13.01
Depth sample was acquired: 20 ft
Sample Methodology: HIGH FLOW / BAILER
Sample Date/Time: 03/13/20 @ 0835
Signed Sampler:
Filtered Metals Collected: Y (N) Filter Size: NA
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

HAYFIELD (1)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-02

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/13/20	Well Depth (ft): 17.40
Well Number: MW-02	DTW (ft): 1.59
Field Crew: TH, CS, AF	Water Column (ft): 15.81

Remarks:

MW-02-031320

$Fe^{2+} = 0.0 \frac{mg}{L}$

SCREEN 5-20 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 15'

Sample Date/Time: 03/13/20 @ 1045

Signed Sampler: Melissa Allen

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other:) MNA

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-02B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/13/20	Well Depth (ft): 82.16
Well Number: MW-02B	DTW (ft): 9.90
Field Crew: TH, CS, AF	Water Column (ft): 72.20

Remarks:

MW-02B-031320

SCREEN: 70-81 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 75'

Sample Date/Time: 03/13/20 @ 1055

Signed Sampler: Melissa Allen

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-03

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/13/20	Well Depth (ft): 20.25
Well Number: MW-03	DTW (ft): 4.67
Field Crew: TH, AF, CS	Water Column (ft): 15.58

Remarks: WELL UNDER PRESSURE.

MW-03-031320

WATER TOO TURBID TO TELL A DIFFERENCE IN COLOR

$Fe^{2+} = ? \frac{mg}{L}$

SCREEN: 5-20 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 17 ft

Sample Date/Time: 03/13/20 @

Signed Sampler: Melissa Allen

Sample Observations: BROWN TURBID WATER

Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other:) MNA

KMLDOM20

HAYFIELD

2

JACOBS

PROJECT NUMBER: ~~D3161400~~.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-04

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/13/20

Well Number: MW-04

Field Crew: TH, CS, AF

Well Depth (ft): 19.82

DTW (ft): 4.74

Water Column (ft): 15.08

Remarks:

MW-04-031320

$Fe^{2+} = 0.0 \frac{mg}{L}$

SCREEN: 5-20 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 18'

Sample Date/Time: 03/13/20 1030

Signed Sampler:

Sample Observations: SLIGHTLY TURBID

Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other:) MNA

JACOBS

PROJECT NUMBER: ~~D3161400~~.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-05

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/13/20

Well Number: MW-05

Field Crew: MW, AF, CS, TH

Well Depth (ft): 19.82

DTW (ft): 6.65

Water Column (ft): 13.17

Remarks:

MW-05-031320

MW-05-D-031320

☆ DUPLICATE ☆

SCREEN: 5-20 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 2'

Sample Date/Time: 03/13/20 @ 1140 DUP @ 1145

Signed Sampler:

Sample Observations: CLEAR / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: ~~D3161400~~.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-06

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/13/20

Well Number: MW-06

Field Crew: MW, TH, CS, AF

Well Depth (ft): 19.25

DTW (ft): 7.05

Water Column (ft): 12.20

Remarks:

MW-06-031320

SCREEN: 5-19.6 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 13'

Sample Date/Time: 03/13/20 @ 1150

Signed Sampler:

Sample Observations: CLEAR, NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

KMLDOM20

HAYFIELD

(3)

JACOBS

PROJECT NUMBER: ~~D3161400~~.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-06B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/13/20

Well Number: MW-06B

Field Crew: AF, CS, TH, MW

Remarks:

Well Depth (ft): 68.15

DTW (ft): 7.20

Water Column (ft): 60.95

MW-06B-031320

SCREEN: 65.5 - 85.5

SAMPLING INFORMATION:

Depth sample was acquired: 72'

Sample Date/Time: 03/13/20 @ 1155

Signed Sampler:

Sample Observations: CLEAR, NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: ~~D3161400~~.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-08

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/13/20

Well Number: MW-08

Field Crew: MW, AF, CS, TH

Remarks:

Well Depth (ft): 17.00

DTW (ft): 8.15

Water Column (ft): 8.85

MW-08-031320

$Fe^{2+} = 0.0 \frac{mg}{L}$

SCREEN 4.7 - 19.7

SAMPLING INFORMATION:

Depth sample was acquired: 12'

Sample Date/Time: 03/13/20 @ 1315

Signed Sampler:

Sample Observations: LIGHT BROWN / NO ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other) MNA

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER: MW-09

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 03/13/20

Well Number: MW-09

Field Crew: MW-TH, CS, AF

Remarks: WELL UNDER PRESSURE

Well Depth (ft): 19.82

DTW (ft): 2.70

Water Column (ft): 16.58

MW-09-031320

$Fe^{2+} = 0.0 \frac{mg}{L}$

SCREEN: 4.5 - 19.5 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 14'

Sample Date/Time: 03/13/20 @ 1120

Signed Sampler:

Sample Observations: CLEAR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other:) MNA

KMLDOM20

JACOBS

PROJECT NUMBER: ~~D3161400~~.A.PN.EV.LDOMR.GW
WELL NUMBER: MW-09B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 03/13/20
Well Number: MW-09B-031320
Field Crew: TH, CS
Well Depth (ft): 152.0
DTW (ft): 3.75
Water Column (ft): 148.25
Remarks:

MW-09B-031320

SCREEN: 131-151 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 135 ft bgs
Sample Date/Time: 03/13/20 @ 1115
Signed Sampler:
Sample Observations: SLIGHT TURBIDITY
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW
WELL NUMBER: MW-10-

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 03/13/20
Well Number: MW-10
Field Crew: MW, TH, CS, AF
Well Depth (ft): 23.35
DTW (ft): 6.13
Water Column (ft): 17.22
Remarks:

MW-10-031320

$Fe^{2+} = 0.0 \frac{mg}{L}$

SCREEN: 5-20 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 15'
Sample Date/Time: 03/13/20 @ 1240
Signed Sampler:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals ~~Other:~~ MNA

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW
WELL NUMBER: MW-16

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 03-13-20
Well Number: MW-16
Field Crew: TH, CS, AF
Well Depth (ft): 20.09
DTW (ft): 2.35
Water Column (ft): 17.74
Remarks: FLOCCULANT PRESENT
WELL PRESSURIZED. SCREEN IN HYDRASLEEVE

MW-16-031320

$Fe^{2+} = 0.0$ mg/L

SAMPLING INFORMATION:

Depth sample was acquired: 13'
Sample Date/Time: 3-13-20 / 1250
Signed Sampler:
Sample Observations: LIGHT BROWN / STRONG ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other: MNA

(5)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-17

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date:	Well Depth (ft):
Well Number:	DTW (ft):
Field Crew:	Water Column (ft):

Remarks:

SAMPLING INFORMATION:

Depth sample was acquired:

Sample Date/Time:

Signed Sampler:

Sample Observations:

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-18

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 3-13-20	Well Depth (ft): 19.31
Well Number: MW-18	DTW (ft): 4.70
Field Crew: TH, CS, AF	Water Column (ft): 14.61

Remarks: SHEEN IN HYDRASLEEVE

MW-18-031320

$Fe^{2+} = 1.0 \frac{mg}{L}$

SAMPLING INFORMATION:

Depth sample was acquired: 12'

Sample Date/Time: 03-13-20 / 1305

Signed Sampler:

Sample Observations: SLIGHTLY TURBID / STRONG ODOR

Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other: MNA)

JACOBS

PROJECT NUMBER	WELL NUMBER
D3161400.A.PN.EV.LDOMR.GW	MW-30

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC

Date: 3-13-20	Well Depth (ft): 14.68
Well Number: MW-30	DTW (ft): 8.71
Field Crew: TH, CS	Water Column (ft): 5.97

Remarks: CLEAR BUT WITH SMALL FINES IN SAMPLE

MW-30-031320

SAMPLING INFORMATION:

Depth sample was acquired: 12 FT

Sample Date/Time: 3-13-20 / 0935

Signed Sampler:

Sample Observations: CLEAR SMALL FINES

Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

LD
KMDMOMZO

HAYFIELD

(6)

JACOBS

PROJECT NUMBER: ~~D3161400.~~A.PN.EV.LDOMR.GW

WELL NUMBER: MW-32

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 3-13-20
Well Number: MW-32
Field Crew: TH, CS
Remarks:

Well Depth (ft): 28.49
DTW (ft): 11.29
Water Column (ft): 17.20

MW-32-031320

SCREEN 15-25 bgs

Fe^{2+} = 0.0 mg/L

SAMPLING INFORMATION:

Depth sample was acquired: ~~NAVD88~~ 21'
Sample Date/Time: 3-13-20 / 1005
Signed Sampler:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals (Other:) MNA

JACOBS

PROJECT NUMBER: ~~D3161400.~~A.PN.EV.LDOMR.GW

WELL NUMBER: MW-36B

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date: 03-13-20
Well Number: MW-36B
Field Crew: TH, CS, MW
Remarks:

Well Depth (ft): 55.90
DTW (ft): 12.95
Water Column (ft): 42.95

MW-36B-031320

SCREEN: 10-25 ft bgs

SAMPLING INFORMATION:

Depth sample was acquired: 20 ft bgs
Sample Date/Time: 03/13/20 @0845
Signed Sampler:
Sample Observations: CLEAR / NO ODOR
Parameters (please circle): (VOCs) SVOCs Dissolved Metals Other:

JACOBS

PROJECT NUMBER: D3161400.A.PN.EV.LDOMR.GW

WELL NUMBER:

HYDRASLEEVE SAMPLING LOG

Site: Lewis Drive Site, Belton, SC
Date:
Well Number:
Field Crew:
Remarks:

Well Depth (ft):
DTW (ft):
Water Column (ft):

SAMPLING INFORMATION:

Depth sample was acquired:
Sample Date/Time:
Signed Sampler:
Sample Observations:
Parameters (please circle): VOCs SVOCs Dissolved Metals Other:

Appendix B
Analytical Laboratory Reports

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

February 19, 2020

Kinder Morgan- Atlanta, GA

Sample Delivery Group:	L1188791
Samples Received:	02/12/2020
Project Number:	KMLDOM20 B. CS. GEN.
Description:	Lewis Drive Groundwater
Site:	LEWIS DRIVE
Report To:	Bethany Garvey Ten 10th Street NW Suite 1400 Atlanta, GA 30309

Entire Report Reviewed By:

Chris McCord
Project Manager

MW-41-021120 L1188791-01 GW

Collected by: Melissa Warren | Collected date/time: 02/11/20 15:10 | Received date/time: 02/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1427741	1	02/14/20 04:39	02/14/20 04:39	JCP	Mt. Juliet, TN

MW-40-021120 L1188791-02 GW

Collected by: Melissa Warren | Collected date/time: 02/11/20 15:20 | Received date/time: 02/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1427741	1	02/14/20 04:58	02/14/20 04:58	JCP	Mt. Juliet, TN

MW-34-021120 L1188791-03 GW

Collected by: Melissa Warren | Collected date/time: 02/11/20 15:25 | Received date/time: 02/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1427741	1	02/14/20 05:17	02/14/20 05:17	JCP	Mt. Juliet, TN

MW-39-021120 L1188791-04 GW

Collected by: Melissa Warren | Collected date/time: 02/11/20 15:30 | Received date/time: 02/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1427741	1	02/14/20 05:36	02/14/20 05:36	JCP	Mt. Juliet, TN

MW-51-021120 L1188791-05 GW

Collected by: Melissa Warren | Collected date/time: 02/11/20 16:35 | Received date/time: 02/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1427741	1	02/14/20 05:55	02/14/20 05:55	JCP	Mt. Juliet, TN

MW-52-021120 L1188791-06 GW

Collected by: Melissa Warren | Collected date/time: 02/11/20 17:05 | Received date/time: 02/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1427741	1	02/14/20 06:14	02/14/20 06:14	JCP	Mt. Juliet, TN

MW-12B-021120 L1188791-07 GW

Collected by: Melissa Warren | Collected date/time: 02/11/20 17:20 | Received date/time: 02/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1427741	1	02/14/20 06:34	02/14/20 06:34	JCP	Mt. Juliet, TN

FB01-021120 L1188791-08 GW

Collected by: Melissa Warren | Collected date/time: 02/11/20 17:40 | Received date/time: 02/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1427741	1	02/14/20 03:23	02/14/20 03:23	JCP	Mt. Juliet, TN

MW-37-021120 L1188791-09 GW

Collected by: Melissa Warren
Collected date/time: 02/11/20 13:55
Received date/time: 02/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1428264	1	02/15/20 15:05	02/15/20 15:05	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1427741	1	02/14/20 06:53	02/14/20 06:53	JCP	Mt. Juliet, TN

MW-38-021120 L1188791-10 GW

Collected by: Melissa Warren
Collected date/time: 02/11/20 15:15
Received date/time: 02/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1428264	1	02/15/20 15:41	02/15/20 15:41	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1427741	1	02/14/20 07:12	02/14/20 07:12	JCP	Mt. Juliet, TN

TB02-021120 L1188791-11 GW

Collected by: Melissa Warren
Collected date/time: 02/11/20 00:00
Received date/time: 02/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1427741	1	02/14/20 03:42	02/14/20 03:42	JCP	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, 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.

Chris McCord
Project Manager

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/14/2020 04:39	WG1427741
Toluene	ND		1.00	1	02/14/2020 04:39	WG1427741
Ethylbenzene	ND		1.00	1	02/14/2020 04:39	WG1427741
Total Xylenes	ND		3.00	1	02/14/2020 04:39	WG1427741
Methyl tert-butyl ether	ND		1.00	1	02/14/2020 04:39	WG1427741
Naphthalene	ND		5.00	1	02/14/2020 04:39	WG1427741
1,2-Dichloroethane	ND		1.00	1	02/14/2020 04:39	WG1427741
(S) Toluene-d8	*107*		*80.0-120*		*02/14/2020 04:39*	WG1427741
(S) 4-Bromofluorobenzene	*112*		*77.0-126*		*02/14/2020 04:39*	WG1427741
(S) 1,2-Dichloroethane-d4	*92.8*		*70.0-130*		*02/14/2020 04:39*	WG1427741

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	125		1.00	1	02/14/2020 04:58	WG1427741
Toluene	38.7		1.00	1	02/14/2020 04:58	WG1427741
Ethylbenzene	1.10		1.00	1	02/14/2020 04:58	WG1427741
Total Xylenes	78.1		3.00	1	02/14/2020 04:58	WG1427741
Methyl tert-butyl ether	19.2		1.00	1	02/14/2020 04:58	WG1427741
Naphthalene	ND		5.00	1	02/14/2020 04:58	WG1427741
1,2-Dichloroethane	ND		1.00	1	02/14/2020 04:58	WG1427741
(S) Toluene-d8	*103*		*80.0-120*		*02/14/2020 04:58*	WG1427741
(S) 4-Bromofluorobenzene	*118*		*77.0-126*		*02/14/2020 04:58*	WG1427741
(S) 1,2-Dichloroethane-d4	*99.9*		*70.0-130*		*02/14/2020 04:58*	WG1427741

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	5.41		1.00	1	02/14/2020 05:17	WG1427741
Toluene	ND		1.00	1	02/14/2020 05:17	WG1427741
Ethylbenzene	ND		1.00	1	02/14/2020 05:17	WG1427741
Total Xylenes	ND		3.00	1	02/14/2020 05:17	WG1427741
Methyl tert-butyl ether	157		1.00	1	02/14/2020 05:17	WG1427741
Naphthalene	ND		5.00	1	02/14/2020 05:17	WG1427741
1,2-Dichloroethane	ND		1.00	1	02/14/2020 05:17	WG1427741
(S) Toluene-d8	*108*		*80.0-120*		*02/14/2020 05:17*	WG1427741
(S) 4-Bromofluorobenzene	*116*		*77.0-126*		*02/14/2020 05:17*	WG1427741
(S) 1,2-Dichloroethane-d4	*89.7*		*70.0-130*		*02/14/2020 05:17*	WG1427741

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	2.28		1.00	1	02/14/2020 05:36	WG1427741
Toluene	ND		1.00	1	02/14/2020 05:36	WG1427741
Ethylbenzene	ND		1.00	1	02/14/2020 05:36	WG1427741
Total Xylenes	5.04		3.00	1	02/14/2020 05:36	WG1427741
Methyl tert-butyl ether	123		1.00	1	02/14/2020 05:36	WG1427741
Naphthalene	ND		5.00	1	02/14/2020 05:36	WG1427741
1,2-Dichloroethane	ND		1.00	1	02/14/2020 05:36	WG1427741
(S) Toluene-d8	*107*		*80.0-120*		*02/14/2020 05:36*	WG1427741
(S) 4-Bromofluorobenzene	*114*		*77.0-126*		*02/14/2020 05:36*	WG1427741
(S) 1,2-Dichloroethane-d4	*90.5*		*70.0-130*		*02/14/2020 05:36*	WG1427741

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/14/2020 05:55	WG1427741
Toluene	ND		1.00	1	02/14/2020 05:55	WG1427741
Ethylbenzene	ND		1.00	1	02/14/2020 05:55	WG1427741
Total Xylenes	ND		3.00	1	02/14/2020 05:55	WG1427741
Methyl tert-butyl ether	ND		1.00	1	02/14/2020 05:55	WG1427741
Naphthalene	ND		5.00	1	02/14/2020 05:55	WG1427741
1,2-Dichloroethane	ND		1.00	1	02/14/2020 05:55	WG1427741
(S) Toluene-d8	*108*		*80.0-120*		*02/14/2020 05:55*	WG1427741
(S) 4-Bromofluorobenzene	*114*		*77.0-126*		*02/14/2020 05:55*	WG1427741
(S) 1,2-Dichloroethane-d4	*89.7*		*70.0-130*		*02/14/2020 05:55*	WG1427741

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/14/2020 06:14	WG1427741
Toluene	ND		1.00	1	02/14/2020 06:14	WG1427741
Ethylbenzene	ND		1.00	1	02/14/2020 06:14	WG1427741
Total Xylenes	ND		3.00	1	02/14/2020 06:14	WG1427741
Methyl tert-butyl ether	ND		1.00	1	02/14/2020 06:14	WG1427741
Naphthalene	ND		5.00	1	02/14/2020 06:14	WG1427741
1,2-Dichloroethane	ND		1.00	1	02/14/2020 06:14	WG1427741
(S) Toluene-d8	*107*		*80.0-120*		*02/14/2020 06:14*	WG1427741
(S) 4-Bromofluorobenzene	*113*		*77.0-126*		*02/14/2020 06:14*	WG1427741
(S) 1,2-Dichloroethane-d4	*91.0*		*70.0-130*		*02/14/2020 06:14*	WG1427741

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	64.9		1.00	1	02/14/2020 06:34	WG1427741
Toluene	3.75		1.00	1	02/14/2020 06:34	WG1427741
Ethylbenzene	22.9		1.00	1	02/14/2020 06:34	WG1427741
Total Xylenes	74.6		3.00	1	02/14/2020 06:34	WG1427741
Methyl tert-butyl ether	ND		1.00	1	02/14/2020 06:34	WG1427741
Naphthalene	23.1		5.00	1	02/14/2020 06:34	WG1427741
1,2-Dichloroethane	ND		1.00	1	02/14/2020 06:34	WG1427741
(S) Toluene-d8	*107*		*80.0-120*		*02/14/2020 06:34*	WG1427741
(S) 4-Bromofluorobenzene	*112*		*77.0-126*		*02/14/2020 06:34*	WG1427741
(S) 1,2-Dichloroethane-d4	*91.9*		*70.0-130*		*02/14/2020 06:34*	WG1427741

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/14/2020 03:23	WG1427741
Toluene	ND		1.00	1	02/14/2020 03:23	WG1427741
Ethylbenzene	ND		1.00	1	02/14/2020 03:23	WG1427741
Total Xylenes	ND		3.00	1	02/14/2020 03:23	WG1427741
Methyl tert-butyl ether	ND		1.00	1	02/14/2020 03:23	WG1427741
Naphthalene	ND		5.00	1	02/14/2020 03:23	WG1427741
1,2-Dichloroethane	ND		1.00	1	02/14/2020 03:23	WG1427741
(S) Toluene-d8	*108*		*80.0-120*		*02/14/2020 03:23*	WG1427741
(S) 4-Bromofluorobenzene	*114*		*77.0-126*		*02/14/2020 03:23*	WG1427741
(S) 1,2-Dichloroethane-d4	*92.3*		*70.0-130*		*02/14/2020 03:23*	WG1427741

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	15200		5000	1	02/15/2020 15:05	WG1428264

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/14/2020 06:53	WG1427741
Toluene	ND		1.00	1	02/14/2020 06:53	WG1427741
Ethylbenzene	ND		1.00	1	02/14/2020 06:53	WG1427741
Total Xylenes	ND		3.00	1	02/14/2020 06:53	WG1427741
Methyl tert-butyl ether	2.89		1.00	1	02/14/2020 06:53	WG1427741
Naphthalene	ND		5.00	1	02/14/2020 06:53	WG1427741
1,2-Dichloroethane	ND		1.00	1	02/14/2020 06:53	WG1427741
(S) Toluene-d8	*104*		*80.0-120*		*02/14/2020 06:53*	WG1427741
(S) 4-Bromofluorobenzene	*111*		*77.0-126*		*02/14/2020 06:53*	WG1427741
(S) 1,2-Dichloroethane-d4	*91.5*		*70.0-130*		*02/14/2020 06:53*	WG1427741

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	65500		5000	1	02/15/2020 15:41	WG1428264

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	114		1.00	1	02/14/2020 07:12	WG1427741
Toluene	ND		1.00	1	02/14/2020 07:12	WG1427741
Ethylbenzene	ND		1.00	1	02/14/2020 07:12	WG1427741
Total Xylenes	66.3		3.00	1	02/14/2020 07:12	WG1427741
Methyl tert-butyl ether	123		1.00	1	02/14/2020 07:12	WG1427741
Naphthalene	ND		5.00	1	02/14/2020 07:12	WG1427741
1,2-Dichloroethane	ND		1.00	1	02/14/2020 07:12	WG1427741
(S) Toluene-d8	*106*		*80.0-120*		*02/14/2020 07:12*	WG1427741
(S) 4-Bromofluorobenzene	*113*		*77.0-126*		*02/14/2020 07:12*	WG1427741
(S) 1,2-Dichloroethane-d4	*91.4*		*70.0-130*		*02/14/2020 07:12*	WG1427741

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/14/2020 03:42	WG1427741
Toluene	ND		1.00	1	02/14/2020 03:42	WG1427741
Ethylbenzene	ND		1.00	1	02/14/2020 03:42	WG1427741
Total Xylenes	ND		3.00	1	02/14/2020 03:42	WG1427741
Methyl tert-butyl ether	ND		1.00	1	02/14/2020 03:42	WG1427741
Naphthalene	ND		5.00	1	02/14/2020 03:42	WG1427741
1,2-Dichloroethane	ND		1.00	1	02/14/2020 03:42	WG1427741
(S) Toluene-d8	*108*		*80.0-120*		*02/14/2020 03:42*	WG1427741
(S) 4-Bromofluorobenzene	*111*		*77.0-126*		*02/14/2020 03:42*	WG1427741
(S) 1,2-Dichloroethane-d4	*92.2*		*70.0-130*		*02/14/2020 03:42*	WG1427741

Method Blank (MB)

(MB) R3500217-1 02/15/20 12:55

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Sulfate	U		77.4	5000

L1188791-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1188791-09 02/15/20 15:05 • (DUP) R3500217-3 02/15/20 15:23

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	15200	15100	1	0.441		15

L1189245-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1189245-01 02/15/20 21:03 • (DUP) R3500217-6 02/15/20 21:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	17200	17100	1	0.697		15

Laboratory Control Sample (LCS)

(LCS) R3500217-2 02/15/20 13:13

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Sulfate	40000	39900	99.7	80.0-120	

L1188791-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1188791-10 02/15/20 15:41 • (MS) R3500217-4 02/15/20 15:59 • (MSD) R3500217-5 02/15/20 16:17

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfate	50000	65500	112000	113000	93.6	94.2	1	80.0-120	E	E	0.292	15

L1189250-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1189250-01 02/15/20 22:15 • (MS) R3500217-7 02/15/20 22:33

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	ug/l	ug/l	ug/l	%		%	
Sulfate	50000	252	51100	102	1	80.0-120	

Method Blank (MB)

(MB) R3500759-3 02/14/20 03:04

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*109*			*80.0-120*
(S) 4-Bromofluorobenzene	*114*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*88.8*			*70.0-130*

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

(LCS) R3500759-1 02/14/20 02:07 • (LCSD) R3500759-2 02/14/20 02:26

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	4.90	4.89	98.0	97.8	70.0-130			0.204	20
1,2-Dichloroethane	5.00	4.31	4.19	86.2	83.8	70.0-130			2.82	20
Ethylbenzene	5.00	5.03	5.01	101	100	70.0-130			0.398	20
Methyl tert-butyl ether	5.00	5.21	5.01	104	100	70.0-130			3.91	20
Naphthalene	5.00	5.35	6.48	107	130	70.0-130			19.1	20
Toluene	5.00	5.07	4.98	101	99.6	70.0-130			1.79	20
Xylenes, Total	15.0	15.7	15.8	105	105	70.0-130			0.635	20
(S) Toluene-d8				*107*	*106*	*80.0-120*				
(S) 4-Bromofluorobenzene				*116*	*113*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*92.8*	*91.6*	*70.0-130*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(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.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).

Pace National 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.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

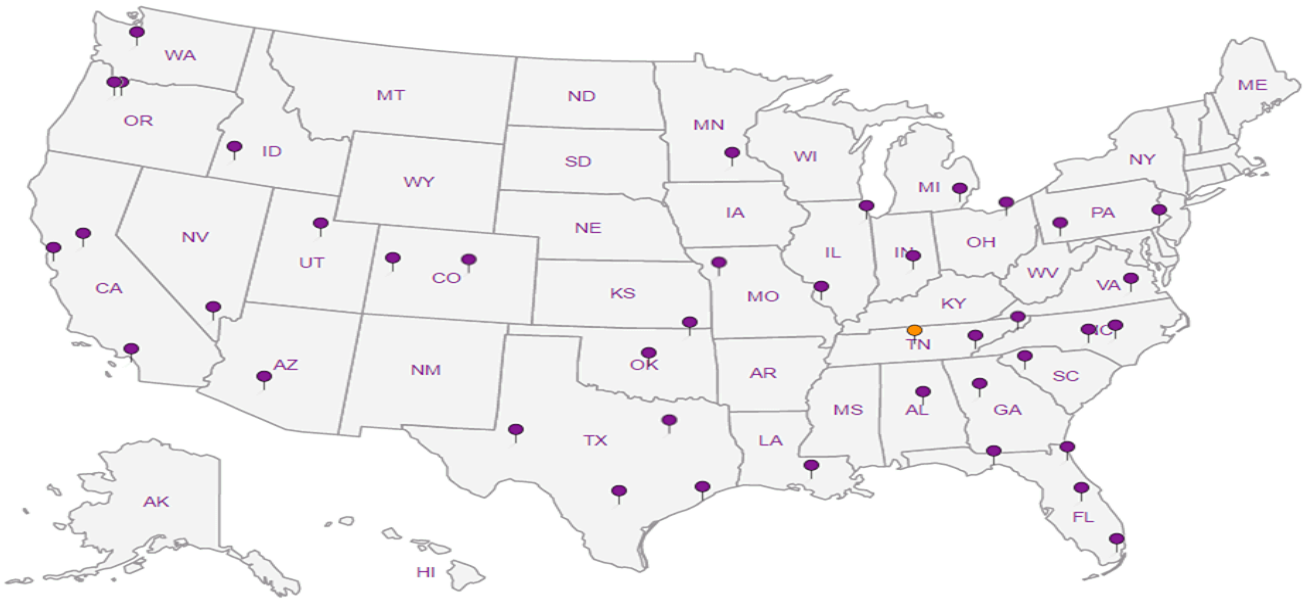
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National 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. Pace National performs all testing at our central laboratory.



Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com; tom.wiley@jacobs.com

Project Description: Lewis Drive Groundwater

City/State Collected: BELTON, SC

Please Circle: PT MT CT ET

Phone: 770-604-9182
Fax:

Client Project # KMLDOM20 B.CS.GEN.LDOM.R.GW

Lab Project # KINCH2MGA-LEWIS12

Collected by (print): MELISSA WARREN

Site/Facility ID # LEWIS DRIVE

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately Packed on Ice N___ Y: X

Chain of Custody Page 1 of 2

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # 1188791
A203

Acctnum: KINCH2MGA
Template: T162658
Prelogin: P754956
PM: 526 - Chris McCord
PB: 2-5-2020 GM

Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	SULFATE 125mlHDPE-NoPres	V8260BTEXMNSC 40mlAmb-HCl	V8260BTEXMNSC-TB 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
MW-41-021120	GRAB	GW	NA	02/11/20	1510	3		X			-01
MW-40-021120		GW			1520	3		X			-02
MW-34-021120		GW			1525	3		X			-03
MW-39-021120		GW			1530	3		X			-04
MW-51-021120		GW			1635	3		X			-05
MW-52-021120		GW			1705	3		X			-06
MW-12B-021120		GW			1720	3		X			-07
FB01-021120		GW			1740	3		X			-08
MW-37-021120		GW			1355	4	X	X			-09
MW-38-021120		GW			1515	4	X	X			-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: V8260BTEXMNSC = BTEX, MTBE, Naphthalene, and 1,2-DCA.

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist
COC Seal Present/Intact: __NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking #

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	1830	02/11/20 1700			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.4 AS °C Bottles Received: 32	
				1.2+0=1.2	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 2-12 Time: 0830	Hold: Condition: NCF / OK

Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com; tom.wiley@jacobs.com

Project Description: Lewis Drive Groundwater

City/State Collected: BELTON, SC

Please Circle: PT MT CT ET

Phone: 770-604-9182
Fax:

Client Project # KMLDOM20 B.CS.GEN.LDOMR.GW

Lab Project # KINCH2MGA-LEWIS12

Collected by (print): MELISSA WARREN

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	SULFATE 125mlHDPE-NoPres	V8260BTEXMNSC 40mlAmb-HCl	V8260BTEXMNSC-TB 40mlAmb-HCl-Blk									Remarks	Sample # (lab only)
						Pres Chk			X										
TB02-021120	GRAB	GW	NA	02/11/20	NO TIME	1			X										-11
		GW																	
		GW																	
		GW																	
		GW																	
		GW																	
		GW																	
		GW																	
		GW																	
		GW																	
		GW																	

Analysis / Container / Preservative

Chain of Custody Page 2 of 2

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # 118879

Table #

Acctnum: KINCH2MGA
Template: T162658
Prelogin: P754956
PM: 526 - Chris McCord
PB: 2-5-2020 GM

Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: V8260BTEXMNSC = BTEX, MTBE, Naphthalene, and 1,2-DCA.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __UPS __FedEx __Courier _____

Tracking #

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y / N
COC Signed/Accurate:		Y / N
Bottles arrive intact:		Y / N
Correct bottles used:		Y / N
Sufficient volume sent:		Y / N
If Applicable		
VOA Zero Headspace:		Y / N
Preservation Correct/Checked:		Y / N
RAD Screen <0.5 mR/hr:		Y / N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	02/11/20	1830			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: AA3 °C Bottles Received: 1.2±0=1.2	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 2-12 Time: 1830	Hold: / Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

February 20, 2020

Kinder Morgan- Atlanta, GA

Sample Delivery Group:	L1189253
Samples Received:	02/13/2020
Project Number:	KMLDOM20 B.CS.GEN.LD
Description:	Lewis Drive Groundwater
Site:	LEWIS DRIVE
Report To:	Bethany Garvey Ten 10th Street NW Suite 1400 Atlanta, GA 30309

Entire Report Reviewed By:

Chris McCord
Project Manager

MW-23-021220 L1189253-01 GW

Collected by: Melissa Warren | Collected date/time: 02/12/20 16:25 | Received date/time: 02/13/20 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1427750	20	02/18/20 06:02	02/18/20 06:02	JCP	Mt. Juliet, TN

MW-23-D-021220 L1189253-02 GW

Collected by: Melissa Warren | Collected date/time: 02/12/20 16:26 | Received date/time: 02/13/20 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1427750	20	02/18/20 06:23	02/18/20 06:23	JCP	Mt. Juliet, TN

MW-57-021220 L1189253-03 GW

Collected by: Melissa Warren | Collected date/time: 02/12/20 11:40 | Received date/time: 02/13/20 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1428264	10	02/17/20 00:31	02/17/20 00:31	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1427750	1	02/18/20 06:43	02/18/20 06:43	JCP	Mt. Juliet, TN

MW-45-021220 L1189253-04 GW

Collected by: Melissa Warren | Collected date/time: 02/12/20 16:00 | Received date/time: 02/13/20 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1427750	1	02/18/20 07:03	02/18/20 07:03	JCP	Mt. Juliet, TN

MW-17B-021220 L1189253-05 GW

Collected by: Melissa Warren | Collected date/time: 02/12/20 17:27 | Received date/time: 02/13/20 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1427750	100	02/18/20 07:24	02/18/20 07:24	JCP	Mt. Juliet, TN

MW-20-021220 L1189253-06 GW

Collected by: Melissa Warren | Collected date/time: 02/12/20 17:40 | Received date/time: 02/13/20 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1428348	200	02/15/20 11:28	02/15/20 11:28	JCP	Mt. Juliet, TN

MW-20-D-021220 L1189253-07 GW

Collected by: Melissa Warren | Collected date/time: 02/12/20 17:41 | Received date/time: 02/13/20 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1428348	200	02/15/20 11:48	02/15/20 11:48	JCP	Mt. Juliet, TN

MW-26-021220 L1189253-08 GW

Collected by: Melissa Warren | Collected date/time: 02/12/20 18:00 | Received date/time: 02/13/20 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1428348	1	02/15/20 06:04	02/15/20 06:04	JCP	Mt. Juliet, TN

FB02-021220 L1189253-09 GW

Collected by: Melissa Warren
Collected date/time: 02/12/20 18:05
Received date/time: 02/13/20 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1428061	1	02/14/20 13:27	02/14/20 13:27	BMB	Mt. Juliet, TN

TB03-021220 L1189253-10 GW

Collected by: Melissa Warren
Collected date/time: 02/12/20 00:00
Received date/time: 02/13/20 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1428061	1	02/14/20 12:47	02/14/20 12:47	BMB	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, 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.

Chris McCord
Project Manager

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	408		20.0	20	02/18/2020 06:02	WG1427750
Toluene	ND		20.0	20	02/18/2020 06:02	WG1427750
Ethylbenzene	ND		20.0	20	02/18/2020 06:02	WG1427750
Total Xylenes	150		60.0	20	02/18/2020 06:02	WG1427750
Methyl tert-butyl ether	36.3		20.0	20	02/18/2020 06:02	WG1427750
Naphthalene	ND		100	20	02/18/2020 06:02	WG1427750
1,2-Dichloroethane	ND		20.0	20	02/18/2020 06:02	WG1427750
(S) Toluene-d8	*114*		*80.0-120*		*02/18/2020 06:02*	WG1427750
(S) 4-Bromofluorobenzene	*92.4*		*77.0-126*		*02/18/2020 06:02*	WG1427750
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*02/18/2020 06:02*	WG1427750

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	380		20.0	20	02/18/2020 06:23	WG1427750
Toluene	ND		20.0	20	02/18/2020 06:23	WG1427750
Ethylbenzene	ND		20.0	20	02/18/2020 06:23	WG1427750
Total Xylenes	139		60.0	20	02/18/2020 06:23	WG1427750
Methyl tert-butyl ether	33.7		20.0	20	02/18/2020 06:23	WG1427750
Naphthalene	ND		100	20	02/18/2020 06:23	WG1427750
1,2-Dichloroethane	ND		20.0	20	02/18/2020 06:23	WG1427750
(S) Toluene-d8	*114*		*80.0-120*		*02/18/2020 06:23*	WG1427750
(S) 4-Bromofluorobenzene	*88.4*		*77.0-126*		*02/18/2020 06:23*	WG1427750
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*02/18/2020 06:23*	WG1427750

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	168000		50000	10	02/17/2020 00:31	WG1428264

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	42.8		1.00	1	02/18/2020 06:43	WG1427750
Toluene	ND		1.00	1	02/18/2020 06:43	WG1427750
Ethylbenzene	ND		1.00	1	02/18/2020 06:43	WG1427750
Total Xylenes	ND		3.00	1	02/18/2020 06:43	WG1427750
Methyl tert-butyl ether	64.3		1.00	1	02/18/2020 06:43	WG1427750
Naphthalene	ND		5.00	1	02/18/2020 06:43	WG1427750
1,2-Dichloroethane	ND		1.00	1	02/18/2020 06:43	WG1427750
(S) Toluene-d8	*113*		*80.0-120*		*02/18/2020 06:43*	WG1427750
(S) 4-Bromofluorobenzene	*89.4*		*77.0-126*		*02/18/2020 06:43*	WG1427750
(S) 1,2-Dichloroethane-d4	*98.2*		*70.0-130*		*02/18/2020 06:43*	WG1427750

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/18/2020 07:03	WG1427750
Toluene	ND		1.00	1	02/18/2020 07:03	WG1427750
Ethylbenzene	ND		1.00	1	02/18/2020 07:03	WG1427750
Total Xylenes	ND		3.00	1	02/18/2020 07:03	WG1427750
Methyl tert-butyl ether	19.5		1.00	1	02/18/2020 07:03	WG1427750
Naphthalene	ND		5.00	1	02/18/2020 07:03	WG1427750
1,2-Dichloroethane	ND		1.00	1	02/18/2020 07:03	WG1427750
(S) Toluene-d8	*112*		*80.0-120*		*02/18/2020 07:03*	WG1427750
(S) 4-Bromofluorobenzene	*90.1*		*77.0-126*		*02/18/2020 07:03*	WG1427750
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*02/18/2020 07:03*	WG1427750

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	5800		100	100	02/18/2020 07:24	WG1427750
Toluene	11400		100	100	02/18/2020 07:24	WG1427750
Ethylbenzene	1100		100	100	02/18/2020 07:24	WG1427750
Total Xylenes	7360		300	100	02/18/2020 07:24	WG1427750
Methyl tert-butyl ether	372		100	100	02/18/2020 07:24	WG1427750
Naphthalene	ND		500	100	02/18/2020 07:24	WG1427750
1,2-Dichloroethane	ND		100	100	02/18/2020 07:24	WG1427750
(S) Toluene-d8	*113*		*80.0-120*		*02/18/2020 07:24*	WG1427750
(S) 4-Bromofluorobenzene	*90.5*		*77.0-126*		*02/18/2020 07:24*	WG1427750
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*02/18/2020 07:24*	WG1427750

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	7420		200	200	02/15/2020 11:28	WG1428348
Toluene	24200		200	200	02/15/2020 11:28	WG1428348
Ethylbenzene	1410		200	200	02/15/2020 11:28	WG1428348
Total Xylenes	8710		600	200	02/15/2020 11:28	WG1428348
Methyl tert-butyl ether	ND		200	200	02/15/2020 11:28	WG1428348
Naphthalene	ND		1000	200	02/15/2020 11:28	WG1428348
1,2-Dichloroethane	ND		200	200	02/15/2020 11:28	WG1428348
(S) Toluene-d8	*114*		*80.0-120*		*02/15/2020 11:28*	WG1428348
(S) 4-Bromofluorobenzene	*89.5*		*77.0-126*		*02/15/2020 11:28*	WG1428348
(S) 1,2-Dichloroethane-d4	*98.6*		*70.0-130*		*02/15/2020 11:28*	WG1428348

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	6600		200	200	02/15/2020 11:48	WG1428348
Toluene	20500		200	200	02/15/2020 11:48	WG1428348
Ethylbenzene	1220		200	200	02/15/2020 11:48	WG1428348
Total Xylenes	7620		600	200	02/15/2020 11:48	WG1428348
Methyl tert-butyl ether	ND		200	200	02/15/2020 11:48	WG1428348
Naphthalene	ND		1000	200	02/15/2020 11:48	WG1428348
1,2-Dichloroethane	ND		200	200	02/15/2020 11:48	WG1428348
(S) Toluene-d8	*110*		*80.0-120*		*02/15/2020 11:48*	WG1428348
(S) 4-Bromofluorobenzene	*91.9*		*77.0-126*		*02/15/2020 11:48*	WG1428348
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*02/15/2020 11:48*	WG1428348

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/15/2020 06:04	WG1428348
Toluene	ND		1.00	1	02/15/2020 06:04	WG1428348
Ethylbenzene	ND		1.00	1	02/15/2020 06:04	WG1428348
Total Xylenes	ND		3.00	1	02/15/2020 06:04	WG1428348
Methyl tert-butyl ether	ND		1.00	1	02/15/2020 06:04	WG1428348
Naphthalene	ND		5.00	1	02/15/2020 06:04	WG1428348
1,2-Dichloroethane	ND		1.00	1	02/15/2020 06:04	WG1428348
(S) Toluene-d8	*109*		*80.0-120*		*02/15/2020 06:04*	WG1428348
(S) 4-Bromofluorobenzene	*91.1*		*77.0-126*		*02/15/2020 06:04*	WG1428348
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*02/15/2020 06:04*	WG1428348

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/14/2020 13:27	WG1428061
Toluene	ND		1.00	1	02/14/2020 13:27	WG1428061
Ethylbenzene	ND		1.00	1	02/14/2020 13:27	WG1428061
Total Xylenes	ND		3.00	1	02/14/2020 13:27	WG1428061
Methyl tert-butyl ether	ND		1.00	1	02/14/2020 13:27	WG1428061
Naphthalene	ND		5.00	1	02/14/2020 13:27	WG1428061
1,2-Dichloroethane	ND		1.00	1	02/14/2020 13:27	WG1428061
(S) Toluene-d8	*105*		*80.0-120*		*02/14/2020 13:27*	WG1428061
(S) 4-Bromofluorobenzene	*97.2*		*77.0-126*		*02/14/2020 13:27*	WG1428061
(S) 1,2-Dichloroethane-d4	*96.8*		*70.0-130*		*02/14/2020 13:27*	WG1428061

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/14/2020 12:47	WG1428061
Toluene	ND		1.00	1	02/14/2020 12:47	WG1428061
Ethylbenzene	ND		1.00	1	02/14/2020 12:47	WG1428061
Total Xylenes	ND		3.00	1	02/14/2020 12:47	WG1428061
Methyl tert-butyl ether	ND		1.00	1	02/14/2020 12:47	WG1428061
Naphthalene	ND		5.00	1	02/14/2020 12:47	WG1428061
1,2-Dichloroethane	ND		1.00	1	02/14/2020 12:47	WG1428061
(S) Toluene-d8	*105*		*80.0-120*		*02/14/2020 12:47*	WG1428061
(S) 4-Bromofluorobenzene	*98.1*		*77.0-126*		*02/14/2020 12:47*	WG1428061
(S) 1,2-Dichloroethane-d4	*98.3*		*70.0-130*		*02/14/2020 12:47*	WG1428061

Method Blank (MB)

(MB) R3500217-1 02/15/20 12:55

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Sulfate	U		77.4	5000

L1188791-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1188791-09 02/15/20 15:05 • (DUP) R3500217-3 02/15/20 15:23

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	15200	15100	1	0.441		15

L1189245-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1189245-01 02/15/20 21:03 • (DUP) R3500217-6 02/15/20 21:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	17200	17100	1	0.697		15

Laboratory Control Sample (LCS)

(LCS) R3500217-2 02/15/20 13:13

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Sulfate	40000	39900	99.7	80.0-120	

L1188791-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1188791-10 02/15/20 15:41 • (MS) R3500217-4 02/15/20 15:59 • (MSD) R3500217-5 02/15/20 16:17

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfate	50000	65500	112000	113000	93.6	94.2	1	80.0-120	E	E	0.292	15

L1189250-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1189250-01 02/15/20 22:15 • (MS) R3500217-7 02/15/20 22:33

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	ug/l	ug/l	ug/l	%		%	
Sulfate	50000	252	51100	102	1	80.0-120	

Method Blank (MB)

(MB) R3500881-2 02/18/20 00:17

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*114*			*80.0-120*
(S) 4-Bromofluorobenzene	*88.6*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3500881-1 02/17/20 23:36

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.12	102	70.0-130	
1,2-Dichloroethane	5.00	5.64	113	70.0-130	
Ethylbenzene	5.00	4.93	98.6	70.0-130	
Methyl tert-butyl ether	5.00	5.12	102	70.0-130	
Naphthalene	5.00	3.69	73.8	70.0-130	
Toluene	5.00	5.52	110	70.0-130	
Xylenes, Total	15.0	14.7	98.0	70.0-130	
(S) Toluene-d8			*113*	*80.0-120*	
(S) 4-Bromofluorobenzene			*90.3*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*108*	*70.0-130*	

Method Blank (MB)

(MB) R3500887-2 02/14/20 12:01

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*103*			*80.0-120*
(S) 4-Bromofluorobenzene	*97.9*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3500887-1 02/14/20 11:21

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.07	101	70.0-130	
1,2-Dichloroethane	5.00	5.25	105	70.0-130	
Ethylbenzene	5.00	5.12	102	70.0-130	
Methyl tert-butyl ether	5.00	5.41	108	70.0-130	
Naphthalene	5.00	4.04	80.8	70.0-130	
Toluene	5.00	5.16	103	70.0-130	
Xylenes, Total	15.0	15.7	105	70.0-130	
(S) Toluene-d8			*101*	*80.0-120*	
(S) 4-Bromofluorobenzene			*96.3*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*103*	*70.0-130*	

Method Blank (MB)

(MB) R3500573-3 02/15/20 05:03

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*109*			*80.0-120*
(S) 4-Bromofluorobenzene	*90.9*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*

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

(LCS) R3500573-1 02/15/20 04:02 • (LCSD) R3500573-2 02/15/20 04:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	5.30	5.15	106	103	70.0-130			2.87	20
1,2-Dichloroethane	5.00	5.38	5.13	108	103	70.0-130			4.76	20
Ethylbenzene	5.00	4.98	4.76	99.6	95.2	70.0-130			4.52	20
Methyl tert-butyl ether	5.00	4.61	4.42	92.2	88.4	70.0-130			4.21	20
Naphthalene	5.00	3.80	3.71	76.0	74.2	70.0-130			2.40	20
Toluene	5.00	5.65	5.45	113	109	70.0-130			3.60	20
Xylenes, Total	15.0	14.6	13.9	97.3	92.7	70.0-130			4.91	20
(S) Toluene-d8				*112*	*110*	*80.0-120*				
(S) 4-Bromofluorobenzene				*87.1*	*87.6*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*99.2*	*99.8*	*70.0-130*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(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.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).

Pace National 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.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

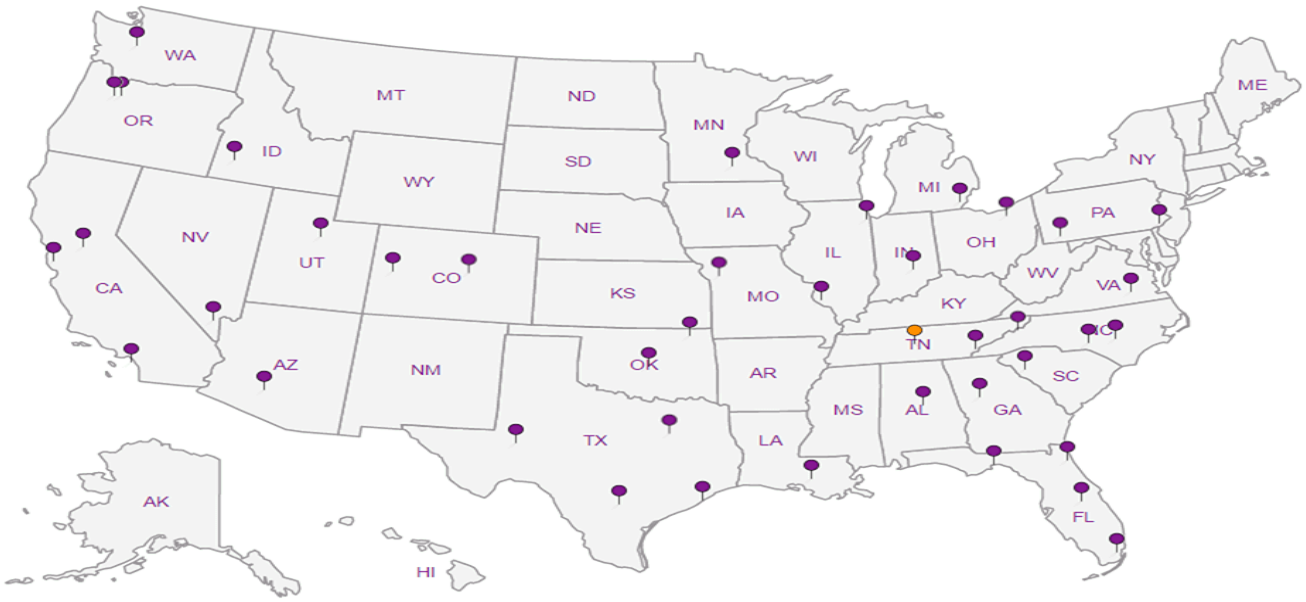
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National 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. Pace National performs all testing at our central laboratory.



Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com; tom.wiley@jacobs.com

Project Description: Lewis Drive Groundwater

City/State Collected: BELTON, SC

Please Circle: PT MT CT ET

Phone: 770-604-9182
Fax:

Client Project # KMLDOM20
B.CS.GEN.LDOM20.60

Lab Project # KINCH2MGA-LEWIS12

Collected by (print): MELISSA WARREN

Site/Facility ID # LEWIS DRIVE

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	SULFATE 125mlHDPE-NoPres	V8260BTEXMNSC 40mlAmb-HCl	V8260BTEXMNSC-TB 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
MW-23-021220	GRAB	GW	NA	02/12/20	1625	3		X			-01
MW-23-D-021220		GW			1626	3		X			-02
MW-57-021220		GW			1140	4	X	X			-03
MW-45-021220		GW			1600	3		X			-04
MW-17B-021220		GW			1727	3		X			-05
MW-20-021220		GW			1740	3		X			-06
MW-20-D-021220		GW			1741	3		X			-07
MW-26-021220		GW			1800	3		X			-08
FB02-021220		GW			1805	3		X			-09
TB03-021220		GW			----	1			X		-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: V8260BTEXMNSC = BTEX, MTBE, Naphthalene, and 1,2-DCA.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 1382 4807 4546

Relinquished by : (Signature) — Date: 02/12/20 — Time: 1830

Received by: (Signature)

Relinquished by : (Signature) — Date: — Time:

Received by: (Signature)

Relinquished by : (Signature) — Date: — Time:

Received for lab by: (Signature) — Date: 2/13/20 — Time: 09:40

Trip Blank Received: Yes / (No) HCl / MeoH TBR

Temp: 4.3 °C — Bottles Received: 28

1.1+0=1.1

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1189253

Table # J126

Acctnum: KINCH2MGA

Template: T162658

Prelogin: P754956

PM: 526 - Chris McCord

PB: 2-5-2020 GM

Shipped Via: FedEX Ground

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

February 20, 2020

Kinder Morgan- Atlanta, GA

Sample Delivery Group:	L1189681
Samples Received:	02/14/2020
Project Number:	KMLDOM20 B.CS.GEN.LD
Description:	Lewis Drive Groundwater
Site:	LEWIS DRIVE
Report To:	Bethany Garvey Ten 10th Street NW Suite 1400 Atlanta, GA 30309

Entire Report Reviewed By:

Chris McCord
Project Manager

TABLE OF CONTENTS

MW-46-021320 L1189681-01 GW

Collected by: Melissa Warren | Collected date/time: 02/13/20 10:10 | Received date/time: 02/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1428498	1	02/17/20 19:40	02/17/20 19:40	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1428815	5	02/16/20 15:35	02/16/20 15:35	JCP	Mt. Juliet, TN

MW-53-021320 L1189681-02 GW

Collected by: Melissa Warren | Collected date/time: 02/13/20 14:10 | Received date/time: 02/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1428815	1	02/16/20 15:55	02/16/20 15:55	JCP	Mt. Juliet, TN

MW-15B-021320 L1189681-03 GW

Collected by: Melissa Warren | Collected date/time: 02/13/20 16:55 | Received date/time: 02/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1428815	10	02/16/20 16:14	02/16/20 16:14	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1430728	100	02/20/20 00:34	02/20/20 00:34	JCP	Mt. Juliet, TN

MW-07-021320 L1189681-04 GW

Collected by: Melissa Warren | Collected date/time: 02/13/20 14:50 | Received date/time: 02/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1428815	100	02/16/20 16:34	02/16/20 16:34	JCP	Mt. Juliet, TN

MW-54-021320 L1189681-05 GW

Collected by: Melissa Warren | Collected date/time: 02/13/20 14:20 | Received date/time: 02/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1428815	1	02/16/20 16:53	02/16/20 16:53	JCP	Mt. Juliet, TN

MW-56-021320 L1189681-06 GW

Collected by: Melissa Warren | Collected date/time: 02/13/20 11:55 | Received date/time: 02/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1428498	5	02/17/20 22:50	02/17/20 22:50	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1428815	1	02/16/20 17:13	02/16/20 17:13	JCP	Mt. Juliet, TN

FB03-021320 L1189681-07 GW

Collected by: Melissa Warren | Collected date/time: 02/13/20 08:00 | Received date/time: 02/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1428824	1	02/16/20 15:12	02/16/20 15:12	KMC	Mt. Juliet, TN

TB01-021320 L1189681-08 GW

Collected by: Melissa Warren | Collected date/time: 02/13/20 00:00 | Received date/time: 02/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1428824	1	02/16/20 13:58	02/16/20 13:58	KMC	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, 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.

Chris McCord
Project Manager

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	ND		5000	1	02/17/2020 19:40	WG1428498

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		5.00	5	02/16/2020 15:35	WG1428815
Toluene	ND		5.00	5	02/16/2020 15:35	WG1428815
Ethylbenzene	ND		5.00	5	02/16/2020 15:35	WG1428815
Total Xylenes	ND		15.0	5	02/16/2020 15:35	WG1428815
Methyl tert-butyl ether	122		5.00	5	02/16/2020 15:35	WG1428815
Naphthalene	ND		25.0	5	02/16/2020 15:35	WG1428815
1,2-Dichloroethane	ND		5.00	5	02/16/2020 15:35	WG1428815
(S) Toluene-d8	*116*		*80.0-120*		*02/16/2020 15:35*	WG1428815
(S) 4-Bromofluorobenzene	*89.3*		*77.0-126*		*02/16/2020 15:35*	WG1428815
(S) 1,2-Dichloroethane-d4	*100*		*70.0-130*		*02/16/2020 15:35*	WG1428815

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/16/2020 15:55	WG1428815
Toluene	ND		1.00	1	02/16/2020 15:55	WG1428815
Ethylbenzene	ND		1.00	1	02/16/2020 15:55	WG1428815
Total Xylenes	ND		3.00	1	02/16/2020 15:55	WG1428815
Methyl tert-butyl ether	ND		1.00	1	02/16/2020 15:55	WG1428815
Naphthalene	ND		5.00	1	02/16/2020 15:55	WG1428815
1,2-Dichloroethane	ND		1.00	1	02/16/2020 15:55	WG1428815
(S) Toluene-d8	*115*		*80.0-120*		*02/16/2020 15:55*	WG1428815
(S) 4-Bromofluorobenzene	*89.0*		*77.0-126*		*02/16/2020 15:55*	WG1428815
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*02/16/2020 15:55*	WG1428815

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	4680		100	100	02/20/2020 00:34	WG1430728
Toluene	1830		10.0	10	02/16/2020 16:14	WG1428815
Ethylbenzene	212		10.0	10	02/16/2020 16:14	WG1428815
Total Xylenes	2080		30.0	10	02/16/2020 16:14	WG1428815
Methyl tert-butyl ether	208		10.0	10	02/16/2020 16:14	WG1428815
Naphthalene	57.8		50.0	10	02/16/2020 16:14	WG1428815
1,2-Dichloroethane	ND		10.0	10	02/16/2020 16:14	WG1428815
(S) Toluene-d8	*107*		*80.0-120*		*02/16/2020 16:14*	WG1428815
(S) Toluene-d8	*103*		*80.0-120*		*02/20/2020 00:34*	WG1430728
(S) 4-Bromofluorobenzene	*87.4*		*77.0-126*		*02/16/2020 16:14*	WG1428815
(S) 4-Bromofluorobenzene	*109*		*77.0-126*		*02/20/2020 00:34*	WG1430728
(S) 1,2-Dichloroethane-d4	*89.3*		*70.0-130*		*02/16/2020 16:14*	WG1428815
(S) 1,2-Dichloroethane-d4	*94.1*		*70.0-130*		*02/20/2020 00:34*	WG1430728

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	487		100	100	02/16/2020 16:34	WG1428815
Toluene	3100		100	100	02/16/2020 16:34	WG1428815
Ethylbenzene	463		100	100	02/16/2020 16:34	WG1428815
Total Xylenes	5530		300	100	02/16/2020 16:34	WG1428815
Methyl tert-butyl ether	ND		100	100	02/16/2020 16:34	WG1428815
Naphthalene	ND		500	100	02/16/2020 16:34	WG1428815
1,2-Dichloroethane	ND		100	100	02/16/2020 16:34	WG1428815
(S) Toluene-d8	*113*		*80.0-120*		*02/16/2020 16:34*	WG1428815
(S) 4-Bromofluorobenzene	*87.5*		*77.0-126*		*02/16/2020 16:34*	WG1428815
(S) 1,2-Dichloroethane-d4	*97.3*		*70.0-130*		*02/16/2020 16:34*	WG1428815

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/16/2020 16:53	WG1428815
Toluene	ND		1.00	1	02/16/2020 16:53	WG1428815
Ethylbenzene	ND		1.00	1	02/16/2020 16:53	WG1428815
Total Xylenes	ND		3.00	1	02/16/2020 16:53	WG1428815
Methyl tert-butyl ether	ND		1.00	1	02/16/2020 16:53	WG1428815
Naphthalene	ND		5.00	1	02/16/2020 16:53	WG1428815
1,2-Dichloroethane	ND		1.00	1	02/16/2020 16:53	WG1428815
(S) Toluene-d8	*114*		*80.0-120*		*02/16/2020 16:53*	WG1428815
(S) 4-Bromofluorobenzene	*93.4*		*77.0-126*		*02/16/2020 16:53*	WG1428815
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*02/16/2020 16:53*	WG1428815

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	91100		25000	5	02/17/2020 22:50	WG1428498

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	135		1.00	1	02/16/2020 17:13	WG1428815
Toluene	1.61		1.00	1	02/16/2020 17:13	WG1428815
Ethylbenzene	ND		1.00	1	02/16/2020 17:13	WG1428815
Total Xylenes	51.5		3.00	1	02/16/2020 17:13	WG1428815
Methyl tert-butyl ether	192		1.00	1	02/16/2020 17:13	WG1428815
Naphthalene	ND		5.00	1	02/16/2020 17:13	WG1428815
1,2-Dichloroethane	ND		1.00	1	02/16/2020 17:13	WG1428815
(S) Toluene-d8	*108*		*80.0-120*		*02/16/2020 17:13*	WG1428815
(S) 4-Bromofluorobenzene	*91.8*		*77.0-126*		*02/16/2020 17:13*	WG1428815
(S) 1,2-Dichloroethane-d4	*97.9*		*70.0-130*		*02/16/2020 17:13*	WG1428815

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/16/2020 15:12	WG1428824
Toluene	ND		1.00	1	02/16/2020 15:12	WG1428824
Ethylbenzene	ND		1.00	1	02/16/2020 15:12	WG1428824
Total Xylenes	ND		3.00	1	02/16/2020 15:12	WG1428824
Methyl tert-butyl ether	ND		1.00	1	02/16/2020 15:12	WG1428824
Naphthalene	ND		5.00	1	02/16/2020 15:12	WG1428824
1,2-Dichloroethane	ND		1.00	1	02/16/2020 15:12	WG1428824
(S) Toluene-d8	*114*		*80.0-120*		*02/16/2020 15:12*	WG1428824
(S) 4-Bromofluorobenzene	*105*		*77.0-126*		*02/16/2020 15:12*	WG1428824
(S) 1,2-Dichloroethane-d4	*111*		*70.0-130*		*02/16/2020 15:12*	WG1428824

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/16/2020 13:58	WG1428824
Toluene	ND		1.00	1	02/16/2020 13:58	WG1428824
Ethylbenzene	ND		1.00	1	02/16/2020 13:58	WG1428824
Total Xylenes	ND		3.00	1	02/16/2020 13:58	WG1428824
Methyl tert-butyl ether	ND		1.00	1	02/16/2020 13:58	WG1428824
Naphthalene	ND		5.00	1	02/16/2020 13:58	WG1428824
1,2-Dichloroethane	ND		1.00	1	02/16/2020 13:58	WG1428824
(S) Toluene-d8	*111*		*80.0-120*		*02/16/2020 13:58*	WG1428824
(S) 4-Bromofluorobenzene	*104*		*77.0-126*		*02/16/2020 13:58*	WG1428824
(S) 1,2-Dichloroethane-d4	*112*		*70.0-130*		*02/16/2020 13:58*	WG1428824

Method Blank (MB)

(MB) R3500601-1 02/17/20 09:28

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Sulfate	U		77.4	5000

L1189652-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1189652-01 02/17/20 14:17 • (DUP) R3500601-3 02/17/20 14:32

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	13800	13600	1	1.05		15

L1189656-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1189656-04 02/17/20 18:39 • (DUP) R3500601-7 02/17/20 19:25

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	46300	46200	1	0.208		15

Laboratory Control Sample (LCS)

(LCS) R3500601-2 02/17/20 09:43

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Sulfate	40000	39800	99.6	80.0-120	

L1189652-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1189652-02 02/17/20 14:47 • (MS) R3500601-4 02/17/20 15:03 • (MSD) R3500601-5 02/17/20 15:18

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfate	50000	38200	86200	85800	95.9	95.2	1	80.0-120			0.391	15

L1189656-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1189656-01 02/17/20 17:37 • (MS) R3500601-6 02/17/20 17:52

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	ug/l	ug/l	ug/l	%		%	
Sulfate	50000	28900	77900	98.1	1	80.0-120	

Method Blank (MB)

(MB) R3501234-4 02/16/20 08:36

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*112*			*80.0-120*
(S) 4-Bromofluorobenzene	*88.8*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3501234-1 02/16/20 07:19

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.04	101	70.0-130	
1,2-Dichloroethane	5.00	4.60	92.0	70.0-130	
Ethylbenzene	5.00	5.43	109	70.0-130	
Methyl tert-butyl ether	5.00	4.47	89.4	70.0-130	
Naphthalene	5.00	4.61	92.2	70.0-130	
Toluene	5.00	5.54	111	70.0-130	
Xylenes, Total	15.0	15.7	105	70.0-130	
(S) Toluene-d8			*108*	*80.0-120*	
(S) 4-Bromofluorobenzene			*86.7*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*101*	*70.0-130*	

Method Blank (MB)

(MB) R3501452-3 02/16/20 07:02

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*112*			*80.0-120*
(S) 4-Bromofluorobenzene	*102*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*

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

(LCS) R3501452-1 02/16/20 05:48 • (LCSD) R3501452-2 02/16/20 06:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	4.56	4.63	91.2	92.6	70.0-130			1.52	20
1,2-Dichloroethane	5.00	4.65	4.74	93.0	94.8	70.0-130			1.92	20
Ethylbenzene	5.00	4.41	4.41	88.2	88.2	70.0-130			0.000	20
Methyl tert-butyl ether	5.00	4.03	4.06	80.6	81.2	70.0-130			0.742	20
Naphthalene	5.00	4.32	4.39	86.4	87.8	70.0-130			1.61	20
Toluene	5.00	4.44	4.58	88.8	91.6	70.0-130			3.10	20
Xylenes, Total	15.0	12.7	13.1	84.7	87.3	70.0-130			3.10	20
(S) Toluene-d8				*108*	*110*	*80.0-120*				
(S) 4-Bromofluorobenzene				*102*	*102*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*108*	*109*	*70.0-130*				

Method Blank (MB)

(MB) R3501651-4 02/19/20 18:33

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
(S) Toluene-d8	*104*			*80.0-120*
(S) 4-Bromofluorobenzene	*109*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*96.8*			*70.0-130*

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

(LCS) R3501651-1 02/19/20 17:17 • (LCSD) R3501651-2 02/19/20 17:36

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	4.77	4.80	95.4	96.0	70.0-130			0.627	20
(S) Toluene-d8				*102*	*102*	*80.0-120*				
(S) 4-Bromofluorobenzene				*107*	*107*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*97.4*	*96.8*	*70.0-130*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(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.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

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

Pace National 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.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

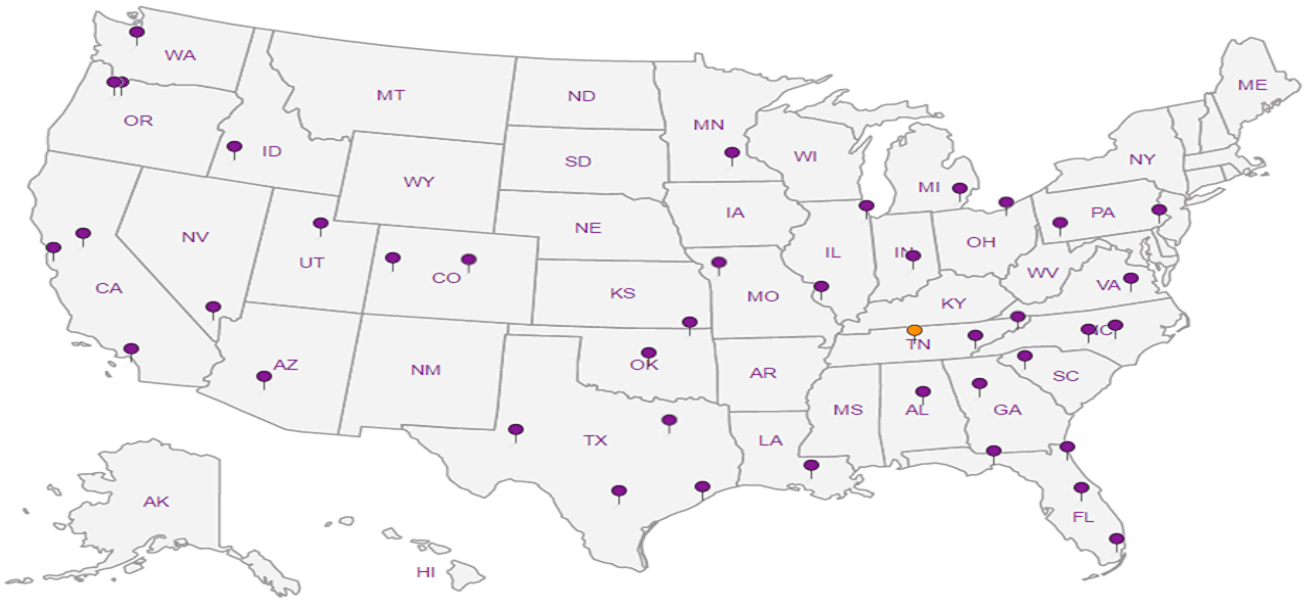
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National 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. Pace National performs all testing at our central laboratory.



Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com; tom.wiley@jacobs.com

Project Description: Lewis Drive Groundwater

City/State Collected: Belton, SC

Please Circle: PT MT CT ET

Phone: 770-604-9182
Fax:

Client Project # KMLDOM20 B.CS.GEN.LDOMR.GW

Lab Project # KINCH2MGA-LEWIS12

Collected by (print): Melissa Warren

Site/Facility ID # Lewis Drive

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y X

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	SULFATE 125mlHDPE-NoPres	V8260BTEXMNSC 40mlAmb-HCl	V8260BTEXMNSC-TB 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
MW-46-021320	GRAB	GW	NA	02/13/20	1010	4	X	X			-01
MW-53-021320		GW			1410	3		X			02
MW-15B-021320		GW			1655	3		X			03
MW-07-021320		GW			1450	3		X			04
MW-54-021320		GW			1420	3		X			05
MW-56-021320		GW			1155	4	X	X			06
FB03-021320		GW			0800	3		X			07
TB01-021320		GW			—	1			X		08
		GW									
		GW									

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: V8260BTEXMNSC = BTEX, MTBE, Naphthalene, and 1,2-DCA.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1189681

G072

Acctnum: KINCH2MGA
Template: T162658
Prelogin: P754956
PM: 526 - Chris McCord
PB: 2-5-2020 GM
Shipped Via: FedEx Ground

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	If preservation required by Login: Date/Time
Melissa Warren	02/13/20	1830			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.2 °C .3+.3=.6 Bottles Received: 23	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Carol Kemp	Date: 2/14/20 Time: 8:45	Hold: Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

February 26, 2020

Kinder Morgan- Atlanta, GA

Sample Delivery Group:	L1190934
Samples Received:	02/19/2020
Project Number:	KMLDOM20
Description:	Lewis Drive Groundwater

Report To: Bethany Garvey
Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Entire Report Reviewed By:

Chris McCord
Project Manager

TABLE OF CONTENTS

MW-36-021820 L1190934-01 GW

Collected by: T. Hall | Collected date/time: 02/18/20 16:20 | Received date/time: 02/19/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1431619	1	02/21/20 03:05	02/21/20 03:05	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1433135	10	02/25/20 01:54	02/25/20 01:54	JHH	Mt. Juliet, TN

MW-55-021820 L1190934-02 GW

Collected by: T. Hall | Collected date/time: 02/18/20 16:35 | Received date/time: 02/19/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1431619	1	02/21/20 03:25	02/21/20 03:25	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1433135	1	02/25/20 02:14	02/25/20 02:14	JHH	Mt. Juliet, TN

MW-50B-021820 L1190934-03 GW

Collected by: T. Hall | Collected date/time: 02/18/20 16:50 | Received date/time: 02/19/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1431619	1	02/21/20 03:46	02/21/20 03:46	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1433135	1	02/25/20 02:35	02/25/20 02:35	JHH	Mt. Juliet, TN

MW-11-021820 L1190934-04 GW

Collected by: T. Hall | Collected date/time: 02/18/20 17:05 | Received date/time: 02/19/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1431619	500	02/21/20 04:06	02/21/20 04:06	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1433135	500	02/25/20 02:55	02/25/20 02:55	JHH	Mt. Juliet, TN

MW-13B-021820 L1190934-05 GW

Collected by: T. Hall | Collected date/time: 02/18/20 17:35 | Received date/time: 02/19/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1431619	5	02/21/20 04:26	02/21/20 04:26	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1433135	50	02/25/20 03:15	02/25/20 03:15	JHH	Mt. Juliet, TN

FB01-021820 L1190934-06 GW

Collected by: T. Hall | Collected date/time: 02/18/20 17:50 | Received date/time: 02/19/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1431619	1	02/21/20 02:24	02/21/20 02:24	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1433135	1	02/25/20 03:35	02/25/20 03:35	JHH	Mt. Juliet, TN

TB01-021820 L1190934-07 GW

Collected by: T. Hall | Collected date/time: 02/18/20 00:00 | Received date/time: 02/19/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1431619	1	02/21/20 02:45	02/21/20 02:45	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1433135	1	02/24/20 21:04	02/24/20 21:04	JHH	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, 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.

Chris McCord
Project Manager

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	301		10.0	10	02/25/2020 01:54	WG1433135
Toluene	200		10.0	10	02/25/2020 01:54	WG1433135
Ethylbenzene	ND		1.00	1	02/21/2020 03:05	WG1431619
Total Xylenes	240		3.00	1	02/21/2020 03:05	WG1431619
Methyl tert-butyl ether	ND		1.00	1	02/21/2020 03:05	WG1431619
Naphthalene	ND		50.0	10	02/25/2020 01:54	WG1433135
1,2-Dichloroethane	ND		1.00	1	02/21/2020 03:05	WG1431619
(S) Toluene-d8	*116*		*80.0-120*		*02/21/2020 03:05*	WG1431619
(S) Toluene-d8	*112*		*80.0-120*		*02/25/2020 01:54*	WG1433135
(S) 4-Bromofluorobenzene	*88.8*		*77.0-126*		*02/21/2020 03:05*	WG1431619
(S) 4-Bromofluorobenzene	*99.9*		*77.0-126*		*02/25/2020 01:54*	WG1433135
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*02/21/2020 03:05*	WG1431619
(S) 1,2-Dichloroethane-d4	*97.4*		*70.0-130*		*02/25/2020 01:54*	WG1433135

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/21/2020 03:25	WG1431619
Toluene	ND		1.00	1	02/21/2020 03:25	WG1431619
Ethylbenzene	ND		1.00	1	02/21/2020 03:25	WG1431619
Total Xylenes	ND		3.00	1	02/21/2020 03:25	WG1431619
Methyl tert-butyl ether	ND		1.00	1	02/21/2020 03:25	WG1431619
Naphthalene	ND		5.00	1	02/25/2020 02:14	WG1433135
1,2-Dichloroethane	ND		1.00	1	02/21/2020 03:25	WG1431619
(S) Toluene-d8	*117*		*80.0-120*		*02/21/2020 03:25*	WG1431619
(S) Toluene-d8	*109*		*80.0-120*		*02/25/2020 02:14*	WG1433135
(S) 4-Bromofluorobenzene	*89.3*		*77.0-126*		*02/21/2020 03:25*	WG1431619
(S) 4-Bromofluorobenzene	*99.2*		*77.0-126*		*02/25/2020 02:14*	WG1433135
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*02/21/2020 03:25*	WG1431619
(S) 1,2-Dichloroethane-d4	*99.9*		*70.0-130*		*02/25/2020 02:14*	WG1433135

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/21/2020 03:46	WG1431619
Toluene	ND		1.00	1	02/21/2020 03:46	WG1431619
Ethylbenzene	ND		1.00	1	02/21/2020 03:46	WG1431619
Total Xylenes	ND		3.00	1	02/21/2020 03:46	WG1431619
Methyl tert-butyl ether	42.1		1.00	1	02/21/2020 03:46	WG1431619
Naphthalene	ND		5.00	1	02/25/2020 02:35	WG1433135
1,2-Dichloroethane	ND		1.00	1	02/21/2020 03:46	WG1431619
(S) Toluene-d8	*119*		*80.0-120*		*02/21/2020 03:46*	WG1431619
(S) Toluene-d8	*111*		*80.0-120*		*02/25/2020 02:35*	WG1433135
(S) 4-Bromofluorobenzene	*88.8*		*77.0-126*		*02/21/2020 03:46*	WG1431619
(S) 4-Bromofluorobenzene	*99.9*		*77.0-126*		*02/25/2020 02:35*	WG1433135
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*02/21/2020 03:46*	WG1431619
(S) 1,2-Dichloroethane-d4	*97.7*		*70.0-130*		*02/25/2020 02:35*	WG1433135

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	4790		500	500	02/21/2020 04:06	WG1431619
Toluene	29200		500	500	02/21/2020 04:06	WG1431619
Ethylbenzene	2170		500	500	02/21/2020 04:06	WG1431619
Total Xylenes	12600		1500	500	02/21/2020 04:06	WG1431619
Methyl tert-butyl ether	ND		500	500	02/21/2020 04:06	WG1431619
Naphthalene	ND		2500	500	02/25/2020 02:55	WG1433135
1,2-Dichloroethane	ND		500	500	02/21/2020 04:06	WG1431619
(S) Toluene-d8	*114*		*80.0-120*		*02/21/2020 04:06*	WG1431619
(S) Toluene-d8	*110*		*80.0-120*		*02/25/2020 02:55*	WG1433135
(S) 4-Bromofluorobenzene	*92.8*		*77.0-126*		*02/21/2020 04:06*	WG1431619
(S) 4-Bromofluorobenzene	*106*		*77.0-126*		*02/25/2020 02:55*	WG1433135
(S) 1,2-Dichloroethane-d4	*106*		*70.0-130*		*02/21/2020 04:06*	WG1431619
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*02/25/2020 02:55*	WG1433135

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	1320		50.0	50	02/25/2020 03:15	WG1433135
Toluene	52.3		5.00	5	02/21/2020 04:26	WG1431619
Ethylbenzene	ND		5.00	5	02/21/2020 04:26	WG1431619
Total Xylenes	21.1		15.0	5	02/21/2020 04:26	WG1431619
Methyl tert-butyl ether	115		5.00	5	02/21/2020 04:26	WG1431619
Naphthalene	ND		250	50	02/25/2020 03:15	WG1433135
1,2-Dichloroethane	ND		5.00	5	02/21/2020 04:26	WG1431619
(S) Toluene-d8	*117*		*80.0-120*		*02/21/2020 04:26*	WG1431619
(S) Toluene-d8	*111*		*80.0-120*		*02/25/2020 03:15*	WG1433135
(S) 4-Bromofluorobenzene	*89.7*		*77.0-126*		*02/21/2020 04:26*	WG1431619
(S) 4-Bromofluorobenzene	*98.4*		*77.0-126*		*02/25/2020 03:15*	WG1433135
(S) 1,2-Dichloroethane-d4	*99.6*		*70.0-130*		*02/21/2020 04:26*	WG1431619
(S) 1,2-Dichloroethane-d4	*98.2*		*70.0-130*		*02/25/2020 03:15*	WG1433135

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/21/2020 02:24	WG1431619
Toluene	ND		1.00	1	02/21/2020 02:24	WG1431619
Ethylbenzene	ND		1.00	1	02/21/2020 02:24	WG1431619
Total Xylenes	ND		3.00	1	02/21/2020 02:24	WG1431619
Methyl tert-butyl ether	ND		1.00	1	02/21/2020 02:24	WG1431619
Naphthalene	ND		5.00	1	02/25/2020 03:35	WG1433135
1,2-Dichloroethane	ND		1.00	1	02/21/2020 02:24	WG1431619
(S) Toluene-d8	*116*		*80.0-120*		*02/21/2020 02:24*	WG1431619
(S) Toluene-d8	*110*		*80.0-120*		*02/25/2020 03:35*	WG1433135
(S) 4-Bromofluorobenzene	*86.8*		*77.0-126*		*02/21/2020 02:24*	WG1431619
(S) 4-Bromofluorobenzene	*105*		*77.0-126*		*02/25/2020 03:35*	WG1433135
(S) 1,2-Dichloroethane-d4	*106*		*70.0-130*		*02/21/2020 02:24*	WG1431619
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*02/25/2020 03:35*	WG1433135

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/21/2020 02:45	WG1431619
Toluene	ND		1.00	1	02/21/2020 02:45	WG1431619
Ethylbenzene	ND		1.00	1	02/21/2020 02:45	WG1431619
Total Xylenes	ND		3.00	1	02/21/2020 02:45	WG1431619
Methyl tert-butyl ether	ND		1.00	1	02/21/2020 02:45	WG1431619
Naphthalene	ND		5.00	1	02/24/2020 21:04	WG1433135
1,2-Dichloroethane	ND		1.00	1	02/21/2020 02:45	WG1431619
(S) Toluene-d8	*117*		*80.0-120*		*02/21/2020 02:45*	WG1431619
(S) Toluene-d8	*112*		*80.0-120*		*02/24/2020 21:04*	WG1433135
(S) 4-Bromofluorobenzene	*87.0*		*77.0-126*		*02/21/2020 02:45*	WG1431619
(S) 4-Bromofluorobenzene	*106*		*77.0-126*		*02/24/2020 21:04*	WG1433135
(S) 1,2-Dichloroethane-d4	*106*		*70.0-130*		*02/21/2020 02:45*	WG1431619
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*02/24/2020 21:04*	WG1433135

Method Blank (MB)

(MB) R3502540-2 02/21/20 02:04

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*113*			*80.0-120*
(S) 4-Bromofluorobenzene	*90.1*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3502540-1 02/21/20 01:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	4.81	96.2	70.0-130	
1,2-Dichloroethane	5.00	5.26	105	70.0-130	
Ethylbenzene	5.00	4.92	98.4	70.0-130	
Methyl tert-butyl ether	5.00	4.43	88.6	70.0-130	
Toluene	5.00	5.18	104	70.0-130	
Xylenes, Total	15.0	13.9	92.7	70.0-130	
(S) Toluene-d8			*111*	*80.0-120*	
(S) 4-Bromofluorobenzene			*91.9*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*109*	*70.0-130*	

Method Blank (MB)

(MB) R3502660-2 02/24/20 20:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
(S) Toluene-d8	*112*			*80.0-120*
(S) 4-Bromofluorobenzene	*99.7*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*94.1*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3502660-1 02/24/20 19:50

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	4.35	87.0	70.0-130	
Naphthalene	5.00	3.93	78.6	70.0-130	
Toluene	5.00	4.22	84.4	70.0-130	
(S) Toluene-d8			*109*	*80.0-120*	
(S) 4-Bromofluorobenzene			*104*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*98.9*	*70.0-130*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(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.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

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

Pace National 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.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

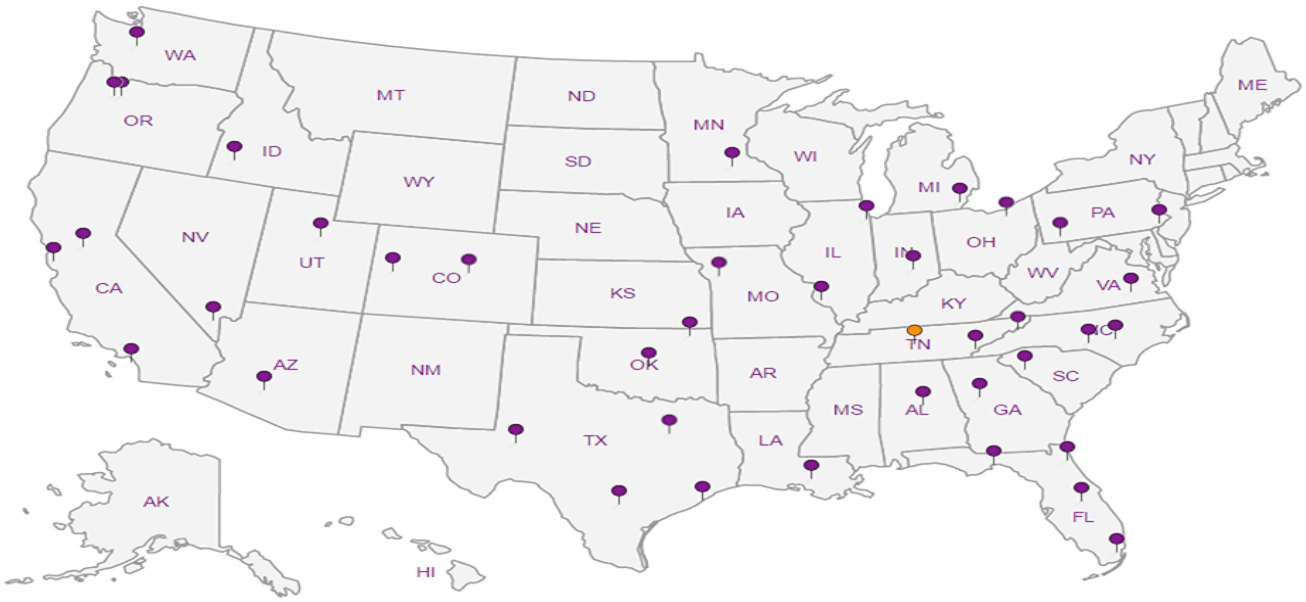
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National 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. Pace National performs all testing at our central laboratory.



Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com; tom.wiley@jacobs.com

Project Description: Lewis Drive Groundwater

City/State Collected: BELTON, SC

Please Circle: PT MT CT ET

Phone: 770-604-9182
Fax:

Client Project # KMLD0M20

Lab Project # KINCH2MGA-LEWIS12

Collected by (print): T. Hale

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	SULFATE 125mlHDPE-NoPres	V8260BTEXMNSC 40mlAmb-HCl	V8260BTEXMNSC-TB 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
MW-36-021820	G	GW	20	2-18-20	1620	3		✓	✓ (TW)		-01
MW-55-021820		GW	20		1635	3		✓	✓		-02
MW-50B-021820			100		1650	3		✓	✓		-03
MW-11-021820			29		1705	3		✓	✓		-04
MW-13B-021820			50		1735	3		✓	✓		-05
FB01-021820	↓	↓	—	↓	1750	3		✓	✓		-06
TB01-021820	LAB	TB	—	2-18-20	LAB	1			✓		-07

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1190934

Table B077

Acctnum: KINCH2MGA

Template: T162658

Prelogin: P754956

PM: 526 - Chris McCord

PB: 25-2020Gw

Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: V8260BTEXMNSC = BTEX, MTBE, Naphthalene, and 1,2-DCA.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # [illegible]

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

	Date:	Time:		
Relinquished by: (Signature)	2-18-20	1900	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by: (Signature)			Received by: (Signature)	Temp: 1.0+.1=1.1 °C Bottles Received: 14
Relinquished by: (Signature)			Received for lab by: (Signature)	Date: 2/19/20 Time: 8:30

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

March 19, 2020

Kinder Morgan- Atlanta, GA

Sample Delivery Group:	L1197690
Samples Received:	03/11/2020
Project Number:	KMLDOM20.B.CS.GEN.LD
Description:	Lewis Drive Groundwater
Site:	LEWIS DRIVE
Report To:	Bethany Garvey Ten 10th Street NW Suite 1400 Atlanta, GA 30309

Entire Report Reviewed By:

Chris McCord
Project Manager

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 Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

MW-12-031020 L1197690-01 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 09:35 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1442024	1	03/13/20 19:29	03/13/20 19:29	LEB	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1442024	1	03/13/20 19:29	03/13/20 19:29	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1441975	1	03/12/20 03:34	03/12/20 03:34	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1443765	1	03/14/20 12:12	03/14/20 12:12	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 12:20	03/12/20 12:20	JHH	Mt. Juliet, TN

MW-28-031020 L1197690-02 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 10:00 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1442024	1	03/13/20 19:37	03/13/20 19:37	LEB	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1442024	1	03/13/20 19:37	03/13/20 19:37	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1441975	1	03/12/20 03:46	03/12/20 03:46	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1445731	1	03/17/20 17:14	03/17/20 17:14	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 12:41	03/12/20 12:41	JHH	Mt. Juliet, TN

MW-49-031020 L1197690-03 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 10:20 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 13:01	03/12/20 13:01	JHH	Mt. Juliet, TN

MW-35-031020 L1197690-04 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 10:35 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1442024	1	03/13/20 19:43	03/13/20 19:43	LEB	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1442024	1	03/13/20 19:43	03/13/20 19:43	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1441975	1	03/12/20 03:59	03/12/20 03:59	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1443765	1	03/14/20 12:14	03/14/20 12:14	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 13:21	03/12/20 13:21	JHH	Mt. Juliet, TN

MW-25-031020 L1197690-05 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 10:50 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1442024	1	03/13/20 20:00	03/13/20 20:00	LEB	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1442024	1	03/13/20 20:00	03/13/20 20:00	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1441975	1	03/12/20 04:37	03/12/20 04:37	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1443765	1	03/14/20 12:16	03/14/20 12:16	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 13:42	03/12/20 13:42	JHH	Mt. Juliet, TN

MW-25B-031020 L1197690-06 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 11:00 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 14:02	03/12/20 14:02	JHH	Mt. Juliet, TN

MW-42-031020 L1197690-07 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 12:30 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1442024	1	03/13/20 20:07	03/13/20 20:07	LEB	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1442024	1	03/13/20 20:07	03/13/20 20:07	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1441975	1	03/12/20 04:50	03/12/20 04:50	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1443765	1	03/14/20 12:19	03/14/20 12:19	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 14:23	03/12/20 14:23	JHH	Mt. Juliet, TN

MW-41-031020 L1197690-08 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 12:45 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 14:43	03/12/20 14:43	JHH	Mt. Juliet, TN

MW-41-D-031020 L1197690-09 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 12:50 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 15:03	03/12/20 15:03	JHH	Mt. Juliet, TN

MW-40-031020 L1197690-10 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 13:00 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1442024	1	03/13/20 20:14	03/13/20 20:14	LEB	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1442024	1	03/13/20 20:14	03/13/20 20:14	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1441975	1	03/12/20 05:03	03/12/20 05:03	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1443765	1	03/14/20 12:21	03/14/20 12:21	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 15:24	03/12/20 15:24	JHH	Mt. Juliet, TN

MW-39-031020 L1197690-11 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 13:15 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 15:44	03/12/20 15:44	JHH	Mt. Juliet, TN

MW-34-031020 L1197690-12 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 13:25 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 16:05	03/12/20 16:05	JHH	Mt. Juliet, TN

MW-15-031020 L1197690-13 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 13:35 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1442024	1	03/13/20 20:22	03/13/20 20:22	LEB	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1442024	1	03/13/20 20:22	03/13/20 20:22	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1441975	1	03/12/20 05:16	03/12/20 05:16	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1443765	1	03/14/20 12:25	03/14/20 12:25	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 16:25	03/12/20 16:25	JHH	Mt. Juliet, TN

MW-43-031020 L1197690-14 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 14:20 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 16:45	03/12/20 16:45	JHH	Mt. Juliet, TN

MW-43B-031020 L1197690-15 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 14:25 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 17:06	03/12/20 17:06	JHH	Mt. Juliet, TN

MW-37-031020 L1197690-16 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 16:15 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1441975	1	03/12/20 05:28	03/12/20 05:28	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	1	03/14/20 13:15	03/14/20 13:15	JCP	Mt. Juliet, TN

MW-38-031020 L1197690-17 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 16:40 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1441975	1	03/12/20 05:41	03/12/20 05:41	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	1	03/14/20 13:35	03/14/20 13:35	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445837	10	03/18/20 00:31	03/18/20 00:31	ACG	Mt. Juliet, TN

FB01-031020 L1197690-18 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 17:20 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 11:39	03/12/20 11:39	JHH	Mt. Juliet, TN

TB01-031020 L1197690-19 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 00:00 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1442627	1	03/12/20 12:00	03/12/20 12:00	JHH	Mt. Juliet, TN

MW-24-031020 L1197690-20 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 14:00 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	1	03/14/20 13:55	03/14/20 13:55	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446443	1	03/18/20 21:06	03/18/20 21:06	BMB	Mt. Juliet, TN

MW-24B-031020 L1197690-21 GW

Collected by: Melissa Warren | Collected date/time: 03/10/20 13:55 | Received date/time: 03/11/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	1	03/14/20 14:16	03/14/20 14:16	JCP	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, 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.

Chris McCord
Project Manager

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	ND		20000	1	03/13/2020 19:29	WG1442024

Sample Narrative:
L1197690-01 WG1442024: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Free Carbon Dioxide	ND	T8	20000	1	03/13/2020 19:29	WG1442024

Sample Narrative:
L1197690-01 WG1442024: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Nitrate as (N)	ND		100	1	03/12/2020 03:34	WG1441975
Sulfate	ND		5000	1	03/12/2020 03:34	WG1441975

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	03/14/2020 12:12	WG1443765

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/12/2020 12:20	WG1442627
Toluene	ND		1.00	1	03/12/2020 12:20	WG1442627
Ethylbenzene	ND		1.00	1	03/12/2020 12:20	WG1442627
Total Xylenes	ND		3.00	1	03/12/2020 12:20	WG1442627
Methyl tert-butyl ether	ND		1.00	1	03/12/2020 12:20	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 12:20	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 12:20	WG1442627
(S) Toluene-d8	*98.4*		*80.0-120*		*03/12/2020 12:20*	WG1442627
(S) 4-Bromofluorobenzene	*98.7*		*77.0-126*		*03/12/2020 12:20*	WG1442627
(S) 1,2-Dichloroethane-d4	*108*		*70.0-130*		*03/12/2020 12:20*	WG1442627

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	ND		20000	1	03/13/2020 19:37	WG1442024

Sample Narrative:
L1197690-02 WG1442024: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Free Carbon Dioxide	ND	T8	20000	1	03/13/2020 19:37	WG1442024

Sample Narrative:
L1197690-02 WG1442024: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Nitrate as (N)	429		100	1	03/12/2020 03:46	WG1441975
Sulfate	13200		5000	1	03/12/2020 03:46	WG1441975

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	03/17/2020 17:14	WG1445731

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/12/2020 12:41	WG1442627
Toluene	ND		1.00	1	03/12/2020 12:41	WG1442627
Ethylbenzene	ND		1.00	1	03/12/2020 12:41	WG1442627
Total Xylenes	ND		3.00	1	03/12/2020 12:41	WG1442627
Methyl tert-butyl ether	ND		1.00	1	03/12/2020 12:41	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 12:41	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 12:41	WG1442627
(S) Toluene-d8	*101*		*80.0-120*		*03/12/2020 12:41*	WG1442627
(S) 4-Bromofluorobenzene	*103*		*77.0-126*		*03/12/2020 12:41*	WG1442627
(S) 1,2-Dichloroethane-d4	*105*		*70.0-130*		*03/12/2020 12:41*	WG1442627

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/12/2020 13:01	WG1442627
Toluene	ND		1.00	1	03/12/2020 13:01	WG1442627
Ethylbenzene	ND		1.00	1	03/12/2020 13:01	WG1442627
Total Xylenes	ND		3.00	1	03/12/2020 13:01	WG1442627
Methyl tert-butyl ether	ND		1.00	1	03/12/2020 13:01	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 13:01	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 13:01	WG1442627
(S) Toluene-d8	*96.4*		*80.0-120*		*03/12/2020 13:01*	WG1442627
(S) 4-Bromofluorobenzene	*103*		*77.0-126*		*03/12/2020 13:01*	WG1442627
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*03/12/2020 13:01*	WG1442627

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	ND		20000	1	03/13/2020 19:43	WG1442024

Sample Narrative:
L1197690-04 WG1442024: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Free Carbon Dioxide	ND	T8	20000	1	03/13/2020 19:43	WG1442024

Sample Narrative:
L1197690-04 WG1442024: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Nitrate as (N)	776		100	1	03/12/2020 03:59	WG1441975
Sulfate	ND		5000	1	03/12/2020 03:59	WG1441975

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	03/14/2020 12:14	WG1443765

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/12/2020 13:21	WG1442627
Toluene	ND		1.00	1	03/12/2020 13:21	WG1442627
Ethylbenzene	ND		1.00	1	03/12/2020 13:21	WG1442627
Total Xylenes	ND		3.00	1	03/12/2020 13:21	WG1442627
Methyl tert-butyl ether	ND		1.00	1	03/12/2020 13:21	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 13:21	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 13:21	WG1442627
(S) Toluene-d8	*101*		*80.0-120*		*03/12/2020 13:21*	WG1442627
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*03/12/2020 13:21*	WG1442627
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*03/12/2020 13:21*	WG1442627

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20000	1	03/13/2020 20:00	WG1442024

Sample Narrative:
L1197690-05 WG1442024: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Free Carbon Dioxide	ND	T8	20000	1	03/13/2020 20:00	WG1442024

Sample Narrative:
L1197690-05 WG1442024: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Nitrate as (N)	336		100	1	03/12/2020 04:37	WG1441975
Sulfate	ND		5000	1	03/12/2020 04:37	WG1441975

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	03/14/2020 12:16	WG1443765

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	03/12/2020 13:42	WG1442627
Toluene	ND		1.00	1	03/12/2020 13:42	WG1442627
Ethylbenzene	ND		1.00	1	03/12/2020 13:42	WG1442627
Total Xylenes	ND		3.00	1	03/12/2020 13:42	WG1442627
Methyl tert-butyl ether	ND		1.00	1	03/12/2020 13:42	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 13:42	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 13:42	WG1442627
(S) Toluene-d8	*98.6*		*80.0-120*		*03/12/2020 13:42*	WG1442627
(S) 4-Bromofluorobenzene	*98.1*		*77.0-126*		*03/12/2020 13:42*	WG1442627
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*03/12/2020 13:42*	WG1442627

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	1.12		1.00	1	03/12/2020 14:02	WG1442627
Toluene	ND		1.00	1	03/12/2020 14:02	WG1442627
Ethylbenzene	ND		1.00	1	03/12/2020 14:02	WG1442627
Total Xylenes	ND		3.00	1	03/12/2020 14:02	WG1442627
Methyl tert-butyl ether	ND		1.00	1	03/12/2020 14:02	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 14:02	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 14:02	WG1442627
(S) Toluene-d8	*99.6*		*80.0-120*		*03/12/2020 14:02*	WG1442627
(S) 4-Bromofluorobenzene	*103*		*77.0-126*		*03/12/2020 14:02*	WG1442627
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*03/12/2020 14:02*	WG1442627

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	ND		20000	1	03/13/2020 20:07	WG1442024

Sample Narrative:
L1197690-07 WG1442024: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Free Carbon Dioxide	ND	T8	20000	1	03/13/2020 20:07	WG1442024

Sample Narrative:
L1197690-07 WG1442024: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Nitrate as (N)	168		100	1	03/12/2020 04:50	WG1441975
Sulfate	ND		5000	1	03/12/2020 04:50	WG1441975

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	03/14/2020 12:19	WG1443765

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/12/2020 14:23	WG1442627
Toluene	ND		1.00	1	03/12/2020 14:23	WG1442627
Ethylbenzene	ND		1.00	1	03/12/2020 14:23	WG1442627
Total Xylenes	ND		3.00	1	03/12/2020 14:23	WG1442627
Methyl tert-butyl ether	ND		1.00	1	03/12/2020 14:23	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 14:23	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 14:23	WG1442627
(S) Toluene-d8	*99.0*		*80.0-120*		*03/12/2020 14:23*	WG1442627
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*03/12/2020 14:23*	WG1442627
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*03/12/2020 14:23*	WG1442627

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/12/2020 14:43	WG1442627
Toluene	ND		1.00	1	03/12/2020 14:43	WG1442627
Ethylbenzene	ND		1.00	1	03/12/2020 14:43	WG1442627
Total Xylenes	ND		3.00	1	03/12/2020 14:43	WG1442627
Methyl tert-butyl ether	ND		1.00	1	03/12/2020 14:43	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 14:43	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 14:43	WG1442627
(S) Toluene-d8	*100*		*80.0-120*		*03/12/2020 14:43*	WG1442627
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*03/12/2020 14:43*	WG1442627
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*03/12/2020 14:43*	WG1442627

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/12/2020 15:03	WG1442627
Toluene	ND		1.00	1	03/12/2020 15:03	WG1442627
Ethylbenzene	ND		1.00	1	03/12/2020 15:03	WG1442627
Total Xylenes	ND		3.00	1	03/12/2020 15:03	WG1442627
Methyl tert-butyl ether	ND		1.00	1	03/12/2020 15:03	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 15:03	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 15:03	WG1442627
(S) Toluene-d8	*99.2*		*80.0-120*		*03/12/2020 15:03*	WG1442627
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*03/12/2020 15:03*	WG1442627
(S) 1,2-Dichloroethane-d4	*108*		*70.0-130*		*03/12/2020 15:03*	WG1442627

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	28000	B	20000	1	03/13/2020 20:14	WG1442024

Sample Narrative:
L1197690-10 WG1442024: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Free Carbon Dioxide	ND	T8	20000	1	03/13/2020 20:14	WG1442024

Sample Narrative:
L1197690-10 WG1442024: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Nitrate as (N)	ND		100	1	03/12/2020 05:03	WG1441975
Sulfate	ND		5000	1	03/12/2020 05:03	WG1441975

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	16.9		10.0	1	03/14/2020 12:21	WG1443765

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	195		1.00	1	03/12/2020 15:24	WG1442627
Toluene	53.0		1.00	1	03/12/2020 15:24	WG1442627
Ethylbenzene	2.92		1.00	1	03/12/2020 15:24	WG1442627
Total Xylenes	102		3.00	1	03/12/2020 15:24	WG1442627
Methyl tert-butyl ether	29.9		1.00	1	03/12/2020 15:24	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 15:24	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 15:24	WG1442627
(S) Toluene-d8	*95.0*		*80.0-120*		*03/12/2020 15:24*	WG1442627
(S) 4-Bromofluorobenzene	*100*		*77.0-126*		*03/12/2020 15:24*	WG1442627
(S) 1,2-Dichloroethane-d4	*110*		*70.0-130*		*03/12/2020 15:24*	WG1442627

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/12/2020 15:44	WG1442627
Toluene	ND		1.00	1	03/12/2020 15:44	WG1442627
Ethylbenzene	ND		1.00	1	03/12/2020 15:44	WG1442627
Total Xylenes	ND		3.00	1	03/12/2020 15:44	WG1442627
Methyl tert-butyl ether	124		1.00	1	03/12/2020 15:44	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 15:44	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 15:44	WG1442627
(S) Toluene-d8	*103*		*80.0-120*		*03/12/2020 15:44*	WG1442627
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*03/12/2020 15:44*	WG1442627
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*03/12/2020 15:44*	WG1442627

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	1.54		1.00	1	03/12/2020 16:05	WG1442627
Toluene	ND		1.00	1	03/12/2020 16:05	WG1442627
Ethylbenzene	ND		1.00	1	03/12/2020 16:05	WG1442627
Total Xylenes	3.06		3.00	1	03/12/2020 16:05	WG1442627
Methyl tert-butyl ether	167		1.00	1	03/12/2020 16:05	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 16:05	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 16:05	WG1442627
(S) Toluene-d8	*102*		*80.0-120*		*03/12/2020 16:05*	WG1442627
(S) 4-Bromofluorobenzene	*107*		*77.0-126*		*03/12/2020 16:05*	WG1442627
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*03/12/2020 16:05*	WG1442627

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	ND		20000	1	03/13/2020 20:22	WG1442024

Sample Narrative:
L1197690-13 WG1442024: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Free Carbon Dioxide	ND	T8	20000	1	03/13/2020 20:22	WG1442024

Sample Narrative:
L1197690-13 WG1442024: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Nitrate as (N)	911		100	1	03/12/2020 05:16	WG1441975
Sulfate	9440		5000	1	03/12/2020 05:16	WG1441975

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	03/14/2020 12:25	WG1443765

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/12/2020 16:25	WG1442627
Toluene	ND		1.00	1	03/12/2020 16:25	WG1442627
Ethylbenzene	ND		1.00	1	03/12/2020 16:25	WG1442627
Total Xylenes	ND		3.00	1	03/12/2020 16:25	WG1442627
Methyl tert-butyl ether	4.19		1.00	1	03/12/2020 16:25	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 16:25	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 16:25	WG1442627
(S) Toluene-d8	*95.9*		*80.0-120*		*03/12/2020 16:25*	WG1442627
(S) 4-Bromofluorobenzene	*94.9*		*77.0-126*		*03/12/2020 16:25*	WG1442627
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*03/12/2020 16:25*	WG1442627

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/12/2020 16:45	WG1442627
Toluene	ND		1.00	1	03/12/2020 16:45	WG1442627
Ethylbenzene	ND		1.00	1	03/12/2020 16:45	WG1442627
Total Xylenes	ND		3.00	1	03/12/2020 16:45	WG1442627
Methyl tert-butyl ether	ND		1.00	1	03/12/2020 16:45	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 16:45	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 16:45	WG1442627
(S) Toluene-d8	*102*		*80.0-120*		*03/12/2020 16:45*	WG1442627
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*03/12/2020 16:45*	WG1442627
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*03/12/2020 16:45*	WG1442627

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/12/2020 17:06	WG1442627
Toluene	ND		1.00	1	03/12/2020 17:06	WG1442627
Ethylbenzene	ND		1.00	1	03/12/2020 17:06	WG1442627
Total Xylenes	ND		3.00	1	03/12/2020 17:06	WG1442627
Methyl tert-butyl ether	ND		1.00	1	03/12/2020 17:06	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 17:06	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 17:06	WG1442627
(S) Toluene-d8	*98.9*		*80.0-120*		*03/12/2020 17:06*	WG1442627
(S) 4-Bromofluorobenzene	*99.6*		*77.0-126*		*03/12/2020 17:06*	WG1442627
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*03/12/2020 17:06*	WG1442627

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	27500		5000	1	03/12/2020 05:28	WG1441975

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 13:15	WG1444067
Toluene	ND		1.00	1	03/14/2020 13:15	WG1444067
Ethylbenzene	ND		1.00	1	03/14/2020 13:15	WG1444067
Total Xylenes	ND		3.00	1	03/14/2020 13:15	WG1444067
Methyl tert-butyl ether	2.85		1.00	1	03/14/2020 13:15	WG1444067
Naphthalene	ND	J0	5.00	1	03/14/2020 13:15	WG1444067
1,2-Dichloroethane	ND		1.00	1	03/14/2020 13:15	WG1444067
(S) Toluene-d8	*97.4*		*80.0-120*		*03/14/2020 13:15*	WG1444067
(S) 4-Bromofluorobenzene	*100*		*77.0-126*		*03/14/2020 13:15*	WG1444067
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*03/14/2020 13:15*	WG1444067

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	76600		5000	1	03/12/2020 05:41	WG1441975

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	411		10.0	10	03/18/2020 00:31	WG1445837
Toluene	2.68		1.00	1	03/14/2020 13:35	WG1444067
Ethylbenzene	1.37		1.00	1	03/14/2020 13:35	WG1444067
Total Xylenes	172		3.00	1	03/14/2020 13:35	WG1444067
Methyl tert-butyl ether	144		1.00	1	03/14/2020 13:35	WG1444067
Naphthalene	ND	J0	5.00	1	03/14/2020 13:35	WG1444067
1,2-Dichloroethane	ND		1.00	1	03/14/2020 13:35	WG1444067
(S) Toluene-d8	*99.8*		*80.0-120*		*03/14/2020 13:35*	WG1444067
(S) Toluene-d8	*116*		*80.0-120*		*03/18/2020 00:31*	WG1445837
(S) 4-Bromofluorobenzene	*97.8*		*77.0-126*		*03/14/2020 13:35*	WG1444067
(S) 4-Bromofluorobenzene	*105*		*77.0-126*		*03/18/2020 00:31*	WG1445837
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*03/14/2020 13:35*	WG1444067
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*03/18/2020 00:31*	WG1445837

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/12/2020 11:39	WG1442627
Toluene	ND		1.00	1	03/12/2020 11:39	WG1442627
Ethylbenzene	ND		1.00	1	03/12/2020 11:39	WG1442627
Total Xylenes	ND		3.00	1	03/12/2020 11:39	WG1442627
Methyl tert-butyl ether	ND		1.00	1	03/12/2020 11:39	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 11:39	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 11:39	WG1442627
(S) Toluene-d8	*97.6*		*80.0-120*		*03/12/2020 11:39*	WG1442627
(S) 4-Bromofluorobenzene	*107*		*77.0-126*		*03/12/2020 11:39*	WG1442627
(S) 1,2-Dichloroethane-d4	*110*		*70.0-130*		*03/12/2020 11:39*	WG1442627

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/12/2020 12:00	WG1442627
Toluene	ND		1.00	1	03/12/2020 12:00	WG1442627
Ethylbenzene	ND		1.00	1	03/12/2020 12:00	WG1442627
Total Xylenes	ND		3.00	1	03/12/2020 12:00	WG1442627
Methyl tert-butyl ether	ND		1.00	1	03/12/2020 12:00	WG1442627
Naphthalene	ND		5.00	1	03/12/2020 12:00	WG1442627
1,2-Dichloroethane	ND		1.00	1	03/12/2020 12:00	WG1442627
(S) Toluene-d8	*98.1*		*80.0-120*		*03/12/2020 12:00*	WG1442627
(S) 4-Bromofluorobenzene	*103*		*77.0-126*		*03/12/2020 12:00*	WG1442627
(S) 1,2-Dichloroethane-d4	*109*		*70.0-130*		*03/12/2020 12:00*	WG1442627

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/18/2020 21:06	WG1446443
Toluene	ND		1.00	1	03/14/2020 13:55	WG1444067
Ethylbenzene	ND		1.00	1	03/14/2020 13:55	WG1444067
Total Xylenes	ND		3.00	1	03/14/2020 13:55	WG1444067
Methyl tert-butyl ether	ND		1.00	1	03/14/2020 13:55	WG1444067
Naphthalene	ND	J0	5.00	1	03/14/2020 13:55	WG1444067
1,2-Dichloroethane	ND		1.00	1	03/14/2020 13:55	WG1444067
(S) Toluene-d8	*100*		*80.0-120*		*03/14/2020 13:55*	WG1444067
(S) Toluene-d8	*107*		*80.0-120*		*03/18/2020 21:06*	WG1446443
(S) 4-Bromofluorobenzene	*99.6*		*77.0-126*		*03/14/2020 13:55*	WG1444067
(S) 4-Bromofluorobenzene	*87.4*		*77.0-126*		*03/18/2020 21:06*	WG1446443
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*03/14/2020 13:55*	WG1444067
(S) 1,2-Dichloroethane-d4	*108*		*70.0-130*		*03/18/2020 21:06*	WG1446443

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 14:16	WG1444067
Toluene	ND		1.00	1	03/14/2020 14:16	WG1444067
Ethylbenzene	ND		1.00	1	03/14/2020 14:16	WG1444067
Total Xylenes	ND		3.00	1	03/14/2020 14:16	WG1444067
Methyl tert-butyl ether	ND		1.00	1	03/14/2020 14:16	WG1444067
Naphthalene	ND	J0	5.00	1	03/14/2020 14:16	WG1444067
1,2-Dichloroethane	ND		1.00	1	03/14/2020 14:16	WG1444067
(S) Toluene-d8	*98.6*		*80.0-120*		*03/14/2020 14:16*	WG1444067
(S) 4-Bromofluorobenzene	*95.9*		*77.0-126*		*03/14/2020 14:16*	WG1444067
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*03/14/2020 14:16*	WG1444067

Method Blank (MB)

(MB) R3508574-1 03/13/20 18:32

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	6000	J	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1197683-23 Original Sample (OS) • Duplicate (DUP)

(OS) L1197683-23 03/13/20 18:45 • (DUP) R3508574-3 03/13/20 18:52

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	200000	203000	1	1.58		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

L1198739-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1198739-01 03/13/20 21:42 • (DUP) R3508574-6 03/13/20 21:52

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	123000	124000	1	0.559		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3508574-5 03/13/20 19:51

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	101000	101	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3508574-2 03/13/20 18:32

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Free Carbon Dioxide	U		6670	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1197683-23 Original Sample (OS) • Duplicate (DUP)

(OS) L1197683-23 03/13/20 18:45 • (DUP) R3508574-4 03/13/20 18:52

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Free Carbon Dioxide	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

L1198739-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1198739-01 03/13/20 21:42 • (DUP) R3508574-7 03/13/20 21:52

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Free Carbon Dioxide	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

Method Blank (MB)

(MB) R3508002-1 03/12/20 01:19

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

L1197954-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1197954-01 03/12/20 02:30 • (DUP) R3508002-3 03/12/20 02:42

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Nitrate	1900	1860	1	1.94		15
Sulfate	ND	2860	1	0.000		15

L1197690-17 Original Sample (OS) • Duplicate (DUP)

(OS) L1197690-17 03/12/20 05:41 • (DUP) R3508002-6 03/12/20 05:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Nitrate	836	821	1	1.80		15
Sulfate	76600	75300	1	1.64		15

Laboratory Control Sample (LCS)

(LCS) R3508002-2 03/12/20 01:31

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Nitrate	8000	7790	97.4	80.0-120	
Sulfate	40000	39200	98.1	80.0-120	

L1197954-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1197954-01 03/12/20 02:30 • (MS) R3508002-4 03/12/20 02:55 • (MSD) R3508002-5 03/12/20 03:08

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Nitrate	5000	1900	7010	6750	102	97.1	1	80.0-120			3.71	15
Sulfate	50000	ND	53400	51400	101	96.9	1	80.0-120			3.81	15

L1197690-17 Original Sample (OS) • Matrix Spike (MS)

(OS) L1197690-17 03/12/20 05:41 • (MS) R3508002-7 03/12/20 06:07

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate	5000	836	5640	96.2	1	80.0-120	
Sulfate	50000	76600	120000	87.6	1	80.0-120	E

Method Blank (MB)

(MB) R3508620-2 03/14/20 12:10

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		2.91	10.0

L1197690-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1197690-05 03/14/20 12:16 • (DUP) R3508620-3 03/14/20 13:05

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	ND	0.000	1	0.000		20

L1197835-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1197835-02 03/14/20 13:07 • (DUP) R3508620-4 03/14/20 13:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	U	0.000	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3508620-1 03/14/20 12:07

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Methane	67.8	64.8	95.6	85.0-115	

Method Blank (MB)

(MB) R3509924-2 03/12/20 06:28

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*102*			*80.0-120*
(S) 4-Bromofluorobenzene	*100*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3509924-1 03/12/20 05:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.82	116	70.0-130	
1,2-Dichloroethane	5.00	5.72	114	70.0-130	
Ethylbenzene	5.00	5.85	117	70.0-130	
Methyl tert-butyl ether	5.00	5.98	120	70.0-130	
Naphthalene	5.00	4.69	93.8	70.0-130	
Toluene	5.00	5.37	107	70.0-130	
Xylenes, Total	15.0	17.1	114	70.0-130	
(S) Toluene-d8			*99.8*	*80.0-120*	
(S) 4-Bromofluorobenzene			*102*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*107*	*70.0-130*	

Method Blank (MB)

(MB) R3509572-2 03/14/20 11:45

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*98.3*			*80.0-120*
(S) 4-Bromofluorobenzene	*97.9*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3509572-1 03/14/20 11:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.07	101	70.0-130	
1,2-Dichloroethane	5.00	5.12	102	70.0-130	
Ethylbenzene	5.00	5.33	107	70.0-130	
Methyl tert-butyl ether	5.00	5.69	114	70.0-130	
Naphthalene	5.00	4.94	98.8	70.0-130	
Toluene	5.00	5.00	100	70.0-130	
Xylenes, Total	15.0	16.0	107	70.0-130	
(S) Toluene-d8			*98.7*	*80.0-120*	
(S) 4-Bromofluorobenzene			*100*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*103*	*70.0-130*	

Method Blank (MB)

(MB) R3509693-2 03/17/20 22:10

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
(S) Toluene-d8	*111*			*80.0-120*
(S) 4-Bromofluorobenzene	*105*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3509693-1 03/17/20 21:11

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.09	102	70.0-130	
(S) Toluene-d8			*111*	*80.0-120*	
(S) 4-Bromofluorobenzene			*106*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*106*	*70.0-130*	

Method Blank (MB)

(MB) R3510069-2 03/18/20 17:26

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
(S) Toluene-d8	*104*			*80.0-120*
(S) 4-Bromofluorobenzene	*88.5*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*119*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3510069-1 03/18/20 16:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.38	108	70.0-130	
(S) Toluene-d8			*104*	*80.0-120*	
(S) 4-Bromofluorobenzene			*87.9*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*113*	*70.0-130*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(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.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration met method criteria.
T8	Sample(s) received past/too close to holding time expiration.

Pace National 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.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

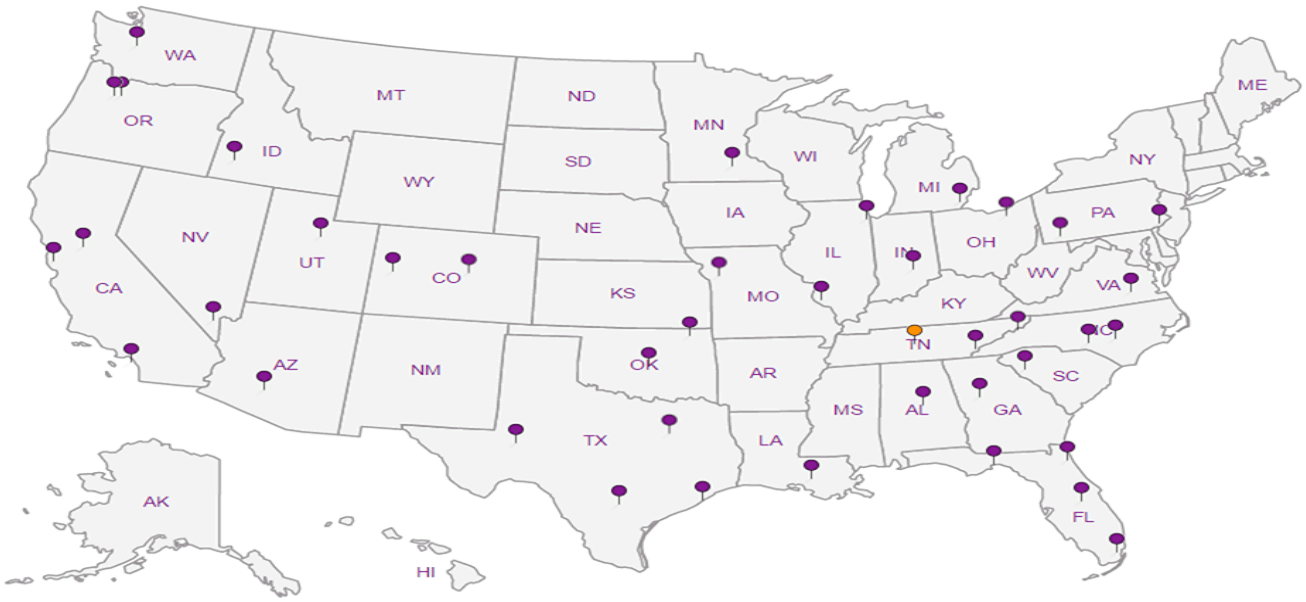
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National 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. Pace National performs all testing at our central laboratory.



Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com;tom.wiley@jacobs.co

Project Description: Lewis Drive Groundwater

City/State Collected: BELTON, SC

Please Circle: PT MT CT ET

Phone: 770-604-9182
Fax:

Client Project #: KMLOOM20. B.CS.GEN.LOOMR.GW

Lab Project #: KINCH2MGA-LEWIS12

Collected by (print): MELISSA WARREN

Site/Facility ID #: LEWIS DRIVE

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y X

Chain of Custody Page 1 of 3

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1197650

Table F212

Acctnum: KINCH2MGA

Template: T155769

Prelogin: P758897

PM: 526 - Chris McCord

PB: 3-4-2020 GM

Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Pres Chk	**NITRATE,SULFATE** 125mlHDPE-NoPres	ALK,CO2 125mlHDPE-NoPres	Methane - RSK175 40mlAmb HCl	SULFATE 125mlHDPE-NoPres	V8260BTEXMNSC 40mlAmb-HCl	V8260BTEXMNSC-TB 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
MW-12-031020	GRAB	GW	NA	03/10/20	0935	7		X	X	X		X			-01
MW-28-031020		GW			1000	3		~~X~~	~~X~~	~~X~~ (2)		X			-02
MW-49-031020		GW			1020	3		~~X~~	~~X~~	~~X~~ (2)		X			-03
MW-35-031020		GW			1035	7		X	X	X		X			-04
MW-25-031020		GW			1050	7		X	X	X		X			-05
MW-25B-031020		GW			1100	3		~~X~~	~~X~~ (2)			X			-06
MW-42-031020		GW			1230	7		X	X	X		X			-07
MW-41-031020		GW			1245	3						X			-08
MW-41-D-031020		GW			1250	3						X			-09
MW-40-031020		GW			1300	7		X	X	X		X			-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: V8260BTEXMNSC=BTEX, MTBE, Naphthalene, and 1,2-DCA.

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 1663 5752 7666

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	03/10/20	1830			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.2 °C Bottles Received: 0.7-4-a3 82	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 3/11/20 Time: 08:30	Hold: Condition: NCF / OK

Chain of Custody Page 2 of 3

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com;tom.wiley@jacobs.co

Project Description: Lewis Drive Groundwater

City/State Collected: BELTON, SC

Please Circle: PT MT CT ET

Phone: 770-604-9182
Fax:

Client Project #: KMLDOM20 B.CS.GEN.LDOMR

Lab Project #: KINCH2MGA-LEWIS12

Collected by (print): MELISSA WARREN

Site/Facility ID #: LEWIS DRIVE

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y X

SDG # L1197690
Table #
Acctnum: KINCH2MGA
Template: T155769
Prelogin: P758897
PM: 526 - Chris McCord
PB:
Shipped Via: FedEX Ground

Pres Chk: X X X X X X

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NITRATE,SULFATE** 125mlHDPE-NoPres	ALK,CO2 125mlHDPE-NoPres	Methane - RSK175 40mlAmb HCl	SULFATE 125mlHDPE-NoPres	V8260BTEXMNSC 40mlAmb-HCl	V8260BTEXMNSC-TB 40mlAmb-HCl-Blk				Remarks	Sample # (lab only)
MW-39-031020	GRAB	GW	NA	03/10/20	1315	3					X						-11
MW-34-031020	↓	GW	↓	↓	1325	3					X						-12
MW-15-031020		GW			1335	6	X	X	X		X					2 VOC VIALS LOW ALK VOL	-13
MW-43-031020		GW			1420	3					X						-14
MW-43B-031020		GW			1425	3					X						-15
MW-37-031020		GW			1615	4				X	X						-16
MW-38-031020		GW			1640	4				X	X						-17
FB01-031020		GW			1720	3					X						-18
TB01-031020		GW			—	1						X					-19
MW-24-031020	↓	GW	↓	↓	1400	3				~~X~~	X	~~X~~					-20

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other________

Remarks: V8260BTEXMNSC=BTEX, MTBE, Naphthalene, and 1,2-DCA.

pH ______ Temp ______
Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier ________

Tracking # 1663 5752 7666

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
[signature]	03/10/20	1830			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.7 °C 2.7-.4=0.3	Bottles Received: 82
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 3/11/20	Time: 08:30

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Chain of Custody

Page 3 of 3

Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Pres Chk

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com;tom.wiley@jacobs.co

Project Description: Lewis Drive Groundwater

City/State Collected: BECTON, SC

Please Circle: PT MT CT ET

Phone: 770-604-9182
Fax:

Client Project # KMLDOM20 B, CS, GEN, LDOMR

Lab Project # KINCH2MGA-LEWIS12

Collected by (print): MELISSA WARNER

Site/Facility ID # LEWIS DRIVE

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NITRATE,SULFATE** 125mlHDPE-NoPres	ALK,CO2 125mlHDPE-NoPres	Methane - RSK175 40mlAmb HCl	SULFATE 125mlHDPE-NoPres	V8260BTEXMNSC 40mlAmb-HCl	V8260BTEXMNSC-TB 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
MW-24B-031020	GRAB	GW	NA	03/10/20	1355	3					X			-21
		GW												
		GW												
		GW												
		GW												
		GW												
		GW												
		GW												
		GW												
		GW												

Chain of Custody

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1157690

Table #

Acctnum: KINCH2MGA

Template: T155769

Prelogin: P758897

PM: 526 - Chris McCord

PB:

Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: V8260BTEXMNSC=BTEX, MTBE, Naphthalene, and 1,2-DCA.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 1663 5752 7666

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

	Date:	Time:		
Relinquished by : (Signature)	03/10/20	1830	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.2 °C Bottles Received: 82
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) L Webb	Date: 3/11/20 Time: 08:30

If preservation required by Login: Date/Time

Hold:

Condition: NCF OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

March 24, 2020

Kinder Morgan- Atlanta, GA

Sample Delivery Group:	L1198496
Samples Received:	03/12/2020
Project Number:	KMLDOM20 B.CS.GEN.LD
Description:	Lewis Drive Groundwater
Site:	LEWIS DRIVE
Report To:	Bethany Garvey Ten 10th Street NW Suite 1400 Atlanta, GA 30309

Entire Report Reviewed By:

Chris McCord
Project Manager

MW-23-031120 L1198496-01 GW

Collected by: Melissa Warren | Collected date/time: 03/11/20 09:20 | Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	20	03/14/20 14:36	03/14/20 14:36	JCP	Mt. Juliet, TN

MW-23-D-031120 L1198496-02 GW

Collected by: Melissa Warren | Collected date/time: 03/11/20 09:25 | Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	20	03/14/20 14:57	03/14/20 14:57	JCP	Mt. Juliet, TN

MW-45-031120 L1198496-03 GW

Collected by: Melissa Warren | Collected date/time: 03/11/20 09:30 | Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	1	03/14/20 15:17	03/14/20 15:17	JCP	Mt. Juliet, TN

MW-07-031120 L1198496-04 GW

Collected by: Melissa Warren | Collected date/time: 03/11/20 09:45 | Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1448737	5	03/23/20 11:43	03/23/20 11:43	JAH	Mt. Juliet, TN

MW-15B-031120 L1198496-05 GW

Collected by: Melissa Warren | Collected date/time: 03/11/20 10:15 | Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	100	03/14/20 15:57	03/14/20 15:57	JCP	Mt. Juliet, TN

MW-14-031120 L1198496-06 GW

Collected by: Melissa Warren | Collected date/time: 03/11/20 10:30 | Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	1	03/14/20 16:17	03/14/20 16:17	JCP	Mt. Juliet, TN

MW-14B-031120 L1198496-07 GW

Collected by: Melissa Warren | Collected date/time: 03/11/20 10:35 | Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	1	03/14/20 16:38	03/14/20 16:38	JCP	Mt. Juliet, TN

MW-13B-031120 L1198496-08 GW

Collected by: Melissa Warren | Collected date/time: 03/11/20 10:45 | Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	20	03/14/20 16:58	03/14/20 16:58	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445837	500	03/18/20 01:12	03/18/20 01:12	ACG	Mt. Juliet, TN

MW-13-031120 L1198496-09 GW

Collected by: Melissa Warren | Collected date/time: 03/11/20 10:55 | Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	1	03/14/20 17:19	03/14/20 17:19	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445837	20	03/18/20 01:32	03/18/20 01:32	ACG	Mt. Juliet, TN

MW-48B-031120 L1198496-10 GW

Collected by: Melissa Warren | Collected date/time: 03/11/20 11:15 | Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	1	03/14/20 17:39	03/14/20 17:39	JCP	Mt. Juliet, TN

MW-50B-031120 L1198496-11 GW

Collected by: Melissa Warren | Collected date/time: 03/11/20 13:35 | Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	1	03/14/20 17:59	03/14/20 17:59	JCP	Mt. Juliet, TN

MW-33T-031120 L1198496-12 GW

Collected by: Melissa Warren | Collected date/time: 03/11/20 13:50 | Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	1	03/14/20 18:19	03/14/20 18:19	JCP	Mt. Juliet, TN

MW-31-031120 L1198496-13 GW

Collected by: Melissa Warren | Collected date/time: 03/11/20 14:00 | Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	1	03/14/20 18:39	03/14/20 18:39	JCP	Mt. Juliet, TN

MW-47-031120 L1198496-14 GW

Collected by: Melissa Warren | Collected date/time: 03/11/20 14:10 | Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	1	03/14/20 19:00	03/14/20 19:00	JCP	Mt. Juliet, TN

MW-57-031120 L1198496-15 GW

Collected by: Melissa Warren | Collected date/time: 03/11/20 16:05 | Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1443383	10	03/14/20 20:06	03/14/20 20:06	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	1	03/14/20 19:20	03/14/20 19:20	JCP	Mt. Juliet, TN

MW-56-031120 L1198496-16 GW

Collected by: Melissa Warren | Collected date/time: 03/11/20 16:10 | Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1443383	10	03/14/20 20:22	03/14/20 20:22	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444067	1	03/14/20 19:41	03/14/20 19:41	JCP	Mt. Juliet, TN

FB02-031120 L1198496-17 GW

Collected by: Melissa Warren
Collected date/time: 03/11/20 17:30
Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	1	03/14/20 21:56	03/14/20 21:56	JCP	Mt. Juliet, TN

TB02-031120 L1198496-18 GW

Collected by: Melissa Warren
Collected date/time: 03/11/20 00:00
Received date/time: 03/12/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	1	03/14/20 22:17	03/14/20 22:17	JCP	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, 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.

Chris McCord
Project Manager

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	349		20.0	20	03/14/2020 14:36	WG1444067
Toluene	ND		20.0	20	03/14/2020 14:36	WG1444067
Ethylbenzene	ND		20.0	20	03/14/2020 14:36	WG1444067
Total Xylenes	153		3.00	20	03/14/2020 14:36	WG1444067
Methyl tert-butyl ether	41.0		20.0	20	03/14/2020 14:36	WG1444067
Naphthalene	ND	J0	100	20	03/14/2020 14:36	WG1444067
1,2-Dichloroethane	ND		20.0	20	03/14/2020 14:36	WG1444067
(S) Toluene-d8	*97.3*		*80.0-120*		*03/14/2020 14:36*	WG1444067
(S) 4-Bromofluorobenzene	*95.8*		*77.0-126*		*03/14/2020 14:36*	WG1444067
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*03/14/2020 14:36*	WG1444067

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	343		20.0	20	03/14/2020 14:57	WG1444067
Toluene	ND		20.0	20	03/14/2020 14:57	WG1444067
Ethylbenzene	ND		20.0	20	03/14/2020 14:57	WG1444067
Total Xylenes	138		3.00	20	03/14/2020 14:57	WG1444067
Methyl tert-butyl ether	40.9		20.0	20	03/14/2020 14:57	WG1444067
Naphthalene	ND	J0	100	20	03/14/2020 14:57	WG1444067
1,2-Dichloroethane	ND		20.0	20	03/14/2020 14:57	WG1444067
(S) Toluene-d8	*97.1*		*80.0-120*		*03/14/2020 14:57*	WG1444067
(S) 4-Bromofluorobenzene	*95.8*		*77.0-126*		*03/14/2020 14:57*	WG1444067
(S) 1,2-Dichloroethane-d4	*105*		*70.0-130*		*03/14/2020 14:57*	WG1444067

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 15:17	WG1444067
Toluene	ND		1.00	1	03/14/2020 15:17	WG1444067
Ethylbenzene	ND		1.00	1	03/14/2020 15:17	WG1444067
Total Xylenes	ND		3.00	1	03/14/2020 15:17	WG1444067
Methyl tert-butyl ether	1.15		1.00	1	03/14/2020 15:17	WG1444067
Naphthalene	ND	J0	5.00	1	03/14/2020 15:17	WG1444067
1,2-Dichloroethane	ND		1.00	1	03/14/2020 15:17	WG1444067
(S) Toluene-d8	*101*		*80.0-120*		*03/14/2020 15:17*	WG1444067
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*03/14/2020 15:17*	WG1444067
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*03/14/2020 15:17*	WG1444067

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	62.3		5.00	5	03/23/2020 11:43	WG1448737
Toluene	464		5.00	5	03/23/2020 11:43	WG1448737
Ethylbenzene	76.0		5.00	5	03/23/2020 11:43	WG1448737
Total Xylenes	1310		15.0	5	03/23/2020 11:43	WG1448737
Methyl tert-butyl ether	ND		5.00	5	03/23/2020 11:43	WG1448737
Naphthalene	40.9		25.0	5	03/23/2020 11:43	WG1448737
1,2-Dichloroethane	ND		5.00	5	03/23/2020 11:43	WG1448737
(S) Toluene-d8	*105*		*80.0-120*		*03/23/2020 11:43*	WG1448737
(S) 4-Bromofluorobenzene	*111*		*77.0-126*		*03/23/2020 11:43*	WG1448737
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*03/23/2020 11:43*	WG1448737

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	4380		100	100	03/14/2020 15:57	WG1444067
Toluene	1620		100	100	03/14/2020 15:57	WG1444067
Ethylbenzene	211		100	100	03/14/2020 15:57	WG1444067
Total Xylenes	2080		3.00	100	03/14/2020 15:57	WG1444067
Methyl tert-butyl ether	260		100	100	03/14/2020 15:57	WG1444067
Naphthalene	ND	J0	500	100	03/14/2020 15:57	WG1444067
1,2-Dichloroethane	ND		100	100	03/14/2020 15:57	WG1444067
(S) Toluene-d8	*95.6*		*80.0-120*		*03/14/2020 15:57*	WG1444067
(S) 4-Bromofluorobenzene	*96.7*		*77.0-126*		*03/14/2020 15:57*	WG1444067
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*03/14/2020 15:57*	WG1444067

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 16:17	WG1444067
Toluene	ND		1.00	1	03/14/2020 16:17	WG1444067
Ethylbenzene	ND		1.00	1	03/14/2020 16:17	WG1444067
Total Xylenes	ND		3.00	1	03/14/2020 16:17	WG1444067
Methyl tert-butyl ether	ND		1.00	1	03/14/2020 16:17	WG1444067
Naphthalene	ND	J0	5.00	1	03/14/2020 16:17	WG1444067
1,2-Dichloroethane	ND		1.00	1	03/14/2020 16:17	WG1444067
(S) Toluene-d8	*99.1*		*80.0-120*		*03/14/2020 16:17*	WG1444067
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*03/14/2020 16:17*	WG1444067
(S) 1,2-Dichloroethane-d4	*106*		*70.0-130*		*03/14/2020 16:17*	WG1444067

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	12.8		1.00	1	03/14/2020 16:38	WG1444067
Toluene	ND		1.00	1	03/14/2020 16:38	WG1444067
Ethylbenzene	ND		1.00	1	03/14/2020 16:38	WG1444067
Total Xylenes	3.38		3.00	1	03/14/2020 16:38	WG1444067
Methyl tert-butyl ether	11.7		1.00	1	03/14/2020 16:38	WG1444067
Naphthalene	ND	J0	5.00	1	03/14/2020 16:38	WG1444067
1,2-Dichloroethane	ND		1.00	1	03/14/2020 16:38	WG1444067
(S) Toluene-d8	*98.9*		*80.0-120*		*03/14/2020 16:38*	WG1444067
(S) 4-Bromofluorobenzene	*99.3*		*77.0-126*		*03/14/2020 16:38*	WG1444067
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*03/14/2020 16:38*	WG1444067

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	4690		500	500	03/18/2020 01:12	WG1445837
Toluene	8870		500	500	03/18/2020 01:12	WG1445837
Ethylbenzene	217		20.0	20	03/14/2020 16:58	WG1444067
Total Xylenes	1530		3.00	20	03/14/2020 16:58	WG1444067
Methyl tert-butyl ether	ND		20.0	20	03/14/2020 16:58	WG1444067
Naphthalene	ND	J0	100	20	03/14/2020 16:58	WG1444067
1,2-Dichloroethane	ND		20.0	20	03/14/2020 16:58	WG1444067
(S) Toluene-d8	*98.7*		*80.0-120*		*03/14/2020 16:58*	WG1444067
(S) Toluene-d8	*116*		*80.0-120*		*03/18/2020 01:12*	WG1445837
(S) 4-Bromofluorobenzene	*95.6*		*77.0-126*		*03/14/2020 16:58*	WG1444067
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*03/18/2020 01:12*	WG1445837
(S) 1,2-Dichloroethane-d4	*98.9*		*70.0-130*		*03/14/2020 16:58*	WG1444067
(S) 1,2-Dichloroethane-d4	*106*		*70.0-130*		*03/18/2020 01:12*	WG1445837

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	1000		20.0	20	03/18/2020 01:32	WG1445837
Toluene	30.5		1.00	1	03/14/2020 17:19	WG1444067
Ethylbenzene	4.59		1.00	1	03/14/2020 17:19	WG1444067
Total Xylenes	23.3		3.00	1	03/14/2020 17:19	WG1444067
Methyl tert-butyl ether	133		1.00	1	03/14/2020 17:19	WG1444067
Naphthalene	6.17	J0	5.00	1	03/14/2020 17:19	WG1444067
1,2-Dichloroethane	ND		1.00	1	03/14/2020 17:19	WG1444067
(S) Toluene-d8	*102*		*80.0-120*		*03/14/2020 17:19*	WG1444067
(S) Toluene-d8	*114*		*80.0-120*		*03/18/2020 01:32*	WG1445837
(S) 4-Bromofluorobenzene	*94.4*		*77.0-126*		*03/14/2020 17:19*	WG1444067
(S) 4-Bromofluorobenzene	*99.7*		*77.0-126*		*03/18/2020 01:32*	WG1445837
(S) 1,2-Dichloroethane-d4	*90.9*		*70.0-130*		*03/14/2020 17:19*	WG1444067
(S) 1,2-Dichloroethane-d4	*106*		*70.0-130*		*03/18/2020 01:32*	WG1445837

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 17:39	WG1444067
Toluene	ND		1.00	1	03/14/2020 17:39	WG1444067
Ethylbenzene	ND		1.00	1	03/14/2020 17:39	WG1444067
Total Xylenes	ND		3.00	1	03/14/2020 17:39	WG1444067
Methyl tert-butyl ether	1.23		1.00	1	03/14/2020 17:39	WG1444067
Naphthalene	ND	J0	5.00	1	03/14/2020 17:39	WG1444067
1,2-Dichloroethane	ND		1.00	1	03/14/2020 17:39	WG1444067
(S) Toluene-d8	*99.4*		*80.0-120*		*03/14/2020 17:39*	WG1444067
(S) 4-Bromofluorobenzene	*96.9*		*77.0-126*		*03/14/2020 17:39*	WG1444067
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*03/14/2020 17:39*	WG1444067

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 17:59	WG1444067
Toluene	ND		1.00	1	03/14/2020 17:59	WG1444067
Ethylbenzene	ND		1.00	1	03/14/2020 17:59	WG1444067
Total Xylenes	ND		3.00	1	03/14/2020 17:59	WG1444067
Methyl tert-butyl ether	60.5		1.00	1	03/14/2020 17:59	WG1444067
Naphthalene	ND	J0	5.00	1	03/14/2020 17:59	WG1444067
1,2-Dichloroethane	ND		1.00	1	03/14/2020 17:59	WG1444067
(S) Toluene-d8	*101*		*80.0-120*		*03/14/2020 17:59*	WG1444067
(S) 4-Bromofluorobenzene	*99.6*		*77.0-126*		*03/14/2020 17:59*	WG1444067
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*03/14/2020 17:59*	WG1444067

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 18:19	WG1444067
Toluene	ND		1.00	1	03/14/2020 18:19	WG1444067
Ethylbenzene	ND		1.00	1	03/14/2020 18:19	WG1444067
Total Xylenes	ND		3.00	1	03/14/2020 18:19	WG1444067
Methyl tert-butyl ether	ND		1.00	1	03/14/2020 18:19	WG1444067
Naphthalene	ND	J0	5.00	1	03/14/2020 18:19	WG1444067
1,2-Dichloroethane	ND		1.00	1	03/14/2020 18:19	WG1444067
(S) Toluene-d8	*99.6*		*80.0-120*		*03/14/2020 18:19*	WG1444067
(S) 4-Bromofluorobenzene	*97.6*		*77.0-126*		*03/14/2020 18:19*	WG1444067
(S) 1,2-Dichloroethane-d4	*105*		*70.0-130*		*03/14/2020 18:19*	WG1444067

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 18:39	WG1444067
Toluene	ND		1.00	1	03/14/2020 18:39	WG1444067
Ethylbenzene	ND		1.00	1	03/14/2020 18:39	WG1444067
Total Xylenes	ND		3.00	1	03/14/2020 18:39	WG1444067
Methyl tert-butyl ether	ND		1.00	1	03/14/2020 18:39	WG1444067
Naphthalene	ND	J0	5.00	1	03/14/2020 18:39	WG1444067
1,2-Dichloroethane	ND		1.00	1	03/14/2020 18:39	WG1444067
(S) Toluene-d8	*99.1*		*80.0-120*		*03/14/2020 18:39*	WG1444067
(S) 4-Bromofluorobenzene	*98.4*		*77.0-126*		*03/14/2020 18:39*	WG1444067
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*03/14/2020 18:39*	WG1444067

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 19:00	WG1444067
Toluene	ND		1.00	1	03/14/2020 19:00	WG1444067
Ethylbenzene	ND		1.00	1	03/14/2020 19:00	WG1444067
Total Xylenes	ND		3.00	1	03/14/2020 19:00	WG1444067
Methyl tert-butyl ether	ND		1.00	1	03/14/2020 19:00	WG1444067
Naphthalene	ND	J0	5.00	1	03/14/2020 19:00	WG1444067
1,2-Dichloroethane	ND		1.00	1	03/14/2020 19:00	WG1444067
(S) Toluene-d8	*98.9*		*80.0-120*		*03/14/2020 19:00*	WG1444067
(S) 4-Bromofluorobenzene	*95.7*		*77.0-126*		*03/14/2020 19:00*	WG1444067
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*03/14/2020 19:00*	WG1444067

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	110000		50000	10	03/14/2020 20:06	WG1443383

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	99.4		1.00	1	03/14/2020 19:20	WG1444067
Toluene	ND		1.00	1	03/14/2020 19:20	WG1444067
Ethylbenzene	ND		1.00	1	03/14/2020 19:20	WG1444067
Total Xylenes	9.45		3.00	1	03/14/2020 19:20	WG1444067
Methyl tert-butyl ether	98.4		1.00	1	03/14/2020 19:20	WG1444067
Naphthalene	ND	J0	5.00	1	03/14/2020 19:20	WG1444067
1,2-Dichloroethane	ND		1.00	1	03/14/2020 19:20	WG1444067
(S) Toluene-d8	*101*		*80.0-120*		*03/14/2020 19:20*	WG1444067
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*03/14/2020 19:20*	WG1444067
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*03/14/2020 19:20*	WG1444067

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	87200		50000	10	03/14/2020 20:22	WG1443383

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	46.6		1.00	1	03/14/2020 19:41	WG1444067
Toluene	ND		1.00	1	03/14/2020 19:41	WG1444067
Ethylbenzene	ND		1.00	1	03/14/2020 19:41	WG1444067
Total Xylenes	19.1		3.00	1	03/14/2020 19:41	WG1444067
Methyl tert-butyl ether	192		1.00	1	03/14/2020 19:41	WG1444067
Naphthalene	ND	J0	5.00	1	03/14/2020 19:41	WG1444067
1,2-Dichloroethane	ND		1.00	1	03/14/2020 19:41	WG1444067
(S) Toluene-d8	*100*		*80.0-120*		*03/14/2020 19:41*	WG1444067
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*03/14/2020 19:41*	WG1444067
(S) 1,2-Dichloroethane-d4	*106*		*70.0-130*		*03/14/2020 19:41*	WG1444067

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 21:56	WG1444256
Toluene	ND		1.00	1	03/14/2020 21:56	WG1444256
Ethylbenzene	ND		1.00	1	03/14/2020 21:56	WG1444256
Total Xylenes	ND		3.00	1	03/14/2020 21:56	WG1444256
Methyl tert-butyl ether	ND		1.00	1	03/14/2020 21:56	WG1444256
Naphthalene	ND		5.00	1	03/14/2020 21:56	WG1444256
1,2-Dichloroethane	ND		1.00	1	03/14/2020 21:56	WG1444256
(S) Toluene-d8	*102*		*80.0-120*		*03/14/2020 21:56*	WG1444256
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*03/14/2020 21:56*	WG1444256
(S) 1,2-Dichloroethane-d4	*109*		*70.0-130*		*03/14/2020 21:56*	WG1444256

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 22:17	WG1444256
Toluene	ND		1.00	1	03/14/2020 22:17	WG1444256
Ethylbenzene	ND		1.00	1	03/14/2020 22:17	WG1444256
Total Xylenes	ND		3.00	1	03/14/2020 22:17	WG1444256
Methyl tert-butyl ether	ND		1.00	1	03/14/2020 22:17	WG1444256
Naphthalene	ND		5.00	1	03/14/2020 22:17	WG1444256
1,2-Dichloroethane	ND		1.00	1	03/14/2020 22:17	WG1444256
(S) Toluene-d8	*97.9*		*80.0-120*		*03/14/2020 22:17*	WG1444256
(S) 4-Bromofluorobenzene	*100*		*77.0-126*		*03/14/2020 22:17*	WG1444256
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*03/14/2020 22:17*	WG1444256

Method Blank (MB)

(MB) R3508744-1 03/14/20 08:00

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Sulfate	U		77.4	5000

L1198128-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1198128-01 03/14/20 10:06 • (DUP) R3508744-3 03/14/20 10:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	22900	22900	1	0.239		15

L1198496-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1198496-16 03/14/20 20:22 • (DUP) R3508744-8 03/14/20 20:37

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	87200	86300	10	0.983		15

Laboratory Control Sample (LCS)

(LCS) R3508744-2 03/14/20 08:15

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Sulfate	40000	40200	100	80.0-120	

L1198129-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1198129-01 03/14/20 10:36 • (MS) R3508744-4 03/14/20 10:51 • (MSD) R3508744-5 03/14/20 11:07

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfate	50000	ND	55600	55700	101	101	1	80.0-120			0.137	15

L1198496-15 Original Sample (OS) • Matrix Spike (MS)

(OS) L1198496-15 03/14/20 16:30 • (MS) R3508744-6 03/14/20 16:46

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	ug/l	ug/l	ug/l	%		%	
Sulfate	50000	123000	113000	0.000	1	80.0-120	E J6

Method Blank (MB)

(MB) R3509572-2 03/14/20 11:45

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*98.3*			*80.0-120*
(S) 4-Bromofluorobenzene	*97.9*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3509572-1 03/14/20 11:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.07	101	70.0-130	
1,2-Dichloroethane	5.00	5.12	102	70.0-130	
Ethylbenzene	5.00	5.33	107	70.0-130	
Methyl tert-butyl ether	5.00	5.69	114	70.0-130	
Naphthalene	5.00	4.94	98.8	70.0-130	
Toluene	5.00	5.00	100	70.0-130	
Xylenes, Total	15.0	16.0	107	70.0-130	
(S) Toluene-d8			*98.7*	*80.0-120*	
(S) 4-Bromofluorobenzene			*100*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*103*	*70.0-130*	

Method Blank (MB)

(MB) R3509573-2 03/14/20 21:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*96.9*			*80.0-120*
(S) 4-Bromofluorobenzene	*99.2*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3509573-1 03/14/20 20:42

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.71	114	70.0-130	
1,2-Dichloroethane	5.00	5.59	112	70.0-130	
Ethylbenzene	5.00	5.75	115	70.0-130	
Methyl tert-butyl ether	5.00	5.81	116	70.0-130	
Naphthalene	5.00	4.84	96.8	70.0-130	
Toluene	5.00	5.43	109	70.0-130	
Xylenes, Total	15.0	17.4	116	70.0-130	
(S) Toluene-d8			*97.9*	*80.0-120*	
(S) 4-Bromofluorobenzene			*97.7*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*105*	*70.0-130*	

Method Blank (MB)

(MB) R3509693-2 03/17/20 22:10

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.331	1.00
Toluene	U		0.412	1.00
(S) Toluene-d8	*111*			*80.0-120*
(S) 4-Bromofluorobenzene	*105*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3509693-1 03/17/20 21:11

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Benzene	5.00	5.09	102	70.0-130	
Toluene	5.00	5.32	106	70.0-130	
(S) Toluene-d8			*111*	*80.0-120*	
(S) 4-Bromofluorobenzene			*106*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*106*	*70.0-130*	

Method Blank (MB)

(MB) R3511587-3 03/23/20 11:07

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*114*			*80.0-120*
(S) 4-Bromofluorobenzene	*99.9*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*

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

(LCS) R3511587-1 03/23/20 09:45 • (LCSD) R3511587-2 03/23/20 10:06

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	5.04	4.77	101	95.4	70.0-130			5.50	20
1,2-Dichloroethane	5.00	4.65	4.63	93.0	92.6	70.0-130			0.431	20
Ethylbenzene	5.00	4.77	4.59	95.4	91.8	70.0-130			3.85	20
Methyl tert-butyl ether	5.00	4.58	4.66	91.6	93.2	70.0-130			1.73	20
Naphthalene	5.00	5.39	6.09	108	122	70.0-130			12.2	20
Toluene	5.00	5.06	5.00	101	100	70.0-130			1.19	20
Xylenes, Total	15.0	14.7	14.5	98.0	96.7	70.0-130			1.37	20
(S) Toluene-d8				*110*	*111*	*80.0-120*				
(S) 4-Bromofluorobenzene				*104*	*105*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*106*	*105*	*70.0-130*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(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.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration met method criteria.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace National 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.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

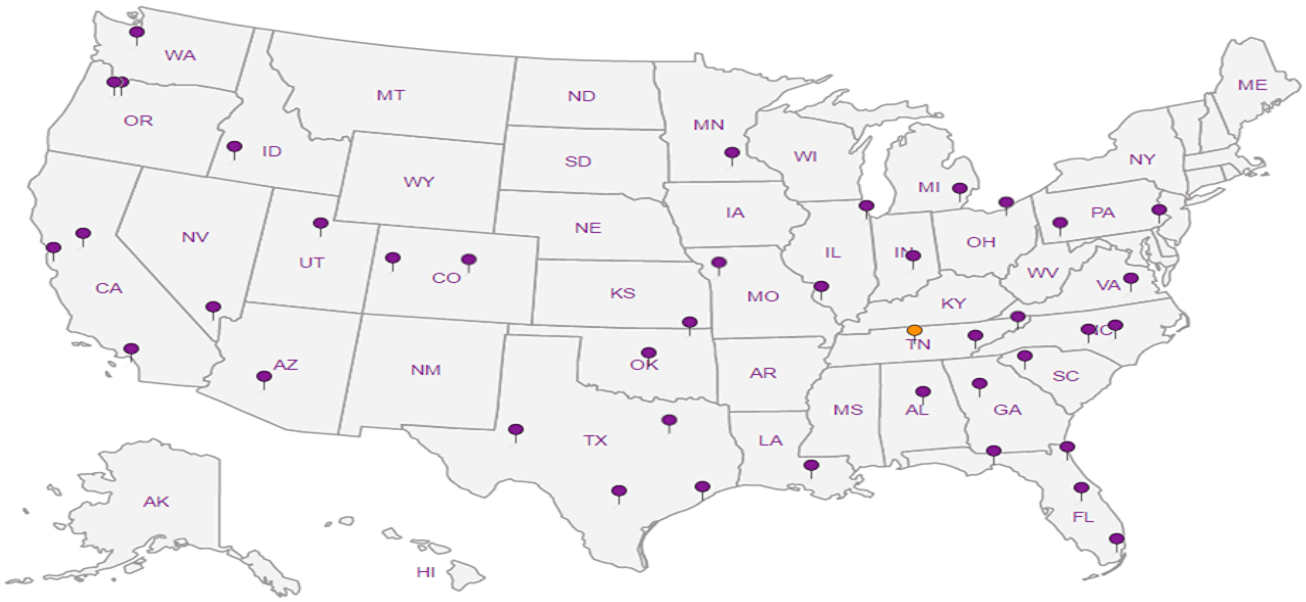
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National 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. Pace National performs all testing at our central laboratory.



Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com;tom.wiley@jacobs.co

Project Description: Lewis Drive Groundwater

City/State Collected: BELTON, SC

Please Circle: PT MT CT ET

Phone: 770-604-9182
Fax:

Client Project #: KMLDOM20
B.CS.GEN.LDOMR.GW

Lab Project #: KINCH2MGA-LEWIS12

Collected by (print): MELISSA WARREN

Site/Facility ID #: LEWIS DRIVE

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Chain of Custody Page 1 of 2

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1198496

Table #

Acctnum: KINCH2MGA

Template: T155769

Prelogin: P758897

PM: 526 - Chris McCord

PB: 3-4-2020 6m

Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NITRATE,SULFATE** 125mlHDPE-NoPres	ALK,CO2 125mlHDPE-NoPres	Methane - RSK175 40mlAmb HCl	SULFATE 125mlHDPE-NoPres	V8260BTEXMNSC 40mlAmb-HCl	V8260BTEXMNSC-TB 40mlAmb-HCl-Blk	Pres Chk	Remarks	Sample # (lab only)
MW-23-031120	GRAB	GW	NA	03/11/20	0920	3					X				-01
MW-23-D-031120		GW			0925										-02
MW-45-031120		GW			0930										-03
MW-07-031120		GW			0945									DILUTE - SHEEN	-04
MW-15B-031120		GW			1015										-05
MW-14-031120		GW			1030										-06
MW-14B-031120		GW			1035										-07
MW-13B-031120		GW			1045										-08
MW-13-031120		GW			1055										-09
MW-48B-031120		GW			1115										-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: V8260BTEXMNSC=BTEX, MTBE, Naphthalene, and 1,2-DCA.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 166357527574

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	If preservation required by Login: Date/Time
	03/11/20	1830		1	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.7 °C Bottles Received: 2.3+.2=2.5 53	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Sandy Yossuf	Date: 3/12/20 Time: 8:30	Hold: / Condition: NCF / OK

Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com;tom.wiley@jacobs.co

Project Description: Lewis Drive Groundwater

City/State Collected: BELTON, SC

Please Circle: PT MT CT ET

Phone: 770-604-9182
Fax:

Client Project #: KMLDOM20
B.CS.GEN.LDOMR.GW

Lab Project #: KINCH2MGA-LEWIS12

Collected by (print): MELISSA WARREN

Site/Facility ID #: LEWIS DRIVE

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NITRATE,SULFATE** 125mlHDPE-NoPres	ALK,CO2 125mlHDPE-NoPres	Methane - RSK175 40mlAmb HCl	SULFATE 125mlHDPE-NoPres	V8260BTEXMNSC 40mlAmb-HCl	V8260BTEXMNSC-TB 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
MW-50B-031120	GRAB	GW	NA	03/11/20	1335	3					X			-11
MW-33T-031120		GW			1350	3					X			-12
MW-31-031120		GW			1400	3					X			-13
MW-47-031120		GW			1410	3					X			-14
MW-57-031120		GW			1605	4				X	X			-15
MW-56-031120		GW			1610	4				X	X			-16
FB02-031120		GW			1730	3					X		FIELD BLANK	-17
TB02-031120		GW			—	1						X	TB	-18
		GW												
		GW												

Analysis / Container / Preservative: X X X

Chain of Custody Page 2 of 2

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1198496

Table #

Acctnum: KINCH2MGA

Template: T155769

Prelogin: P758897

PM: 526 - Chris McCord

PB: 3-4-20 20 Gm

Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: V8260BTEXMNSC=BTEX, MTBE, Naphthalene, and 1,2-DCA.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 163572757574

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: X Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	03/11/20	1630	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: (Yes) / No
HCL / MeoH
TBR

Temp: 4.7 °C Bottles Received: 53
2.3+2=2.5

Date: 3/12/20 Time: 8130

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

March 24, 2020

Kinder Morgan- Atlanta, GA

Sample Delivery Group:	L1198755
Samples Received:	03/13/2020
Project Number:	KMLDOM20 B.CS.GEN.LD
Description:	Lewis Drive Groundwater
Site:	LEWIS DRIVE
Report To:	Bethany Garvey Ten 10th Street NW Suite 1400 Atlanta, GA 30309

Entire Report Reviewed By:

Chris McCord
Project Manager

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 Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

MW-26B-031220 L1198755-01 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 08:45 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	1	03/14/20 22:37	03/14/20 22:37	JCP	Mt. Juliet, TN

MW-26-031220 L1198755-02 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 08:55 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	1	03/14/20 22:58	03/14/20 22:58	JCP	Mt. Juliet, TN

MW-23B-031220 L1198755-03 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 09:10 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	1	03/14/20 23:18	03/14/20 23:18	JCP	Mt. Juliet, TN

MW-45B-031220 L1198755-04 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 09:25 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	1	03/14/20 23:38	03/14/20 23:38	JCP	Mt. Juliet, TN

MW-21-031220 L1198755-05 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 09:45 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	1	03/14/20 23:58	03/14/20 23:58	JCP	Mt. Juliet, TN

MW-17B-031220 L1198755-06 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 10:00 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	250	03/15/20 00:19	03/15/20 00:19	JCP	Mt. Juliet, TN

MW-20-031220 L1198755-07 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 10:30 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1443982	1	03/17/20 17:37	03/17/20 17:37	DGR	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1443982	1	03/17/20 17:37	03/17/20 17:37	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1443439	1	03/13/20 18:10	03/13/20 18:10	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1445973	1	03/19/20 14:48	03/19/20 14:48	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	250	03/15/20 00:39	03/15/20 00:39	JCP	Mt. Juliet, TN

MW-19-031220 L1198755-08 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 12:30 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1443982	1	03/17/20 17:44	03/17/20 17:44	DGR	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1443982	1	03/17/20 17:44	03/17/20 17:44	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1443439	1	03/13/20 18:23	03/13/20 18:23	ELN	Mt. Juliet, TN

MW-19-031220 L1198755-08 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 12:30 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method RSK175	WG1445973	1	03/19/20 14:52	03/19/20 14:52	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	1	03/15/20 01:00	03/15/20 01:00	JCP	Mt. Juliet, TN

MW-29-031220 L1198755-09 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 12:50 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	1	03/15/20 01:20	03/15/20 01:20	JCP	Mt. Juliet, TN

MW-44-031220 L1198755-10 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 13:50 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	1	03/15/20 01:40	03/15/20 01:40	JCP	Mt. Juliet, TN

MW-44B-031220 L1198755-11 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 14:00 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	1	03/15/20 02:01	03/15/20 02:01	JCP	Mt. Juliet, TN

MW-01B-031220 L1198755-12 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 14:10 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	1	03/15/20 02:21	03/15/20 02:21	JCP	Mt. Juliet, TN

MW-01-031220 L1198755-13 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 14:20 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1443982	1	03/17/20 17:50	03/17/20 17:50	DGR	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1443982	1	03/17/20 17:50	03/17/20 17:50	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1443439	1	03/13/20 18:36	03/13/20 18:36	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1445973	1	03/19/20 14:58	03/19/20 14:58	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1449313	5	03/24/20 14:02	03/24/20 14:02	ACG	Mt. Juliet, TN

MW-27B-031220 L1198755-14 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 14:40 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	1	03/15/20 03:02	03/15/20 03:02	JCP	Mt. Juliet, TN

MW-27-031220 L1198755-15 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 14:50 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	1	03/15/20 03:22	03/15/20 03:22	JCP	Mt. Juliet, TN

MW-12B-031220 L1198755-16 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 15:00 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	1	03/15/20 03:43	03/15/20 03:43	JCP	Mt. Juliet, TN

MW-11-031220 L1198755-17 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 15:15 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1443982	1	03/17/20 17:59	03/17/20 17:59	DGR	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1443982	1	03/17/20 17:59	03/17/20 17:59	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1443439	1	03/13/20 19:02	03/13/20 19:02	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1445973	1	03/19/20 15:06	03/19/20 15:06	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	250	03/15/20 04:03	03/15/20 04:03	JCP	Mt. Juliet, TN

MW-22-031220 L1198755-18 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 15:40 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1443982	1	03/17/20 18:06	03/17/20 18:06	DGR	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1443982	1	03/17/20 18:06	03/17/20 18:06	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1443439	1	03/13/20 19:54	03/13/20 19:54	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1447377	1	03/20/20 12:40	03/20/20 12:40	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444256	1	03/15/20 04:23	03/15/20 04:23	JCP	Mt. Juliet, TN

FB03-031220 L1198755-19 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 15:55 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/14/20 23:07	03/14/20 23:07	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/19/20 23:39	03/19/20 23:39	JHH	Mt. Juliet, TN

TB03-031220 L1198755-20 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 00:00 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/14/20 22:26	03/14/20 22:26	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/19/20 22:59	03/19/20 22:59	JHH	Mt. Juliet, TN

MW-46-031220 L1198755-21 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 15:40 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1443439	1	03/13/20 20:07	03/13/20 20:07	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/14/20 23:28	03/14/20 23:28	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/20/20 00:00	03/20/20 00:00	JHH	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, 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.

Chris McCord
Project Manager

Report Revision History

Level II Report - Version 1: 03/23/20 15:58

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 22:37	WG1444256
Toluene	ND		1.00	1	03/14/2020 22:37	WG1444256
Ethylbenzene	ND		1.00	1	03/14/2020 22:37	WG1444256
Total Xylenes	ND		3.00	1	03/14/2020 22:37	WG1444256
Methyl tert-butyl ether	ND		1.00	1	03/14/2020 22:37	WG1444256
Naphthalene	ND		5.00	1	03/14/2020 22:37	WG1444256
1,2-Dichloroethane	ND		1.00	1	03/14/2020 22:37	WG1444256
(S) Toluene-d8	*99.9*		*80.0-120*		*03/14/2020 22:37*	WG1444256
(S) 4-Bromofluorobenzene	*96.9*		*77.0-126*		*03/14/2020 22:37*	WG1444256
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*03/14/2020 22:37*	WG1444256

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 22:58	WG1444256
Toluene	ND		1.00	1	03/14/2020 22:58	WG1444256
Ethylbenzene	ND		1.00	1	03/14/2020 22:58	WG1444256
Total Xylenes	ND		3.00	1	03/14/2020 22:58	WG1444256
Methyl tert-butyl ether	ND		1.00	1	03/14/2020 22:58	WG1444256
Naphthalene	ND		5.00	1	03/14/2020 22:58	WG1444256
1,2-Dichloroethane	ND		1.00	1	03/14/2020 22:58	WG1444256
(S) Toluene-d8	*97.9*		*80.0-120*		*03/14/2020 22:58*	WG1444256
(S) 4-Bromofluorobenzene	*94.2*		*77.0-126*		*03/14/2020 22:58*	WG1444256
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*03/14/2020 22:58*	WG1444256

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 23:18	WG1444256
Toluene	ND		1.00	1	03/14/2020 23:18	WG1444256
Ethylbenzene	ND		1.00	1	03/14/2020 23:18	WG1444256
Total Xylenes	ND		3.00	1	03/14/2020 23:18	WG1444256
Methyl tert-butyl ether	ND		1.00	1	03/14/2020 23:18	WG1444256
Naphthalene	ND		5.00	1	03/14/2020 23:18	WG1444256
1,2-Dichloroethane	ND		1.00	1	03/14/2020 23:18	WG1444256
(S) Toluene-d8	*97.6*		*80.0-120*		*03/14/2020 23:18*	WG1444256
(S) 4-Bromofluorobenzene	*97.4*		*77.0-126*		*03/14/2020 23:18*	WG1444256
(S) 1,2-Dichloroethane-d4	*109*		*70.0-130*		*03/14/2020 23:18*	WG1444256

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 23:38	WG1444256
Toluene	ND		1.00	1	03/14/2020 23:38	WG1444256
Ethylbenzene	ND		1.00	1	03/14/2020 23:38	WG1444256
Total Xylenes	ND		3.00	1	03/14/2020 23:38	WG1444256
Methyl tert-butyl ether	ND		1.00	1	03/14/2020 23:38	WG1444256
Naphthalene	ND		5.00	1	03/14/2020 23:38	WG1444256
1,2-Dichloroethane	ND		1.00	1	03/14/2020 23:38	WG1444256
(S) Toluene-d8	*98.9*		*80.0-120*		*03/14/2020 23:38*	WG1444256
(S) 4-Bromofluorobenzene	*97.6*		*77.0-126*		*03/14/2020 23:38*	WG1444256
(S) 1,2-Dichloroethane-d4	*106*		*70.0-130*		*03/14/2020 23:38*	WG1444256

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 23:58	WG1444256
Toluene	ND		1.00	1	03/14/2020 23:58	WG1444256
Ethylbenzene	ND		1.00	1	03/14/2020 23:58	WG1444256
Total Xylenes	ND		3.00	1	03/14/2020 23:58	WG1444256
Methyl tert-butyl ether	2.77		1.00	1	03/14/2020 23:58	WG1444256
Naphthalene	ND		5.00	1	03/14/2020 23:58	WG1444256
1,2-Dichloroethane	ND		1.00	1	03/14/2020 23:58	WG1444256
(S) Toluene-d8	*100*		*80.0-120*		*03/14/2020 23:58*	WG1444256
(S) 4-Bromofluorobenzene	*98.3*		*77.0-126*		*03/14/2020 23:58*	WG1444256
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*03/14/2020 23:58*	WG1444256

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	6600		250	250	03/15/2020 00:19	WG1444256
Toluene	12800		250	250	03/15/2020 00:19	WG1444256
Ethylbenzene	1230		250	250	03/15/2020 00:19	WG1444256
Total Xylenes	8550		3.00	250	03/15/2020 00:19	WG1444256
Methyl tert-butyl ether	417		250	250	03/15/2020 00:19	WG1444256
Naphthalene	ND		1250	250	03/15/2020 00:19	WG1444256
1,2-Dichloroethane	ND		250	250	03/15/2020 00:19	WG1444256
(S) Toluene-d8	*102*		*80.0-120*		*03/15/2020 00:19*	WG1444256
(S) 4-Bromofluorobenzene	*99.7*		*77.0-126*		*03/15/2020 00:19*	WG1444256
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*03/15/2020 00:19*	WG1444256

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	50200		20000	1	03/17/2020 17:37	WG1443982

Sample Narrative:
L1198755-07 WG1443982: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Free Carbon Dioxide	73900	T8	20000	1	03/17/2020 17:37	WG1443982

Sample Narrative:
L1198755-07 WG1443982: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Nitrate as (N)	ND		100	1	03/13/2020 18:10	WG1443439
Sulfate	ND		5000	1	03/13/2020 18:10	WG1443439

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	4120		10.0	1	03/19/2020 14:48	WG1445973

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	6790		250	250	03/15/2020 00:39	WG1444256
Toluene	20100		250	250	03/15/2020 00:39	WG1444256
Ethylbenzene	1360		250	250	03/15/2020 00:39	WG1444256
Total Xylenes	9680		3.00	250	03/15/2020 00:39	WG1444256
Methyl tert-butyl ether	ND		250	250	03/15/2020 00:39	WG1444256
Naphthalene	ND		1250	250	03/15/2020 00:39	WG1444256
1,2-Dichloroethane	ND		250	250	03/15/2020 00:39	WG1444256
(S) Toluene-d8	*100*		*80.0-120*		*03/15/2020 00:39*	WG1444256
(S) 4-Bromofluorobenzene	*97.5*		*77.0-126*		*03/15/2020 00:39*	WG1444256
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*03/15/2020 00:39*	WG1444256

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	ND		20000	1	03/17/2020 17:44	WG1443982

Sample Narrative:
L1198755-08 WG1443982: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Free Carbon Dioxide	ND	T8	20000	1	03/17/2020 17:44	WG1443982

Sample Narrative:
L1198755-08 WG1443982: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Nitrate as (N)	ND		100	1	03/13/2020 18:23	WG1443439
Sulfate	12100		5000	1	03/13/2020 18:23	WG1443439

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	03/19/2020 14:52	WG1445973

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/15/2020 01:00	WG1444256
Toluene	ND		1.00	1	03/15/2020 01:00	WG1444256
Ethylbenzene	ND		1.00	1	03/15/2020 01:00	WG1444256
Total Xylenes	35.1		3.00	1	03/15/2020 01:00	WG1444256
Methyl tert-butyl ether	ND		1.00	1	03/15/2020 01:00	WG1444256
Naphthalene	68.4		5.00	1	03/15/2020 01:00	WG1444256
1,2-Dichloroethane	ND		1.00	1	03/15/2020 01:00	WG1444256
(S) Toluene-d8	*95.6*		*80.0-120*		*03/15/2020 01:00*	WG1444256
(S) 4-Bromofluorobenzene	*106*		*77.0-126*		*03/15/2020 01:00*	WG1444256
(S) 1,2-Dichloroethane-d4	*108*		*70.0-130*		*03/15/2020 01:00*	WG1444256

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/15/2020 01:20	WG1444256
Toluene	ND		1.00	1	03/15/2020 01:20	WG1444256
Ethylbenzene	ND		1.00	1	03/15/2020 01:20	WG1444256
Total Xylenes	ND		3.00	1	03/15/2020 01:20	WG1444256
Methyl tert-butyl ether	ND		1.00	1	03/15/2020 01:20	WG1444256
Naphthalene	5.11		5.00	1	03/15/2020 01:20	WG1444256
1,2-Dichloroethane	ND		1.00	1	03/15/2020 01:20	WG1444256
(S) Toluene-d8	*99.1*		*80.0-120*		*03/15/2020 01:20*	WG1444256
(S) 4-Bromofluorobenzene	*96.6*		*77.0-126*		*03/15/2020 01:20*	WG1444256
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*03/15/2020 01:20*	WG1444256

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/15/2020 01:40	WG1444256
Toluene	ND		1.00	1	03/15/2020 01:40	WG1444256
Ethylbenzene	ND		1.00	1	03/15/2020 01:40	WG1444256
Total Xylenes	ND		3.00	1	03/15/2020 01:40	WG1444256
Methyl tert-butyl ether	ND		1.00	1	03/15/2020 01:40	WG1444256
Naphthalene	ND		5.00	1	03/15/2020 01:40	WG1444256
1,2-Dichloroethane	ND		1.00	1	03/15/2020 01:40	WG1444256
(S) Toluene-d8	*101*		*80.0-120*		*03/15/2020 01:40*	WG1444256
(S) 4-Bromofluorobenzene	*98.3*		*77.0-126*		*03/15/2020 01:40*	WG1444256
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*03/15/2020 01:40*	WG1444256

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/15/2020 02:01	WG1444256
Toluene	ND		1.00	1	03/15/2020 02:01	WG1444256
Ethylbenzene	ND		1.00	1	03/15/2020 02:01	WG1444256
Total Xylenes	ND		3.00	1	03/15/2020 02:01	WG1444256
Methyl tert-butyl ether	ND		1.00	1	03/15/2020 02:01	WG1444256
Naphthalene	ND		5.00	1	03/15/2020 02:01	WG1444256
1,2-Dichloroethane	ND		1.00	1	03/15/2020 02:01	WG1444256
(S) Toluene-d8	*98.7*		*80.0-120*		*03/15/2020 02:01*	WG1444256
(S) 4-Bromofluorobenzene	*100*		*77.0-126*		*03/15/2020 02:01*	WG1444256
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*03/15/2020 02:01*	WG1444256

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	5.76		1.00	1	03/15/2020 02:21	WG1444256
Toluene	ND		1.00	1	03/15/2020 02:21	WG1444256
Ethylbenzene	ND		1.00	1	03/15/2020 02:21	WG1444256
Total Xylenes	ND		3.00	1	03/15/2020 02:21	WG1444256
Methyl tert-butyl ether	1.12		1.00	1	03/15/2020 02:21	WG1444256
Naphthalene	ND		5.00	1	03/15/2020 02:21	WG1444256
1,2-Dichloroethane	ND		1.00	1	03/15/2020 02:21	WG1444256
(S) Toluene-d8	*99.5*		*80.0-120*		*03/15/2020 02:21*	WG1444256
(S) 4-Bromofluorobenzene	*96.5*		*77.0-126*		*03/15/2020 02:21*	WG1444256
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*03/15/2020 02:21*	WG1444256

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	ND		20000	1	03/17/2020 17:50	WG1443982

Sample Narrative:
L1198755-13 WG1443982: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Free Carbon Dioxide	25000	T8	20000	1	03/17/2020 17:50	WG1443982

Sample Narrative:
L1198755-13 WG1443982: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Nitrate as (N)	ND		100	1	03/13/2020 18:36	WG1443439
Sulfate	ND		5000	1	03/13/2020 18:36	WG1443439

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	03/19/2020 14:58	WG1445973

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		5.00	5	03/24/2020 14:02	WG1449313
Toluene	ND		5.00	5	03/24/2020 14:02	WG1449313
Ethylbenzene	ND		5.00	5	03/24/2020 14:02	WG1449313
Total Xylenes	ND		15.0	5	03/24/2020 14:02	WG1449313
Methyl tert-butyl ether	ND		5.00	5	03/24/2020 14:02	WG1449313
Naphthalene	ND		25.0	5	03/24/2020 14:02	WG1449313
1,2-Dichloroethane	ND		5.00	5	03/24/2020 14:02	WG1449313
(S) Toluene-d8	*104*		*80.0-120*		*03/24/2020 14:02*	WG1449313
(S) 4-Bromofluorobenzene	*88.7*		*77.0-126*		*03/24/2020 14:02*	WG1449313
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*03/24/2020 14:02*	WG1449313

Sample Narrative:
L1198755-13 WG1449313: Non-target compounds too high to run at a lower dilution.

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/15/2020 03:02	WG1444256
Toluene	3.03		1.00	1	03/15/2020 03:02	WG1444256
Ethylbenzene	1.67		1.00	1	03/15/2020 03:02	WG1444256
Total Xylenes	13.1		3.00	1	03/15/2020 03:02	WG1444256
Methyl tert-butyl ether	ND		1.00	1	03/15/2020 03:02	WG1444256
Naphthalene	ND		5.00	1	03/15/2020 03:02	WG1444256
1,2-Dichloroethane	ND		1.00	1	03/15/2020 03:02	WG1444256
(S) Toluene-d8	*99.7*		*80.0-120*		*03/15/2020 03:02*	WG1444256
(S) 4-Bromofluorobenzene	*96.1*		*77.0-126*		*03/15/2020 03:02*	WG1444256
(S) 1,2-Dichloroethane-d4	*105*		*70.0-130*		*03/15/2020 03:02*	WG1444256

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/15/2020 03:22	WG1444256
Toluene	ND		1.00	1	03/15/2020 03:22	WG1444256
Ethylbenzene	ND		1.00	1	03/15/2020 03:22	WG1444256
Total Xylenes	ND		3.00	1	03/15/2020 03:22	WG1444256
Methyl tert-butyl ether	ND		1.00	1	03/15/2020 03:22	WG1444256
Naphthalene	ND		5.00	1	03/15/2020 03:22	WG1444256
1,2-Dichloroethane	ND		1.00	1	03/15/2020 03:22	WG1444256
(S) Toluene-d8	*98.8*		*80.0-120*		*03/15/2020 03:22*	WG1444256
(S) 4-Bromofluorobenzene	*103*		*77.0-126*		*03/15/2020 03:22*	WG1444256
(S) 1,2-Dichloroethane-d4	*106*		*70.0-130*		*03/15/2020 03:22*	WG1444256

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	22.6		1.00	1	03/15/2020 03:43	WG1444256
Toluene	1.27		1.00	1	03/15/2020 03:43	WG1444256
Ethylbenzene	ND		1.00	1	03/15/2020 03:43	WG1444256
Total Xylenes	6.05		3.00	1	03/15/2020 03:43	WG1444256
Methyl tert-butyl ether	ND		1.00	1	03/15/2020 03:43	WG1444256
Naphthalene	8.14		5.00	1	03/15/2020 03:43	WG1444256
1,2-Dichloroethane	ND		1.00	1	03/15/2020 03:43	WG1444256
(S) Toluene-d8	*99.1*		*80.0-120*		*03/15/2020 03:43*	WG1444256
(S) 4-Bromofluorobenzene	*94.9*		*77.0-126*		*03/15/2020 03:43*	WG1444256
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*03/15/2020 03:43*	WG1444256

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	38500	B	20000	1	03/17/2020 17:59	WG1443982

Sample Narrative:
L1198755-17 WG1443982: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Free Carbon Dioxide	46000	T8	20000	1	03/17/2020 17:59	WG1443982

Sample Narrative:
L1198755-17 WG1443982: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Nitrate as (N)	ND		100	1	03/13/2020 19:02	WG1443439
Sulfate	ND		5000	1	03/13/2020 19:02	WG1443439

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	37.0		10.0	1	03/19/2020 15:06	WG1445973

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	6220		250	250	03/15/2020 04:03	WG1444256
Toluene	31700		250	250	03/15/2020 04:03	WG1444256
Ethylbenzene	2790		250	250	03/15/2020 04:03	WG1444256
Total Xylenes	16000		3.00	250	03/15/2020 04:03	WG1444256
Methyl tert-butyl ether	ND		250	250	03/15/2020 04:03	WG1444256
Naphthalene	ND		1250	250	03/15/2020 04:03	WG1444256
1,2-Dichloroethane	ND		250	250	03/15/2020 04:03	WG1444256
(S) Toluene-d8	*96.5*		*80.0-120*		*03/15/2020 04:03*	WG1444256
(S) 4-Bromofluorobenzene	*95.6*		*77.0-126*		*03/15/2020 04:03*	WG1444256
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*03/15/2020 04:03*	WG1444256

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20000	1	03/17/2020 18:06	WG1443982

Sample Narrative:
L1198755-18 WG1443982: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Free Carbon Dioxide	ND	T8	20000	1	03/17/2020 18:06	WG1443982

Sample Narrative:
L1198755-18 WG1443982: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Nitrate as (N)	5330		100	1	03/13/2020 19:54	WG1443439
Sulfate	53800		5000	1	03/13/2020 19:54	WG1443439

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	03/20/2020 12:40	WG1447377

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	03/15/2020 04:23	WG1444256
Toluene	ND		1.00	1	03/15/2020 04:23	WG1444256
Ethylbenzene	ND		1.00	1	03/15/2020 04:23	WG1444256
Total Xylenes	ND		3.00	1	03/15/2020 04:23	WG1444256
Methyl tert-butyl ether	ND		1.00	1	03/15/2020 04:23	WG1444256
Naphthalene	ND		5.00	1	03/15/2020 04:23	WG1444256
1,2-Dichloroethane	ND		1.00	1	03/15/2020 04:23	WG1444256
(S) Toluene-d8	*99.1*		*80.0-120*		*03/15/2020 04:23*	WG1444256
(S) 4-Bromofluorobenzene	*94.8*		*77.0-126*		*03/15/2020 04:23*	WG1444256
(S) 1,2-Dichloroethane-d4	*105*		*70.0-130*		*03/15/2020 04:23*	WG1444256

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 23:07	WG1444259
Toluene	ND		1.00	1	03/14/2020 23:07	WG1444259
Ethylbenzene	ND		1.00	1	03/14/2020 23:07	WG1444259
Total Xylenes	ND		3.00	1	03/14/2020 23:07	WG1444259
Methyl tert-butyl ether	ND		1.00	1	03/14/2020 23:07	WG1444259
Naphthalene	ND		5.00	1	03/19/2020 23:39	WG1446546
1,2-Dichloroethane	ND		1.00	1	03/14/2020 23:07	WG1444259
(S) Toluene-d8	*105*		*80.0-120*		*03/14/2020 23:07*	WG1444259
(S) Toluene-d8	*110*		*80.0-120*		*03/19/2020 23:39*	WG1446546
(S) 4-Bromofluorobenzene	*94.6*		*77.0-126*		*03/14/2020 23:07*	WG1444259
(S) 4-Bromofluorobenzene	*107*		*77.0-126*		*03/19/2020 23:39*	WG1446546
(S) 1,2-Dichloroethane-d4	*114*		*70.0-130*		*03/14/2020 23:07*	WG1444259
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*03/19/2020 23:39*	WG1446546

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 22:26	WG1444259
Toluene	ND		1.00	1	03/14/2020 22:26	WG1444259
Ethylbenzene	ND		1.00	1	03/14/2020 22:26	WG1444259
Total Xylenes	ND		3.00	1	03/14/2020 22:26	WG1444259
Methyl tert-butyl ether	ND		1.00	1	03/14/2020 22:26	WG1444259
Naphthalene	ND		5.00	1	03/19/2020 22:59	WG1446546
1,2-Dichloroethane	ND		1.00	1	03/14/2020 22:26	WG1444259
(S) Toluene-d8	*106*		*80.0-120*		*03/14/2020 22:26*	WG1444259
(S) Toluene-d8	*107*		*80.0-120*		*03/19/2020 22:59*	WG1446546
(S) 4-Bromofluorobenzene	*94.7*		*77.0-126*		*03/14/2020 22:26*	WG1444259
(S) 4-Bromofluorobenzene	*106*		*77.0-126*		*03/19/2020 22:59*	WG1446546
(S) 1,2-Dichloroethane-d4	*117*		*70.0-130*		*03/14/2020 22:26*	WG1444259
(S) 1,2-Dichloroethane-d4	*108*		*70.0-130*		*03/19/2020 22:59*	WG1446546

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	ND		5000	1	03/13/2020 20:07	WG1443439

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 23:28	WG1444259
Toluene	ND		1.00	1	03/14/2020 23:28	WG1444259
Ethylbenzene	ND		1.00	1	03/14/2020 23:28	WG1444259
Total Xylenes	ND		3.00	1	03/14/2020 23:28	WG1444259
Methyl tert-butyl ether	161		1.00	1	03/14/2020 23:28	WG1444259
Naphthalene	ND		5.00	1	03/20/2020 00:00	WG1446546
1,2-Dichloroethane	ND		1.00	1	03/14/2020 23:28	WG1444259
(S) Toluene-d8	*106*		*80.0-120*		*03/14/2020 23:28*	WG1444259
(S) Toluene-d8	*116*		*80.0-120*		*03/20/2020 00:00*	WG1446546
(S) 4-Bromofluorobenzene	*95.4*		*77.0-126*		*03/14/2020 23:28*	WG1444259
(S) 4-Bromofluorobenzene	*105*		*77.0-126*		*03/20/2020 00:00*	WG1446546
(S) 1,2-Dichloroethane-d4	*109*		*70.0-130*		*03/14/2020 23:28*	WG1444259
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*03/20/2020 00:00*	WG1446546

Method Blank (MB)

(MB) R3509582-1 03/17/20 14:40

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	4000	J	2710	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1198700-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1198700-01 03/17/20 16:01 • (DUP) R3509582-3 03/17/20 16:09

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	21000	21100	1	0.424		20

Sample Narrative:
OS: Endpoint pH 4.5 HEADSPACE
DUP: Endpoint pH 4.5

L1198775-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1198775-03 03/17/20 18:34 • (DUP) R3509582-6 03/17/20 18:40

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	24000	23900	1	0.0499		20

Sample Narrative:
OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3509582-5 03/17/20 16:54

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	99600	99.6	85.0-115	

Sample Narrative:
LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3509582-2 03/17/20 14:40

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Free Carbon Dioxide	U		6670	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1198700-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1198700-01 03/17/20 16:01 • (DUP) R3509582-4 03/17/20 16:09

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Free Carbon Dioxide	47000	45000	1	4.32		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

L1198775-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1198775-03 03/17/20 18:34 • (DUP) R3509582-7 03/17/20 18:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Free Carbon Dioxide	53000	54900	1	3.61		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Method Blank (MB)

(MB) R3508682-1 03/13/20 09:45

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Nitrate	U		22.7	100
Sulfate	300	J	77.4	5000

L1198729-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1198729-01 03/13/20 15:07 • (DUP) R3508682-3 03/13/20 15:20

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate	ND	343	1	22.3	P1	15
Sulfate		442	1	9.10	J	15

L1198755-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1198755-13 03/13/20 18:36 • (DUP) R3508682-6 03/13/20 18:49

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate	ND	29.1	1	0.000		15
Sulfate	ND	1480	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3508682-2 03/13/20 09:58

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate	8000	8230	103	80.0-120	
Sulfate	40000	40500	101	80.0-120	

L1198729-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1198729-02 03/13/20 15:33 • (MS) R3508682-4 03/13/20 15:46 • (MSD) R3508682-5 03/13/20 15:59

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Nitrate	5000	ND	5690	5690	105	105	1	80.0-120			0.0299	15
Sulfate	50000		54200	54100	103	102	1	80.0-120			0.219	15

L1198755-17 Original Sample (OS) • Matrix Spike (MS)

(OS) L1198755-17 03/13/20 19:02 • (MS) R3508682-7 03/13/20 19:15

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate	5000	ND	4940	98.8	1	80.0-120	
Sulfate	50000	ND	54000	102	1	80.0-120	

Method Blank (MB)

(MB) R3510457-2 03/19/20 14:34

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		2.91	10.0

L1198775-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1198775-01 03/19/20 15:12 • (DUP) R3510457-3 03/19/20 15:48

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3510457-1 03/19/20 14:29

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Methane	67.8	66.7	98.4	85.0-115	

Method Blank (MB)

(MB) R3510736-2 03/20/20 12:37

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		2.91	10.0

L1199158-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1199158-09 03/20/20 13:16 • (DUP) R3510736-3 03/20/20 13:18

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3510736-1 03/20/20 12:34

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Methane	67.8	63.1	93.1	85.0-115	

Method Blank (MB)

(MB) R3509573-2 03/14/20 21:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*96.9*			*80.0-120*
(S) 4-Bromofluorobenzene	*99.2*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3509573-1 03/14/20 20:42

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.71	114	70.0-130	
1,2-Dichloroethane	5.00	5.59	112	70.0-130	
Ethylbenzene	5.00	5.75	115	70.0-130	
Methyl tert-butyl ether	5.00	5.81	116	70.0-130	
Naphthalene	5.00	4.84	96.8	70.0-130	
Toluene	5.00	5.43	109	70.0-130	
Xylenes, Total	15.0	17.4	116	70.0-130	
(S) Toluene-d8			*97.9*	*80.0-120*	
(S) 4-Bromofluorobenzene			*97.7*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*105*	*70.0-130*	

Method Blank (MB)

(MB) R3510042-2 03/14/20 21:53

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*103*			*80.0-120*
(S) 4-Bromofluorobenzene	*94.3*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*116*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3510042-1 03/14/20 21:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.36	107	70.0-130	
1,2-Dichloroethane	5.00	5.11	102	70.0-130	
Ethylbenzene	5.00	4.73	94.6	70.0-130	
Methyl tert-butyl ether	5.00	5.72	114	70.0-130	
Toluene	5.00	4.98	99.6	70.0-130	
Xylenes, Total	15.0	14.6	97.3	70.0-130	
(S) Toluene-d8			*105*	*80.0-120*	
(S) 4-Bromofluorobenzene			*98.4*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*113*	*70.0-130*	

Method Blank (MB)

(MB) R3510838-2 03/19/20 22:13

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Naphthalene	U		1.00	5.00
(S) Toluene-d8	*117*			*80.0-120*
(S) 4-Bromofluorobenzene	*103*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3510838-1 03/19/20 20:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Naphthalene	5.00	4.93	98.6	70.0-130	
(S) Toluene-d8			*115*	*80.0-120*	
(S) 4-Bromofluorobenzene			*108*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*103*	*70.0-130*	

Method Blank (MB)

(MB) R3511899-2 03/24/20 10:02

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*114*			*80.0-120*
(S) 4-Bromofluorobenzene	*104*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*

Method Blank (MB)

(MB) R3511964-2 03/24/20 13:03

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*104*			*80.0-120*
(S) 4-Bromofluorobenzene	*84.3*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3511899-3 03/24/20 10:43

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	4.92	98.4	70.0-130	
1,2-Dichloroethane	5.00	4.66	93.2	70.0-130	
Ethylbenzene	5.00	4.75	95.0	70.0-130	
Methyl tert-butyl ether	5.00	4.75	95.0	70.0-130	
Naphthalene	5.00	5.48	110	70.0-130	
Toluene	5.00	4.99	99.8	70.0-130	
Xylenes, Total	15.0	14.6	97.3	70.0-130	

Laboratory Control Sample (LCS)

(LCS) R3511899-3 03/24/20 10:43

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) Toluene-d8			*108*	*80.0-120*	
(S) 4-Bromofluorobenzene			*101*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*105*	*70.0-130*	

Laboratory Control Sample (LCS)

(LCS) R3511964-1 03/24/20 12:22

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.41	108	70.0-130	
1,2-Dichloroethane	5.00	5.61	112	70.0-130	
Ethylbenzene	5.00	5.19	104	70.0-130	
Methyl tert-butyl ether	5.00	4.98	99.6	70.0-130	
Naphthalene	5.00	5.27	105	70.0-130	
Toluene	5.00	5.38	108	70.0-130	
Xylenes, Total	15.0	16.5	110	70.0-130	
(S) Toluene-d8			*103*	*80.0-120*	
(S) 4-Bromofluorobenzene			*87.5*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*107*	*70.0-130*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(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.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.

Pace National 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.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

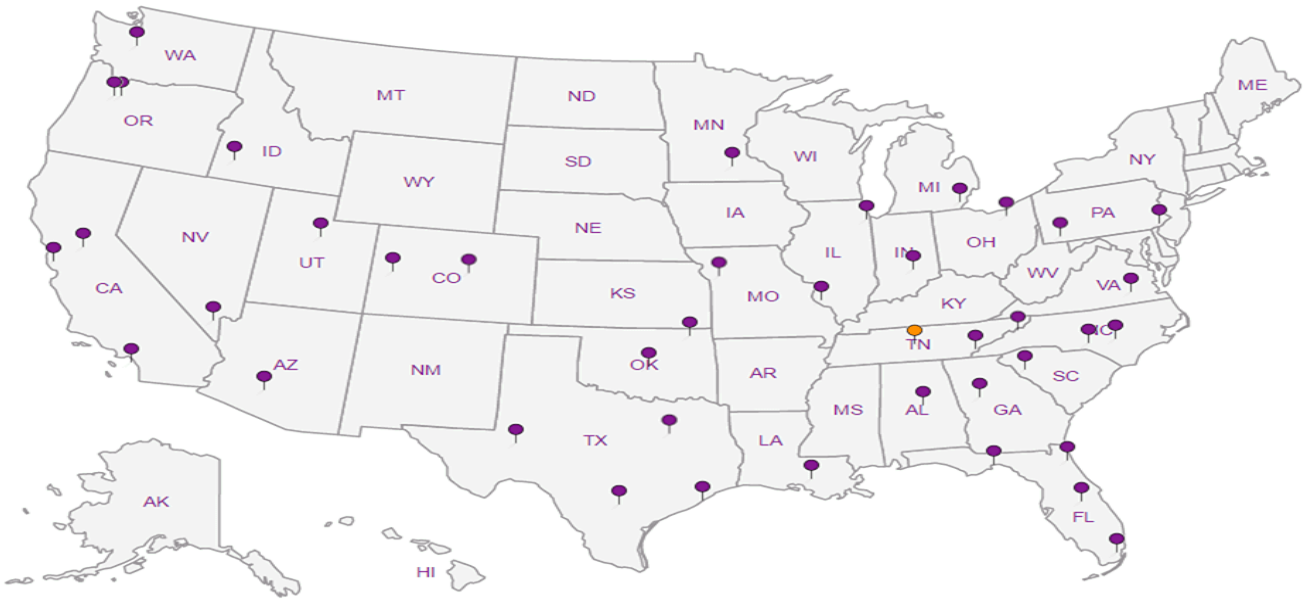
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National 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. Pace National performs all testing at our central laboratory.



Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com;tom.wiley@jacobs.co

Project Description: Lewis Drive Groundwater

City/State Collected: BELTON, SC

Please Circle: PT MT CT ET

Phone: 770-604-9182
Fax:

Client Project # KMLDOM20
B.GS.GEN.LDOMR.GW

Lab Project # KINCH2MGA-LEWIS12

Collected by (print): MELISSA WARREN

Site/Facility ID # LEWIS DRIVE

P.O. #

Collected by (signature): Melissa Warren

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NITRATE,SULFATE** 125mlHDPE-NoPres	ALK,CO2 125mlHDPE-NoPres	Methane - RSK175 40mlAmb HCl	SULFATE 125mlHDPE-NoPres	V8260BTEXMNSC 40mlAmb-HCl	V8260BTEXMNSC-TB 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
MW-26B-031220	GRAB	GW	NA	03/12/20	0845	3					X			-01
MW-26-031220		GW			0855	3					X			-02
MW-23B-031220		GW			0910	3					X			-03
MW-45B-031220		GW			0925	3					X			-04
MW-21-031220		GW			0945	3					X			-05
MW-17B-031220		GW			1000	3					X			-06
MW-20-031220		GW			1030	7	X	X	X		X			-07
MW-19-031220		GW			1230	7	X	X	X		X			-08
MW-29-031220		GW			1250	3					X			-09
MW-44-031220	↓	GW	↓	↓	1350	3					X			-10

Chain of Custody Page 1 of 3

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1198755

Table F005

Acctnum: KINCH2MGA

Template: T155769

Prelogin: P758897

PM: 526 - Chris McCord

PB: 3-4-2020 GM

Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:V8260BTEXMNSC=BTEX, MTBE, Naphthalene, and 1,2-DCA.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 1663 5752 7600

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

	Date:	Time:		
Relinquished by : (Signature) Melissa Warren	03/12/20	1830	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)			Received by: (Signature)	Temp: 4.6 °C 1.6+0=1.6 Bottles Received: 78
Relinquished by : (Signature)			Received for lab by: (Signature) L. Webster	Date: 3/13/20 Time: 08:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: **Bethany Garvey**

Email To: bethany.garvey@jacobs.com;tom.wiley@jacobs.co

Project Description: **Lewis Drive Groundwater**

City/State Collected: BELTON, SC

Please Circle: PT MT CT ET

Phone: **770-604-9182**
Fax:

Client Project #: KMLDOM20
B,CS,GEN,LDOMR,GW

Lab Project #: **KINCH2MGA-LEWIS12**

Collected by (print): MELISSA WARREN

Site/Facility ID #: LEWIS DRIVE

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y Y

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Chain of Custody Page 2 of 3

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1198755

Table #

Acctnum: **KINCH2MGA**
Template: **T155769**
Prelogin: **P758897**
PM: **526 - Chris McCord**
PB: 3-4-2020

Shipped Via: **FedEX Ground**

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NITRATE,SULFATE** 125mlHDPE-NoPres	ALK,CO2 125mlHDPE-NoPres	Methane - RSK175 40mlAmb HCl	SULFATE 125mlHDPE-NoPres	V8260BTEXMNSC 40mlAmb-HCl	V8260BTEXMNSC-TB 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
MW-44B-031220	GRAB	GW	NA	03/12/20	1400	3					X			-11
MW-01B-031220		GW			1410	3					X			-12
MW-01-031220		GW			1420	7	X	X	X		X			-13
MW-27B-031220		GW			1440	3					X			-14
MW-27-031220		GW			1450	3					X			-15
MW-12B-031220		GW			1500	3					X			-16
MW-11-031220		GW			1515	7	X	X	X		X			-17
MW-22-031220		GW			1540	7	X	X	X		X			-18
FB03-031220		GW			1555	3					X			-19
TB03-031220		GW			—	1						X		-20

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:V8260BTEXMNSC=BTEX, MTBE, Naphthalene, and 1,2-DCA.

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 166355752 7500

Sample Receipt Checklist
COC Seal Present/Intact: __NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	03/12/20	1630	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			L. Webster

Trip Blank Received: Yes / No
HCl / MeoH
TBR

Temp: 4.6 °C
1.6±0=1.6

Bottles Received: 78

Date: 3/13/20 Time: 08:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com;tom.wiley@jacobs.co

Project Description: Lewis Drive Groundwater

City/State Collected: BELTON, SC

Please Circle: PT MT CT ET

Phone: 770-604-9182
Fax:

Client Project #: KMLDOM20
B,CS,GEN,LDOMR,GW

Lab Project #: KINCH2MGA-LEWIS12

Collected by (print): MELISSA WARNER

Site/Facility ID #: LEWIS DRIVE

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NITRATE,SULFATE** 125mlHDPE-NoPres	ALK,CO2 125mlHDPE-NoPres	Methane - RSK175 40mlAmb HCl	SULFATE 125mlHDPE-NoPres	V8260BTEXMNSC 40mlAmb-HCl	V8260BTEXMNSC-TB 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
MW-46-031220	GRAB	GW	N/A	03/12/20	1540	4				X	X			-21
		GW												
		GW												
		GW												
		GW												
		GW												
		GW												
		GW												
		GW												
		GW												

Analysis / Container / Preservative

Chain of Custody Page 3 of 3

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1198755

Table #

Acctnum: KINCH2MGA

Template: T155769

Prelogin: P758897

PM: 526 - Chris McCord

PB: 3-4-2020

Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: V8260BTEXMNSC=BTEX, MTBE, Naphthalene, and 1,2-DCA.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 1663 5752 7500

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	03/12/20	1630	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			J. White

Trip Blank Received: Yes / No
HCl / MeoH
TBR

Temp: 0.1 °C Bottles Received: 18
1.6+0=9.6

If preservation required by Login: Date/Time

Date: 3/13/20 Time: 08:45

Hold:

Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

March 24, 2020

Kinder Morgan- Atlanta, GA

Sample Delivery Group:	L1199158
Samples Received:	03/14/2020
Project Number:	KMLDOM20 B.CS.GEN.LD
Description:	Lewis Drive Groundwater

Report To: Bethany Garvey
Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Entire Report Reviewed By:

Chris McCord
Project Manager

MW-09B-031320 L1199158-01 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 11:15 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444905	1	03/16/20 18:03	03/16/20 18:03	JHH	Mt. Juliet, TN

MW-36-031320 L1199158-02 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 08:35 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444905	1	03/16/20 18:22	03/16/20 18:22	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1448481	10	03/22/20 21:41	03/22/20 21:41	ACG	Mt. Juliet, TN

MW-36-D-031320 L1199158-03 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 08:40 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444905	5	03/16/20 18:41	03/16/20 18:41	JHH	Mt. Juliet, TN

MW-17-031320 L1199158-04 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 09:05 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1448532	1	03/22/20 17:30	03/22/20 17:30	ACG	Mt. Juliet, TN

MW-30-031320 L1199158-05 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 09:35 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 00:16	03/17/20 00:16	TJJ	Mt. Juliet, TN

MW-03-031320 L1199158-06 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 09:50 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1444622	1	03/16/20 15:18	03/16/20 15:18	GB	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1444622	1	03/16/20 15:18	03/16/20 15:18	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1444010	1	03/14/20 12:02	03/14/20 12:02	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1447377	1	03/20/20 13:00	03/20/20 13:00	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 00:37	03/17/20 00:37	TJJ	Mt. Juliet, TN

MW-32-031320 L1199158-07 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 10:05 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1444622	1	03/16/20 15:26	03/16/20 15:26	GB	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1444622	1	03/16/20 15:26	03/16/20 15:26	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1444010	1	03/14/20 12:19	03/14/20 12:19	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1447377	1	03/20/20 13:02	03/20/20 13:02	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 00:57	03/17/20 00:57	TJJ	Mt. Juliet, TN

MW-04-031320 L1199158-08 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 10:30 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1444622	1	03/16/20 15:33	03/16/20 15:33	GB	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1444622	1	03/16/20 15:33	03/16/20 15:33	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1444010	1	03/14/20 12:37	03/14/20 12:37	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1447377	1	03/20/20 13:04	03/20/20 13:04	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 01:17	03/17/20 01:17	TJJ	Mt. Juliet, TN

MW-02-031320 L1199158-09 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 10:45 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1444622	1	03/16/20 15:40	03/16/20 15:40	GB	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1444622	1	03/16/20 15:40	03/16/20 15:40	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1444010	1	03/14/20 13:13	03/14/20 13:13	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1447377	1	03/20/20 13:16	03/20/20 13:16	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 01:38	03/17/20 01:38	TJJ	Mt. Juliet, TN

MW-02B-031320 L1199158-10 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 10:55 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 01:58	03/17/20 01:58	TJJ	Mt. Juliet, TN

MW-09-031320 L1199158-11 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 11:20 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1444622	1	03/16/20 15:45	03/16/20 15:45	GB	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1444622	1	03/16/20 15:45	03/16/20 15:45	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1444010	1	03/14/20 13:49	03/14/20 13:49	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1447377	1	03/20/20 13:21	03/20/20 13:21	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 02:19	03/17/20 02:19	TJJ	Mt. Juliet, TN

MW-05-D-031320 L1199158-12 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 11:45 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 02:39	03/17/20 02:39	TJJ	Mt. Juliet, TN

MW-06-031320 L1199158-13 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 11:50 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 02:59	03/17/20 02:59	TJJ	Mt. Juliet, TN

MW-06B-031320 L1199158-14 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 11:55 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 03:20	03/17/20 03:20	TJJ	Mt. Juliet, TN

MW-10-031320 L1199158-15 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 12:40 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1444622	1	03/16/20 15:54	03/16/20 15:54	GB	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1444622	1	03/16/20 15:54	03/16/20 15:54	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1444010	1	03/14/20 14:07	03/14/20 14:07	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1447377	1	03/20/20 13:23	03/20/20 13:23	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 03:40	03/17/20 03:40	TJJ	Mt. Juliet, TN

MW-16-031320 L1199158-16 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 12:50 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1444622	1	03/16/20 16:10	03/16/20 16:10	GB	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1444622	1	03/16/20 16:10	03/16/20 16:10	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1444010	1	03/14/20 15:00	03/14/20 15:00	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1447377	1	03/20/20 13:25	03/20/20 13:25	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 04:01	03/17/20 04:01	TJJ	Mt. Juliet, TN

MW-18-031320 L1199158-17 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 13:05 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1444622	1	03/16/20 16:16	03/16/20 16:16	GB	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1444622	1	03/16/20 16:16	03/16/20 16:16	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1444010	1	03/14/20 15:18	03/14/20 15:18	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1447377	1	03/20/20 13:27	03/20/20 13:27	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 04:21	03/17/20 04:21	TJJ	Mt. Juliet, TN

MW-08-031320 L1199158-18 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 13:15 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1444622	1	03/16/20 16:22	03/16/20 16:22	GB	Mt. Juliet, TN
Wet Chemistry by Method 4500CO2 D-2011	WG1444622	1	03/16/20 16:22	03/16/20 16:22	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1444010	1	03/14/20 15:36	03/14/20 15:36	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1447377	1	03/20/20 13:30	03/20/20 13:30	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 04:41	03/17/20 04:41	TJJ	Mt. Juliet, TN

VBS-2-031320 L1199158-19 GW

Collected by: Melissa Warren | Collected date/time: 03/13/20 13:45 | Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 05:02	03/17/20 05:02	TJJ	Mt. Juliet, TN

FB04-031320 L1199158-20 GW

Collected by: Melissa Warren
Collected date/time: 03/13/20 14:05
Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/16/20 23:35	03/16/20 23:35	TJJ	Mt. Juliet, TN

MW-05-031320 L1199158-21 GW

Collected by: Melissa Warren
Collected date/time: 03/13/20 11:40
Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 05:22	03/17/20 05:22	TJJ	Mt. Juliet, TN

MW-36B-031320 L1199158-22 GW

Collected by: Melissa Warren
Collected date/time: 03/13/20 08:45
Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 05:43	03/17/20 05:43	TJJ	Mt. Juliet, TN

VBS-3-031320 L1199158-23 GW

Collected by: Melissa Warren
Collected date/time: 03/13/20 14:30
Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/17/20 06:03	03/17/20 06:03	TJJ	Mt. Juliet, TN

TB05-031320 L1199158-24 GW

Collected by: Melissa Warren
Collected date/time: 03/13/20 00:00
Received date/time: 03/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1445125	1	03/16/20 23:56	03/16/20 23:56	TJJ	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, 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.

Chris McCord
Project Manager

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/16/2020 18:03	WG1444905
Toluene	1.25		1.00	1	03/16/2020 18:03	WG1444905
Ethylbenzene	ND		1.00	1	03/16/2020 18:03	WG1444905
Total Xylenes	ND		3.00	1	03/16/2020 18:03	WG1444905
Methyl tert-butyl ether	ND		1.00	1	03/16/2020 18:03	WG1444905
Naphthalene	ND		5.00	1	03/16/2020 18:03	WG1444905
1,2-Dichloroethane	ND		1.00	1	03/16/2020 18:03	WG1444905
(S) Toluene-d8	*104*		*80.0-120*		*03/16/2020 18:03*	WG1444905
(S) 4-Bromofluorobenzene	*96.9*		*77.0-126*		*03/16/2020 18:03*	WG1444905
(S) 1,2-Dichloroethane-d4	*114*		*70.0-130*		*03/16/2020 18:03*	WG1444905

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	282		10.0	10	03/22/2020 21:41	WG1448481
Toluene	229		10.0	10	03/22/2020 21:41	WG1448481
Ethylbenzene	ND		1.00	1	03/16/2020 18:22	WG1444905
Total Xylenes	211		3.00	1	03/16/2020 18:22	WG1444905
Methyl tert-butyl ether	ND		1.00	1	03/16/2020 18:22	WG1444905
Naphthalene	ND		5.00	1	03/16/2020 18:22	WG1444905
1,2-Dichloroethane	ND		1.00	1	03/16/2020 18:22	WG1444905
(S) Toluene-d8	*96.6*		*80.0-120*		*03/16/2020 18:22*	WG1444905
(S) Toluene-d8	*109*		*80.0-120*		*03/22/2020 21:41*	WG1448481
(S) 4-Bromofluorobenzene	*94.9*		*77.0-126*		*03/16/2020 18:22*	WG1444905
(S) 4-Bromofluorobenzene	*105*		*77.0-126*		*03/22/2020 21:41*	WG1448481
(S) 1,2-Dichloroethane-d4	*117*		*70.0-130*		*03/16/2020 18:22*	WG1444905
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*03/22/2020 21:41*	WG1448481

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	240		5.00	5	03/16/2020 18:41	WG1444905
Toluene	201		5.00	5	03/16/2020 18:41	WG1444905
Ethylbenzene	ND		5.00	5	03/16/2020 18:41	WG1444905
Total Xylenes	183		15.0	5	03/16/2020 18:41	WG1444905
Methyl tert-butyl ether	ND		5.00	5	03/16/2020 18:41	WG1444905
Naphthalene	ND		25.0	5	03/16/2020 18:41	WG1444905
1,2-Dichloroethane	ND		5.00	5	03/16/2020 18:41	WG1444905
(S) Toluene-d8	*102*		*80.0-120*		*03/16/2020 18:41*	WG1444905
(S) 4-Bromofluorobenzene	*95.4*		*77.0-126*		*03/16/2020 18:41*	WG1444905
(S) 1,2-Dichloroethane-d4	*114*		*70.0-130*		*03/16/2020 18:41*	WG1444905

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	1.23		1.00	1	03/22/2020 17:30	WG1448532
Toluene	ND		1.00	1	03/22/2020 17:30	WG1448532
Ethylbenzene	ND		1.00	1	03/22/2020 17:30	WG1448532
Total Xylenes	ND		3.00	1	03/22/2020 17:30	WG1448532
Methyl tert-butyl ether	ND		1.00	1	03/22/2020 17:30	WG1448532
Naphthalene	ND	J0	5.00	1	03/22/2020 17:30	WG1448532
1,2-Dichloroethane	ND		1.00	1	03/22/2020 17:30	WG1448532
(S) Toluene-d8	*110*		*80.0-120*		*03/22/2020 17:30*	WG1448532
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*03/22/2020 17:30*	WG1448532
(S) 1,2-Dichloroethane-d4	*111*		*70.0-130*		*03/22/2020 17:30*	WG1448532

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/17/2020 00:16	WG1445125
Toluene	ND		1.00	1	03/17/2020 00:16	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 00:16	WG1445125
Total Xylenes	ND		3.00	1	03/17/2020 00:16	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/17/2020 00:16	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 00:16	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 00:16	WG1445125
(S) Toluene-d8	*97.6*		*80.0-120*		*03/17/2020 00:16*	WG1445125
(S) 4-Bromofluorobenzene	*92.6*		*77.0-126*		*03/17/2020 00:16*	WG1445125
(S) 1,2-Dichloroethane-d4	*106*		*70.0-130*		*03/17/2020 00:16*	WG1445125

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20000	1	03/16/2020 15:18	WG1444622

Sample Narrative:
L1199158-06 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Free Carbon Dioxide	ND	T8	20000	1	03/16/2020 15:18	WG1444622

Sample Narrative:
L1199158-06 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Nitrate as (N)	793		100	1	03/14/2020 12:02	WG1444010
Sulfate	ND		5000	1	03/14/2020 12:02	WG1444010

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	03/20/2020 13:00	WG1447377

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	03/17/2020 00:37	WG1445125
Toluene	ND		1.00	1	03/17/2020 00:37	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 00:37	WG1445125
Total Xylenes	ND		3.00	1	03/17/2020 00:37	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/17/2020 00:37	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 00:37	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 00:37	WG1445125
(S) Toluene-d8	*97.6*		*80.0-120*		*03/17/2020 00:37*	WG1445125
(S) 4-Bromofluorobenzene	*100*		*77.0-126*		*03/17/2020 00:37*	WG1445125
(S) 1,2-Dichloroethane-d4	*108*		*70.0-130*		*03/17/2020 00:37*	WG1445125

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20000	1	03/16/2020 15:26	WG1444622

Sample Narrative:
L1199158-07 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Free Carbon Dioxide	ND	T8	20000	1	03/16/2020 15:26	WG1444622

Sample Narrative:
L1199158-07 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Nitrate as (N)	160		100	1	03/14/2020 12:19	WG1444010
Sulfate	ND		5000	1	03/14/2020 12:19	WG1444010

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	03/20/2020 13:02	WG1447377

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	03/17/2020 00:57	WG1445125
Toluene	ND		1.00	1	03/17/2020 00:57	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 00:57	WG1445125
Total Xylenes	ND		3.00	1	03/17/2020 00:57	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/17/2020 00:57	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 00:57	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 00:57	WG1445125
(S) Toluene-d8	*100*		*80.0-120*		*03/17/2020 00:57*	WG1445125
(S) 4-Bromofluorobenzene	*96.6*		*77.0-126*		*03/17/2020 00:57*	WG1445125
(S) 1,2-Dichloroethane-d4	*105*		*70.0-130*		*03/17/2020 00:57*	WG1445125

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20000	1	03/16/2020 15:33	WG1444622

Sample Narrative:
L1199158-08 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Free Carbon Dioxide	26800	T8	20000	1	03/16/2020 15:33	WG1444622

Sample Narrative:
L1199158-08 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Nitrate as (N)	ND		100	1	03/14/2020 12:37	WG1444010
Sulfate	ND		5000	1	03/14/2020 12:37	WG1444010

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	03/20/2020 13:04	WG1447377

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	03/17/2020 01:17	WG1445125
Toluene	ND		1.00	1	03/17/2020 01:17	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 01:17	WG1445125
Total Xylenes	ND		3.00	1	03/17/2020 01:17	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/17/2020 01:17	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 01:17	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 01:17	WG1445125
(S) Toluene-d8	*98.4*		*80.0-120*		*03/17/2020 01:17*	WG1445125
(S) 4-Bromofluorobenzene	*94.0*		*77.0-126*		*03/17/2020 01:17*	WG1445125
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*03/17/2020 01:17*	WG1445125

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20000	1	03/16/2020 15:40	WG1444622

Sample Narrative:
L1199158-09 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Free Carbon Dioxide	ND	T8	20000	1	03/16/2020 15:40	WG1444622

Sample Narrative:
L1199158-09 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Nitrate as (N)	ND		100	1	03/14/2020 13:13	WG1444010
Sulfate	5360		5000	1	03/14/2020 13:13	WG1444010

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	03/20/2020 13:16	WG1447377

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	03/17/2020 01:38	WG1445125
Toluene	ND		1.00	1	03/17/2020 01:38	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 01:38	WG1445125
Total Xylenes	4.60		3.00	1	03/17/2020 01:38	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/17/2020 01:38	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 01:38	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 01:38	WG1445125
(S) Toluene-d8	*97.2*		*80.0-120*		*03/17/2020 01:38*	WG1445125
(S) 4-Bromofluorobenzene	*94.5*		*77.0-126*		*03/17/2020 01:38*	WG1445125
(S) 1,2-Dichloroethane-d4	*108*		*70.0-130*		*03/17/2020 01:38*	WG1445125

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/17/2020 01:58	WG1445125
Toluene	ND		1.00	1	03/17/2020 01:58	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 01:58	WG1445125
Total Xylenes	ND		3.00	1	03/17/2020 01:58	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/17/2020 01:58	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 01:58	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 01:58	WG1445125
(S) Toluene-d8	*102*		*80.0-120*		*03/17/2020 01:58*	WG1445125
(S) 4-Bromofluorobenzene	*100*		*77.0-126*		*03/17/2020 01:58*	WG1445125
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*03/17/2020 01:58*	WG1445125

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity	ND		20000	1	03/16/2020 15:45	WG1444622

Sample Narrative:
L1199158-11 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Free Carbon Dioxide	ND	T8	20000	1	03/16/2020 15:45	WG1444622

Sample Narrative:
L1199158-11 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Nitrate as (N)	299		100	1	03/14/2020 13:49	WG1444010
Sulfate	ND		5000	1	03/14/2020 13:49	WG1444010

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Methane	ND		10.0	1	03/20/2020 13:21	WG1447377

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/17/2020 02:19	WG1445125
Toluene	ND		1.00	1	03/17/2020 02:19	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 02:19	WG1445125
Total Xylenes	ND		3.00	1	03/17/2020 02:19	WG1445125
Methyl tert-butyl ether	2.72		1.00	1	03/17/2020 02:19	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 02:19	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 02:19	WG1445125
(S) Toluene-d8	*96.7*		*80.0-120*		*03/17/2020 02:19*	WG1445125
(S) 4-Bromofluorobenzene	*97.4*		*77.0-126*		*03/17/2020 02:19*	WG1445125
(S) 1,2-Dichloroethane-d4	*108*		*70.0-130*		*03/17/2020 02:19*	WG1445125

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/17/2020 02:39	WG1445125
Toluene	ND		1.00	1	03/17/2020 02:39	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 02:39	WG1445125
Total Xylenes	ND		3.00	1	03/17/2020 02:39	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/17/2020 02:39	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 02:39	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 02:39	WG1445125
(S) Toluene-d8	*95.1*		*80.0-120*		*03/17/2020 02:39*	WG1445125
(S) 4-Bromofluorobenzene	*96.4*		*77.0-126*		*03/17/2020 02:39*	WG1445125
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*03/17/2020 02:39*	WG1445125

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/17/2020 02:59	WG1445125
Toluene	ND		1.00	1	03/17/2020 02:59	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 02:59	WG1445125
Total Xylenes	ND		3.00	1	03/17/2020 02:59	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/17/2020 02:59	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 02:59	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 02:59	WG1445125
(S) Toluene-d8	*96.1*		*80.0-120*		*03/17/2020 02:59*	WG1445125
(S) 4-Bromofluorobenzene	*93.8*		*77.0-126*		*03/17/2020 02:59*	WG1445125
(S) 1,2-Dichloroethane-d4	*108*		*70.0-130*		*03/17/2020 02:59*	WG1445125

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/17/2020 03:20	WG1445125
Toluene	1.56		1.00	1	03/17/2020 03:20	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 03:20	WG1445125
Total Xylenes	ND		3.00	1	03/17/2020 03:20	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/17/2020 03:20	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 03:20	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 03:20	WG1445125
(S) Toluene-d8	*98.3*		*80.0-120*		*03/17/2020 03:20*	WG1445125
(S) 4-Bromofluorobenzene	*97.2*		*77.0-126*		*03/17/2020 03:20*	WG1445125
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*03/17/2020 03:20*	WG1445125

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20000	1	03/16/2020 15:54	WG1444622

Sample Narrative:
L1199158-15 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Free Carbon Dioxide	37000	T8	20000	1	03/16/2020 15:54	WG1444622

Sample Narrative:
L1199158-15 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Nitrate as (N)	ND		100	1	03/14/2020 14:07	WG1444010
Sulfate	ND		5000	1	03/14/2020 14:07	WG1444010

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	03/20/2020 13:23	WG1447377

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	03/17/2020 03:40	WG1445125
Toluene	ND		1.00	1	03/17/2020 03:40	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 03:40	WG1445125
Total Xylenes	ND		3.00	1	03/17/2020 03:40	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/17/2020 03:40	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 03:40	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 03:40	WG1445125
(S) Toluene-d8	*99.4*		*80.0-120*		*03/17/2020 03:40*	WG1445125
(S) 4-Bromofluorobenzene	*97.2*		*77.0-126*		*03/17/2020 03:40*	WG1445125
(S) 1,2-Dichloroethane-d4	*105*		*70.0-130*		*03/17/2020 03:40*	WG1445125

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20000	1	03/16/2020 16:10	WG1444622

Sample Narrative:
L1199158-16 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Free Carbon Dioxide	47100	T8	20000	1	03/16/2020 16:10	WG1444622

Sample Narrative:
L1199158-16 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Nitrate as (N)	ND		100	1	03/14/2020 15:00	WG1444010
Sulfate	ND		5000	1	03/14/2020 15:00	WG1444010

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	03/20/2020 13:25	WG1447377

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	03/17/2020 04:01	WG1445125
Toluene	1.02		1.00	1	03/17/2020 04:01	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 04:01	WG1445125
Total Xylenes	ND		3.00	1	03/17/2020 04:01	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/17/2020 04:01	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 04:01	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 04:01	WG1445125
(S) Toluene-d8	*98.7*		*80.0-120*		*03/17/2020 04:01*	WG1445125
(S) 4-Bromofluorobenzene	*96.7*		*77.0-126*		*03/17/2020 04:01*	WG1445125
(S) 1,2-Dichloroethane-d4	*105*		*70.0-130*		*03/17/2020 04:01*	WG1445125

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20000	1	03/16/2020 16:16	WG1444622

Sample Narrative:
L1199158-17 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Free Carbon Dioxide	26700	T8	20000	1	03/16/2020 16:16	WG1444622

Sample Narrative:
L1199158-17 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Nitrate as (N)	ND		100	1	03/14/2020 15:18	WG1444010
Sulfate	ND		5000	1	03/14/2020 15:18	WG1444010

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	03/20/2020 13:27	WG1447377

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	03/17/2020 04:21	WG1445125
Toluene	1.15		1.00	1	03/17/2020 04:21	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 04:21	WG1445125
Total Xylenes	14.7		3.00	1	03/17/2020 04:21	WG1445125
Methyl tert-butyl ether	7.16		1.00	1	03/17/2020 04:21	WG1445125
Naphthalene	6.21	J0	5.00	1	03/17/2020 04:21	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 04:21	WG1445125
(S) Toluene-d8	*96.4*		*80.0-120*		*03/17/2020 04:21*	WG1445125
(S) 4-Bromofluorobenzene	*96.9*		*77.0-126*		*03/17/2020 04:21*	WG1445125
(S) 1,2-Dichloroethane-d4	*116*		*70.0-130*		*03/17/2020 04:21*	WG1445125

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	ND		20000	1	03/16/2020 16:22	WG1444622

Sample Narrative:
L1199158-18 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Free Carbon Dioxide	ND	T8	20000	1	03/16/2020 16:22	WG1444622

Sample Narrative:
L1199158-18 WG1444622: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Nitrate as (N)	ND		100	1	03/14/2020 15:36	WG1444010
Sulfate	ND		5000	1	03/14/2020 15:36	WG1444010

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	03/20/2020 13:30	WG1447377

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	03/17/2020 04:41	WG1445125
Toluene	ND		1.00	1	03/17/2020 04:41	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 04:41	WG1445125
Total Xylenes	ND		3.00	1	03/17/2020 04:41	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/17/2020 04:41	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 04:41	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 04:41	WG1445125
(S) Toluene-d8	*95.8*		*80.0-120*		*03/17/2020 04:41*	WG1445125
(S) 4-Bromofluorobenzene	*93.8*		*77.0-126*		*03/17/2020 04:41*	WG1445125
(S) 1,2-Dichloroethane-d4	*105*		*70.0-130*		*03/17/2020 04:41*	WG1445125

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	1.43		1.00	1	03/17/2020 05:02	WG1445125
Toluene	ND		1.00	1	03/17/2020 05:02	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 05:02	WG1445125
Total Xylenes	ND		3.00	1	03/17/2020 05:02	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/17/2020 05:02	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 05:02	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 05:02	WG1445125
(S) Toluene-d8	*99.6*		*80.0-120*		*03/17/2020 05:02*	WG1445125
(S) 4-Bromofluorobenzene	*92.8*		*77.0-126*		*03/17/2020 05:02*	WG1445125
(S) 1,2-Dichloroethane-d4	*100*		*70.0-130*		*03/17/2020 05:02*	WG1445125

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/16/2020 23:35	WG1445125
Toluene	ND		1.00	1	03/16/2020 23:35	WG1445125
Ethylbenzene	ND		1.00	1	03/16/2020 23:35	WG1445125
Total Xylenes	ND		3.00	1	03/16/2020 23:35	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/16/2020 23:35	WG1445125
Naphthalene	ND	J0	5.00	1	03/16/2020 23:35	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/16/2020 23:35	WG1445125
(S) Toluene-d8	*98.1*		*80.0-120*		*03/16/2020 23:35*	WG1445125
(S) 4-Bromofluorobenzene	*93.9*		*77.0-126*		*03/16/2020 23:35*	WG1445125
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*03/16/2020 23:35*	WG1445125

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/17/2020 05:22	WG1445125
Toluene	ND		1.00	1	03/17/2020 05:22	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 05:22	WG1445125
Total Xylenes	ND		3.00	1	03/17/2020 05:22	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/17/2020 05:22	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 05:22	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 05:22	WG1445125
(S) Toluene-d8	*102*		*80.0-120*		*03/17/2020 05:22*	WG1445125
(S) 4-Bromofluorobenzene	*97.2*		*77.0-126*		*03/17/2020 05:22*	WG1445125
(S) 1,2-Dichloroethane-d4	*106*		*70.0-130*		*03/17/2020 05:22*	WG1445125

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/17/2020 05:43	WG1445125
Toluene	ND		1.00	1	03/17/2020 05:43	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 05:43	WG1445125
Total Xylenes	ND		3.00	1	03/17/2020 05:43	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/17/2020 05:43	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 05:43	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 05:43	WG1445125
(S) Toluene-d8	*96.7*		*80.0-120*		*03/17/2020 05:43*	WG1445125
(S) 4-Bromofluorobenzene	*93.0*		*77.0-126*		*03/17/2020 05:43*	WG1445125
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*03/17/2020 05:43*	WG1445125

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/17/2020 06:03	WG1445125
Toluene	ND		1.00	1	03/17/2020 06:03	WG1445125
Ethylbenzene	ND		1.00	1	03/17/2020 06:03	WG1445125
Total Xylenes	ND		3.00	1	03/17/2020 06:03	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/17/2020 06:03	WG1445125
Naphthalene	ND	J0	5.00	1	03/17/2020 06:03	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/17/2020 06:03	WG1445125
(S) Toluene-d8	*98.5*		*80.0-120*		*03/17/2020 06:03*	WG1445125
(S) 4-Bromofluorobenzene	*103*		*77.0-126*		*03/17/2020 06:03*	WG1445125
(S) 1,2-Dichloroethane-d4	*108*		*70.0-130*		*03/17/2020 06:03*	WG1445125

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/16/2020 23:56	WG1445125
Toluene	ND		1.00	1	03/16/2020 23:56	WG1445125
Ethylbenzene	ND		1.00	1	03/16/2020 23:56	WG1445125
Total Xylenes	ND		3.00	1	03/16/2020 23:56	WG1445125
Methyl tert-butyl ether	ND		1.00	1	03/16/2020 23:56	WG1445125
Naphthalene	ND	J0	5.00	1	03/16/2020 23:56	WG1445125
1,2-Dichloroethane	ND		1.00	1	03/16/2020 23:56	WG1445125
(S) Toluene-d8	*94.9*		*80.0-120*		*03/16/2020 23:56*	WG1445125
(S) 4-Bromofluorobenzene	*97.9*		*77.0-126*		*03/16/2020 23:56*	WG1445125
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*03/16/2020 23:56*	WG1445125

Method Blank (MB)

(MB) R3509155-1 03/16/20 14:40

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	3420	J	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1199156-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1199156-01 03/16/20 15:00 • (DUP) R3509155-3 03/16/20 15:09

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	96300	96200	1	0.180		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1199170-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1199170-01 03/16/20 17:57 • (DUP) R3509155-6 03/16/20 18:07

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	286000	283000	1	0.773		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3509155-5 03/16/20 16:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	98800	98.8	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3509155-2 03/16/20 14:40

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Free Carbon Dioxide	U		6670	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1199156-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1199156-01 03/16/20 15:00 • (DUP) R3509155-4 03/16/20 15:09

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Free Carbon Dioxide	ND	ND	1	20.0	J	20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1199170-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1199170-01 03/16/20 17:57 • (DUP) R3509155-7 03/16/20 18:07

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Free Carbon Dioxide	ND	ND	1	0.934	J	20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Method Blank (MB)

(MB) R3508775-1 03/14/20 08:05

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

L1199158-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1199158-08 03/14/20 12:37 • (DUP) R3508775-3 03/14/20 12:55

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Nitrate	ND	0.000	1	0.000		15
Sulfate	ND	816	1	0.000		15

L1199161-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1199161-11 03/14/20 23:04 • (DUP) R3508775-7 03/14/20 23:22

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Nitrate	U	0.000	1	0.000		15
Sulfate	2400	2460	1	2.26	J	15

Laboratory Control Sample (LCS)

(LCS) R3508775-2 03/14/20 08:23

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Nitrate	8000	7950	99.4	80.0-120	
Sulfate	40000	39500	98.8	80.0-120	

L1199158-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1199158-09 03/14/20 13:13 • (MS) R3508775-4 03/14/20 13:31

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	ug/l	ug/l	ug/l	%		%	
Nitrate	5000	ND	5080	102	1	80.0-120	
Sulfate	50000	5360	55200	99.7	1	80.0-120	

L1199161-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1199161-08 03/14/20 20:23 • (MS) R3508775-8 03/15/20 14:34 • (MSD) R3508775-9 03/15/20 14:52

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Nitrate	5000	14300	18100	18400	74.6	80.5	1	80.0-120	E J6	E	1.63	15
Sulfate	50000	41200	85300	85600	88.1	88.7	1	80.0-120			0.318	15

Method Blank (MB)

(MB) R3510736-2 03/20/20 12:37

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Methane	U		2.91	10.0

L1199158-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1199158-09 03/20/20 13:16 • (DUP) R3510736-3 03/20/20 13:18

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3510736-1 03/20/20 12:34

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Methane	67.8	63.1	93.1	85.0-115	

Method Blank (MB)

(MB) R3511148-3 03/16/20 14:22

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*103*			*80.0-120*
(S) 4-Bromofluorobenzene	*96.6*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*115*			*70.0-130*

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

(LCS) R3511148-1 03/16/20 13:06 • (LCSD) R3511148-2 03/16/20 13:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	4.72	4.68	94.4	93.6	70.0-130			0.851	20
1,2-Dichloroethane	5.00	5.25	5.51	105	110	70.0-130			4.83	20
Ethylbenzene	5.00	4.73	4.88	94.6	97.6	70.0-130			3.12	20
Methyl tert-butyl ether	5.00	4.38	4.79	87.6	95.8	70.0-130			8.94	20
Naphthalene	5.00	4.77	5.15	95.4	103	70.0-130			7.66	20
Toluene	5.00	4.72	4.75	94.4	95.0	70.0-130			0.634	20
Xylenes, Total	15.0	13.8	14.3	92.0	95.3	70.0-130			3.56	20
(S) Toluene-d8				*102*	*102*	*80.0-120*				
(S) 4-Bromofluorobenzene				*97.8*	*98.2*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*114*	*117*	*70.0-130*				

Method Blank (MB)

(MB) R3511370-2 03/16/20 22:45

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*97.2*			*80.0-120*
(S) 4-Bromofluorobenzene	*95.7*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3511370-1 03/16/20 22:04

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.51	110	70.0-130	
1,2-Dichloroethane	5.00	5.63	113	70.0-130	
Ethylbenzene	5.00	5.37	107	70.0-130	
Methyl tert-butyl ether	5.00	5.80	116	70.0-130	
Naphthalene	5.00	4.20	84.0	70.0-130	
Toluene	5.00	5.35	107	70.0-130	
Xylenes, Total	15.0	16.2	108	70.0-130	
(S) Toluene-d8			*96.4*	*80.0-120*	
(S) 4-Bromofluorobenzene			*94.9*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*107*	*70.0-130*	

Method Blank (MB)

(MB) R3511342-2 03/22/20 12:25

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.331	1.00
Toluene	U		0.412	1.00
(S) Toluene-d8	*109*			*80.0-120*
(S) 4-Bromofluorobenzene	*104*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*

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

(LCS) R3511342-1 03/22/20 11:26 • (LCSD) R3511342-3 03/22/20 14:23

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Benzene	5.00	4.51	4.28	90.2	85.6	70.0-130			5.23	20
Toluene	5.00	4.76	4.48	95.2	89.6	70.0-130			6.06	20
(S) Toluene-d8				*108*	*110*	*80.0-120*				
(S) 4-Bromofluorobenzene				*107*	*103*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*102*	*105*	*70.0-130*				

Method Blank (MB)

(MB) R3511410-3 03/22/20 14:39

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*109*			*80.0-120*
(S) 4-Bromofluorobenzene	*91.8*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*116*			*70.0-130*

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

(LCS) R3511410-1 03/22/20 13:37 • (LCSD) R3511410-2 03/22/20 13:57

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	4.48	4.56	89.6	91.2	70.0-130			1.77	20
1,2-Dichloroethane	5.00	4.73	5.07	94.6	101	70.0-130			6.94	20
Ethylbenzene	5.00	4.22	4.17	84.4	83.4	70.0-130			1.19	20
Methyl tert-butyl ether	5.00	5.30	5.17	106	103	70.0-130			2.48	20
Naphthalene	5.00	3.53	3.66	70.6	73.2	70.0-130			3.62	20
Toluene	5.00	4.64	4.53	92.8	90.6	70.0-130			2.40	20
Xylenes, Total	15.0	13.0	12.8	86.7	85.3	70.0-130			1.55	20
(S) Toluene-d8				*112*	*111*	*80.0-120*				
(S) 4-Bromofluorobenzene				*95.1*	*93.7*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*114*	*113*	*70.0-130*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(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.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration met method criteria.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.

Pace National 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.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

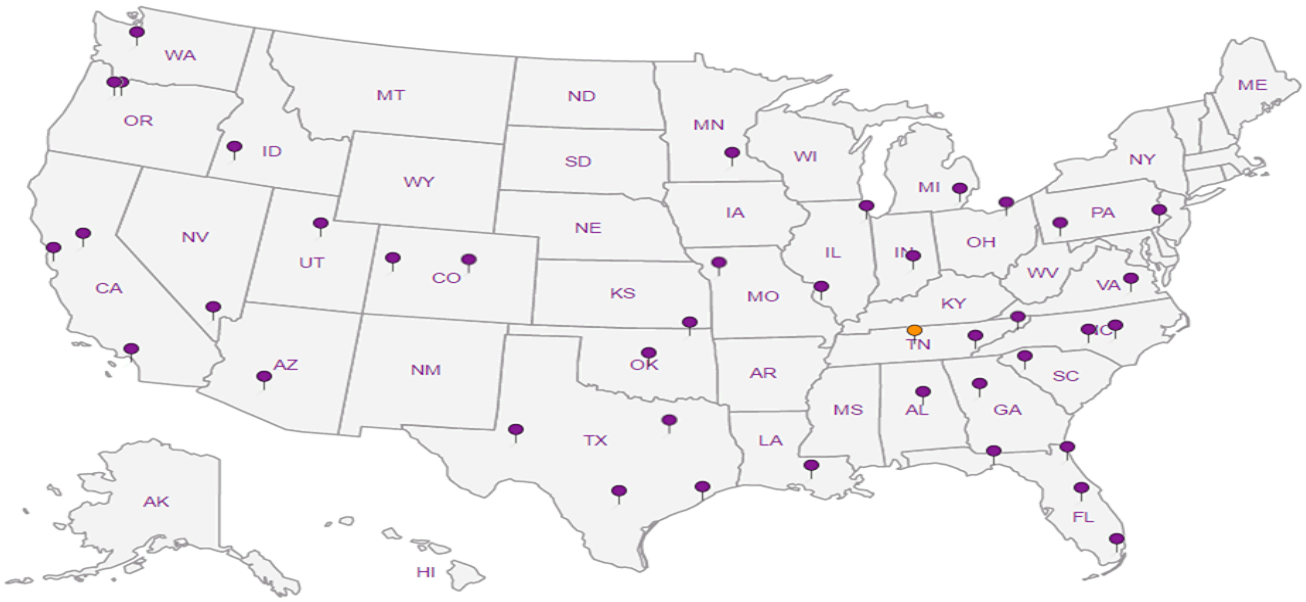
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National 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. Pace National performs all testing at our central laboratory.



Kinder Morgan- Atlanta, GA

6600 Peachtree Dunwoody Road
400 Embassy Row - Suite 600
Atlanta, GA 30328

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com; tom.wiley@jacobs.com

Project Description: Lewis Drive Groundwater

City/State Collected: BELTON, SC

Phone: 770-604-9182
Fax:

Client Project # KMLD01420
B.CS.GEN.LDDMR.GW

Lab Project # KINCH2MGA-LEWIS12

Collected by (print): MELISSA WARREN

Site/Facility ID # LEWIS DRIVE

P.O. #

Collected by (signature):

Quote #

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Chain of Custody Page 1 of 3

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 1199158

Tabl 1096

Acctnum: KINCH2MGA
Template: T130277
Prelogin: P682251
TSR: 526 - Chris McCord
PB: 11-28-18G
Shipped Via: FedEx Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NITRATE,SULFATE* 125mlHDPE-NoPres	ALK,CO2 125mlHDPE-NoPres	RSK175 40mlAmb HCl	V8260BTEXMNSC 40mlAmb-HCl	V8260TCLSC-TB 40mlAmb-NoPres-Blk	Remarks	Sample # (lab only)
MW-09B-031320	GRAB	GW	N/A	03/13/20	1115	3				X			-01
MW-36-031320		GW			0835	3				X			02
MW-36-D-031320		GW			0840	3				X			03
MW-17-031320		GW			0905	3				X			04
MW-30-031320		GW			0935	3				X			05
MW-03-031320		GW			0950	7	X	X	X	X			06
MW-32-031320		GW			1005	7	X	X	X	X			07
MW-04-031320		GW			1030	7	X	X	X	X			08
MW-02-031320		GW			1045	7	X	X	X	X			09
MW-02B-031320		GW			1055	3				X			10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: *NITRATE/SULFATE* has a 48hr hold time.

pH _____ Temp _____

Flow _____ Other _____

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

Tracking # 132480745 24

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

RAD SCREEN: <0.5 mR/hr

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	03/13/20	1600			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C 0.6 3=0.3 Bottles Received: 10	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 3-14-20 Time: 0900	Hold: Condition: NCF / OK

Kinder Morgan- Atlanta, GA

6600 Peachtree Dunwoody Road
400 Embassy Row - Suite 600
Atlanta, GA 30328

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com; tom.wiley@jacobs.com

Project Description: Lewis Drive Groundwater

City/State Collected: BELTON, SC

Phone: 770-604-9182
Fax:

Client Project # KMLDOM20
B.CS, GEO, LDOMR.GW

Lab Project # KINCH2MGA-LEWIS12

Collected by (print): MELISSA WALKER

Site/Facility ID # LEWIS DRIVE

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Date Results Needed

Quote #

Immediately Packed on Ice N ___ Y X

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NITRATE,SULFATE* 125mlHDPE-NoPres	ALK,CO2 125mlHDPE-NoPres	RSK175 40mlAmb HCl	V8260BTEXMNSC 40mlAmb-HCl	V8260TCLSC-TB 40mlAmb-NoPres-Blk	Remarks	Sample # (lab only)
MW-09-031320	GRAB	GW	NA	03/13/20	1120	7	X	X	X	X			11
MW-05-D-031320		GW			1145	3				X			12
MW-06-031320		GW			1150	3				X			13
MW-06B-031320		GW			1155	3				X			14
MW-10-031320		GW			1240	7	X	X	X	X			15
MW-16-031320		GW			1250	7	X	X	X	X			16
MW-18-031320		GW			1305	7	X	X	X	X			17
MW-08-031320		GW			1315	7	X	X	X	X			18
VBS-2-031320		GW			1345	3				X			19
FB04-031320		GW			1405	3				X			20

Chain of Custody Page 2 of 3

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 199158

Table #

Acctnum: KINCH2MGA
Template: T130277
Prelogin: P682251
TSR: 526 - Chris McCord
PB: 11-28-18GW

Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: *NITRATE/SULFATE* has a 48hr hold time.

pH _____ Temp _____
Flow _____ Other _____

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

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X Y __N
If Applicable
VOA Zero Headspace: X Y __N
Preservation Correct/Checked: __Y __N

RAD SCREEN: <0.5 mR/hr

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	If preservation required by Login: Date/Time
	03/13/20	1600			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 0.6 °C Bottles Received: 10	
				0.6-0.3	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 3-14-20 Time: 0900	Hold: / Condition: NCF / OK

Chain of Custody Page 3 of 3

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Kinder Morgan- Atlanta, GA

6600 Peachtree Dunwoody Road
400 Embassy Row - Suite 600
Atlanta, GA 30328

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Pres Chk

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com; tom.wiley@jacobs.com

Project Description: Lewis Drive Groundwater

City/State Collected: BELTON, SC

Phone: 770-604-9182
Fax:

Client Project #: KMLDOM20 B.CS.GEN.LDOMR.GW

Lab Project #: KINCH2MGA-LEWIS12

Collected by (print): MELISSA WARREN

Site/Facility ID #:

P.O. #:

Collected by (signature): [signature]

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #:

Date Results Needed:

Immediately Packed on Ice N ___ Y X

L# 1199158
Table #
Acctnum: KINCH2MGA
Template: T130277
Prelogin: P682251
TSR: 526 - Chris McCord
PB: 11-28-18 [initials]
Shipped Via: FedEX Ground

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NITRATE,SULFATE* 125mlHDPE-NoPres	ALK,CO2 125mlHDPE-NoPres	RSK175 40mlAmb HCl	V8260BTEXMNSC 40mlAmb-HCl	V8260TCLSC-TB 40mlAmb-NoPres-Blk					Remarks	Sample # (lab only)
Pres Chk										X							
MW-05-031320	GRAB	GW	NA	03/13/20	1140	3				X							21
MW-36B-031320	↓	GW	↓	↓	0845	3				X							22
VBS-3-031320	↓	GW	↓	↓	1430	3				X							23
TBOS-031320	↓	GW	↓	↓	—	1					X						24
		GW															
		GW															
		GW															
		GW															
		GW															
		GW															

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other______

Remarks: *NITRATE/SULFATE* has a 48hr hold time.

pH ______ Temp ______
Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier __ ______

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: __Y __N

RAD SCREEN: <0.5 mR/hr

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
[signature]	03/13/20	1600			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: [illegible] °C 0.6+3=0.3	Bottles Received: 108	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 3-14-20	Time: 0900	Hold:	Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 15, 2020

Kinder Morgan- Atlanta, GA

Sample Delivery Group:	L1177661
Samples Received:	01/09/2020
Project Number:	KMLDOM20
Description:	Lewis Drive Surface Water
Site:	LEWIS DRIVE
Report To:	Bethany Garvey Ten 10th Street NW Suite 1400 Atlanta, GA 30309

Entire Report Reviewed By:

Chris McCord
Project Manager

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 Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

TABLE OF CONTENTS

SW11-010820 L1177661-01 GW

Collected by: Melissa Warren | Collected date/time: 01/08/20 11:50 | Received date/time: 01/09/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1408724	1	01/09/20 21:01	01/09/20 21:01	BMB	Mt. Juliet, TN

SW10-010820 L1177661-02 GW

Collected by: Melissa Warren | Collected date/time: 01/08/20 12:00 | Received date/time: 01/09/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1408724	1	01/09/20 21:21	01/09/20 21:21	BMB	Mt. Juliet, TN

SW09-010820 L1177661-03 GW

Collected by: Melissa Warren | Collected date/time: 01/08/20 12:10 | Received date/time: 01/09/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1408724	1	01/09/20 21:42	01/09/20 21:42	BMB	Mt. Juliet, TN

SW08-010820 L1177661-04 GW

Collected by: Melissa Warren | Collected date/time: 01/08/20 12:20 | Received date/time: 01/09/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1408724	1	01/09/20 22:02	01/09/20 22:02	BMB	Mt. Juliet, TN

SW13-010820 L1177661-05 GW

Collected by: Melissa Warren | Collected date/time: 01/08/20 12:30 | Received date/time: 01/09/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1408724	1	01/09/20 22:23	01/09/20 22:23	BMB	Mt. Juliet, TN

SW04-010820 L1177661-06 GW

Collected by: Melissa Warren | Collected date/time: 01/08/20 12:45 | Received date/time: 01/09/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1408724	1	01/09/20 22:43	01/09/20 22:43	BMB	Mt. Juliet, TN

SW02-010820 L1177661-07 GW

Collected by: Melissa Warren | Collected date/time: 01/08/20 12:50 | Received date/time: 01/09/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1408724	1	01/09/20 23:04	01/09/20 23:04	BMB	Mt. Juliet, TN

SW01-010820 L1177661-08 GW

Collected by: Melissa Warren | Collected date/time: 01/08/20 13:10 | Received date/time: 01/09/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1408724	1	01/09/20 23:25	01/09/20 23:25	BMB	Mt. Juliet, TN

SW07-010820 L1177661-09 GW

Collected by: Melissa Warren | Collected date/time: 01/08/20 13:20 | Received date/time: 01/09/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1408724	1	01/09/20 23:45	01/09/20 23:45	BMB	Mt. Juliet, TN

SW03-010820 L1177661-10 GW

Collected by: Melissa Warren | Collected date/time: 01/08/20 13:35 | Received date/time: 01/09/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1408724	1	01/10/20 00:06	01/10/20 00:06	BMB	Mt. Juliet, TN

SW12-010820 L1177661-11 GW

Collected by: Melissa Warren | Collected date/time: 01/08/20 13:45 | Received date/time: 01/09/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1408724	1	01/10/20 00:26	01/10/20 00:26	BMB	Mt. Juliet, TN

SW14-010820 L1177661-12 GW

Collected by: Melissa Warren | Collected date/time: 01/08/20 14:45 | Received date/time: 01/09/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1408724	1	01/10/20 00:47	01/10/20 00:47	BMB	Mt. Juliet, TN

SW05-010820 L1177661-13 GW

Collected by: Melissa Warren | Collected date/time: 01/08/20 14:55 | Received date/time: 01/09/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1408724	1	01/10/20 01:08	01/10/20 01:08	BMB	Mt. Juliet, TN

TB01-010820 L1177661-14 GW

Collected by: Melissa Warren | Collected date/time: 01/08/20 00:00 | Received date/time: 01/09/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1408724	1	01/09/20 19:40	01/09/20 19:40	BMB	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, 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.

Chris McCord
Project Manager

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	01/09/2020 21:01	WG1408724
Toluene	ND		1.00	1	01/09/2020 21:01	WG1408724
Ethylbenzene	ND		1.00	1	01/09/2020 21:01	WG1408724
Total Xylenes	ND		3.00	1	01/09/2020 21:01	WG1408724
Methyl tert-butyl ether	ND		1.00	1	01/09/2020 21:01	WG1408724
Naphthalene	ND		5.00	1	01/09/2020 21:01	WG1408724
1,2-Dichloroethane	ND		1.00	1	01/09/2020 21:01	WG1408724
(S) Toluene-d8	*103*		*80.0-120*		*01/09/2020 21:01*	WG1408724
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*01/09/2020 21:01*	WG1408724
(S) 1,2-Dichloroethane-d4	*98.8*		*70.0-130*		*01/09/2020 21:01*	WG1408724

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	01/09/2020 21:21	WG1408724
Toluene	ND		1.00	1	01/09/2020 21:21	WG1408724
Ethylbenzene	ND		1.00	1	01/09/2020 21:21	WG1408724
Total Xylenes	ND		3.00	1	01/09/2020 21:21	WG1408724
Methyl tert-butyl ether	ND		1.00	1	01/09/2020 21:21	WG1408724
Naphthalene	ND		5.00	1	01/09/2020 21:21	WG1408724
1,2-Dichloroethane	ND		1.00	1	01/09/2020 21:21	WG1408724
(S) Toluene-d8	*102*		*80.0-120*		*01/09/2020 21:21*	WG1408724
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*01/09/2020 21:21*	WG1408724
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*01/09/2020 21:21*	WG1408724

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	01/09/2020 21:42	WG1408724
Toluene	ND		1.00	1	01/09/2020 21:42	WG1408724
Ethylbenzene	ND		1.00	1	01/09/2020 21:42	WG1408724
Total Xylenes	ND		3.00	1	01/09/2020 21:42	WG1408724
Methyl tert-butyl ether	ND		1.00	1	01/09/2020 21:42	WG1408724
Naphthalene	ND		5.00	1	01/09/2020 21:42	WG1408724
1,2-Dichloroethane	ND		1.00	1	01/09/2020 21:42	WG1408724
(S) Toluene-d8	*101*		*80.0-120*		*01/09/2020 21:42*	WG1408724
(S) 4-Bromofluorobenzene	*100*		*77.0-126*		*01/09/2020 21:42*	WG1408724
(S) 1,2-Dichloroethane-d4	*99.9*		*70.0-130*		*01/09/2020 21:42*	WG1408724

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	01/09/2020 22:02	WG1408724
Toluene	ND		1.00	1	01/09/2020 22:02	WG1408724
Ethylbenzene	ND		1.00	1	01/09/2020 22:02	WG1408724
Total Xylenes	ND		3.00	1	01/09/2020 22:02	WG1408724
Methyl tert-butyl ether	ND		1.00	1	01/09/2020 22:02	WG1408724
Naphthalene	ND		5.00	1	01/09/2020 22:02	WG1408724
1,2-Dichloroethane	ND		1.00	1	01/09/2020 22:02	WG1408724
(S) Toluene-d8	*103*		*80.0-120*		*01/09/2020 22:02*	WG1408724
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*01/09/2020 22:02*	WG1408724
(S) 1,2-Dichloroethane-d4	*100*		*70.0-130*		*01/09/2020 22:02*	WG1408724

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	01/09/2020 22:23	WG1408724
Toluene	ND		1.00	1	01/09/2020 22:23	WG1408724
Ethylbenzene	ND		1.00	1	01/09/2020 22:23	WG1408724
Total Xylenes	ND		3.00	1	01/09/2020 22:23	WG1408724
Methyl tert-butyl ether	1.79		1.00	1	01/09/2020 22:23	WG1408724
Naphthalene	ND		5.00	1	01/09/2020 22:23	WG1408724
1,2-Dichloroethane	ND		1.00	1	01/09/2020 22:23	WG1408724
(S) Toluene-d8	*102*		*80.0-120*		*01/09/2020 22:23*	WG1408724
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*01/09/2020 22:23*	WG1408724
(S) 1,2-Dichloroethane-d4	*99.7*		*70.0-130*		*01/09/2020 22:23*	WG1408724

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	01/09/2020 22:43	WG1408724
Toluene	ND		1.00	1	01/09/2020 22:43	WG1408724
Ethylbenzene	ND		1.00	1	01/09/2020 22:43	WG1408724
Total Xylenes	ND		3.00	1	01/09/2020 22:43	WG1408724
Methyl tert-butyl ether	ND		1.00	1	01/09/2020 22:43	WG1408724
Naphthalene	ND		5.00	1	01/09/2020 22:43	WG1408724
1,2-Dichloroethane	ND		1.00	1	01/09/2020 22:43	WG1408724
(S) Toluene-d8	*101*		*80.0-120*		*01/09/2020 22:43*	WG1408724
(S) 4-Bromofluorobenzene	*99.2*		*77.0-126*		*01/09/2020 22:43*	WG1408724
(S) 1,2-Dichloroethane-d4	*99.2*		*70.0-130*		*01/09/2020 22:43*	WG1408724

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	7.25		1.00	1	01/09/2020 23:04	WG1408724
Toluene	ND		1.00	1	01/09/2020 23:04	WG1408724
Ethylbenzene	ND		1.00	1	01/09/2020 23:04	WG1408724
Total Xylenes	ND		3.00	1	01/09/2020 23:04	WG1408724
Methyl tert-butyl ether	1.89		1.00	1	01/09/2020 23:04	WG1408724
Naphthalene	ND		5.00	1	01/09/2020 23:04	WG1408724
1,2-Dichloroethane	ND		1.00	1	01/09/2020 23:04	WG1408724
(S) Toluene-d8	*102*		*80.0-120*		*01/09/2020 23:04*	WG1408724
(S) 4-Bromofluorobenzene	*105*		*77.0-126*		*01/09/2020 23:04*	WG1408724
(S) 1,2-Dichloroethane-d4	*99.9*		*70.0-130*		*01/09/2020 23:04*	WG1408724

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	1.49		1.00	1	01/09/2020 23:25	WG1408724
Toluene	ND		1.00	1	01/09/2020 23:25	WG1408724
Ethylbenzene	ND		1.00	1	01/09/2020 23:25	WG1408724
Total Xylenes	ND		3.00	1	01/09/2020 23:25	WG1408724
Methyl tert-butyl ether	ND		1.00	1	01/09/2020 23:25	WG1408724
Naphthalene	ND		5.00	1	01/09/2020 23:25	WG1408724
1,2-Dichloroethane	ND		1.00	1	01/09/2020 23:25	WG1408724
(S) Toluene-d8	*103*		*80.0-120*		*01/09/2020 23:25*	WG1408724
(S) 4-Bromofluorobenzene	*103*		*77.0-126*		*01/09/2020 23:25*	WG1408724
(S) 1,2-Dichloroethane-d4	*99.3*		*70.0-130*		*01/09/2020 23:25*	WG1408724

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	01/09/2020 23:45	WG1408724
Toluene	ND		1.00	1	01/09/2020 23:45	WG1408724
Ethylbenzene	ND		1.00	1	01/09/2020 23:45	WG1408724
Total Xylenes	ND		3.00	1	01/09/2020 23:45	WG1408724
Methyl tert-butyl ether	ND		1.00	1	01/09/2020 23:45	WG1408724
Naphthalene	ND		5.00	1	01/09/2020 23:45	WG1408724
1,2-Dichloroethane	ND		1.00	1	01/09/2020 23:45	WG1408724
(S) Toluene-d8	*102*		*80.0-120*		*01/09/2020 23:45*	WG1408724
(S) 4-Bromofluorobenzene	*99.3*		*77.0-126*		*01/09/2020 23:45*	WG1408724
(S) 1,2-Dichloroethane-d4	*98.4*		*70.0-130*		*01/09/2020 23:45*	WG1408724

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	01/10/2020 00:06	WG1408724
Toluene	ND		1.00	1	01/10/2020 00:06	WG1408724
Ethylbenzene	ND		1.00	1	01/10/2020 00:06	WG1408724
Total Xylenes	ND		3.00	1	01/10/2020 00:06	WG1408724
Methyl tert-butyl ether	ND		1.00	1	01/10/2020 00:06	WG1408724
Naphthalene	ND		5.00	1	01/10/2020 00:06	WG1408724
1,2-Dichloroethane	ND		1.00	1	01/10/2020 00:06	WG1408724
(S) Toluene-d8	*103*		*80.0-120*		*01/10/2020 00:06*	WG1408724
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*01/10/2020 00:06*	WG1408724
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*01/10/2020 00:06*	WG1408724

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	1.36		1.00	1	01/10/2020 00:26	WG1408724
Toluene	ND		1.00	1	01/10/2020 00:26	WG1408724
Ethylbenzene	ND		1.00	1	01/10/2020 00:26	WG1408724
Total Xylenes	ND		3.00	1	01/10/2020 00:26	WG1408724
Methyl tert-butyl ether	ND		1.00	1	01/10/2020 00:26	WG1408724
Naphthalene	ND		5.00	1	01/10/2020 00:26	WG1408724
1,2-Dichloroethane	ND		1.00	1	01/10/2020 00:26	WG1408724
(S) Toluene-d8	*101*		*80.0-120*		*01/10/2020 00:26*	WG1408724
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*01/10/2020 00:26*	WG1408724
(S) 1,2-Dichloroethane-d4	*100*		*70.0-130*		*01/10/2020 00:26*	WG1408724

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	01/10/2020 00:47	WG1408724
Toluene	ND		1.00	1	01/10/2020 00:47	WG1408724
Ethylbenzene	ND		1.00	1	01/10/2020 00:47	WG1408724
Total Xylenes	ND		3.00	1	01/10/2020 00:47	WG1408724
Methyl tert-butyl ether	ND		1.00	1	01/10/2020 00:47	WG1408724
Naphthalene	ND		5.00	1	01/10/2020 00:47	WG1408724
1,2-Dichloroethane	ND		1.00	1	01/10/2020 00:47	WG1408724
(S) Toluene-d8	*101*		*80.0-120*		*01/10/2020 00:47*	WG1408724
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*01/10/2020 00:47*	WG1408724
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*01/10/2020 00:47*	WG1408724

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	01/10/2020 01:08	WG1408724
Toluene	ND		1.00	1	01/10/2020 01:08	WG1408724
Ethylbenzene	ND		1.00	1	01/10/2020 01:08	WG1408724
Total Xylenes	ND		3.00	1	01/10/2020 01:08	WG1408724
Methyl tert-butyl ether	ND		1.00	1	01/10/2020 01:08	WG1408724
Naphthalene	ND		5.00	1	01/10/2020 01:08	WG1408724
1,2-Dichloroethane	ND		1.00	1	01/10/2020 01:08	WG1408724
(S) Toluene-d8	*105*		*80.0-120*		*01/10/2020 01:08*	WG1408724
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*01/10/2020 01:08*	WG1408724
(S) 1,2-Dichloroethane-d4	*100*		*70.0-130*		*01/10/2020 01:08*	WG1408724

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	01/09/2020 19:40	WG1408724
Toluene	ND		1.00	1	01/09/2020 19:40	WG1408724
Ethylbenzene	ND		1.00	1	01/09/2020 19:40	WG1408724
Total Xylenes	ND		3.00	1	01/09/2020 19:40	WG1408724
Methyl tert-butyl ether	ND		1.00	1	01/09/2020 19:40	WG1408724
Naphthalene	ND		5.00	1	01/09/2020 19:40	WG1408724
1,2-Dichloroethane	ND		1.00	1	01/09/2020 19:40	WG1408724
(S) Toluene-d8	*104*		*80.0-120*		*01/09/2020 19:40*	WG1408724
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*01/09/2020 19:40*	WG1408724
(S) 1,2-Dichloroethane-d4	*100*		*70.0-130*		*01/09/2020 19:40*	WG1408724

Method Blank (MB)

(MB) R3490394-2 01/09/20 18:15

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
1,2-Dichloroethane	U		0.361	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
(S) Toluene-d8	*102*			*80.0-120*
(S) 4-Bromofluorobenzene	*99.5*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*97.9*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3490394-1 01/09/20 17:34

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	4.80	96.0	70.0-130	
1,2-Dichloroethane	5.00	4.70	94.0	70.0-130	
Ethylbenzene	5.00	4.04	80.8	70.0-130	
Methyl tert-butyl ether	5.00	5.18	104	70.0-130	
Naphthalene	5.00	3.60	72.0	70.0-130	
Toluene	5.00	4.33	86.6	70.0-130	
Xylenes, Total	15.0	12.5	83.3	70.0-130	
(S) Toluene-d8			*100*	*80.0-120*	
(S) 4-Bromofluorobenzene			*99.3*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*97.9*	*70.0-130*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(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.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

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

Pace National 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.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

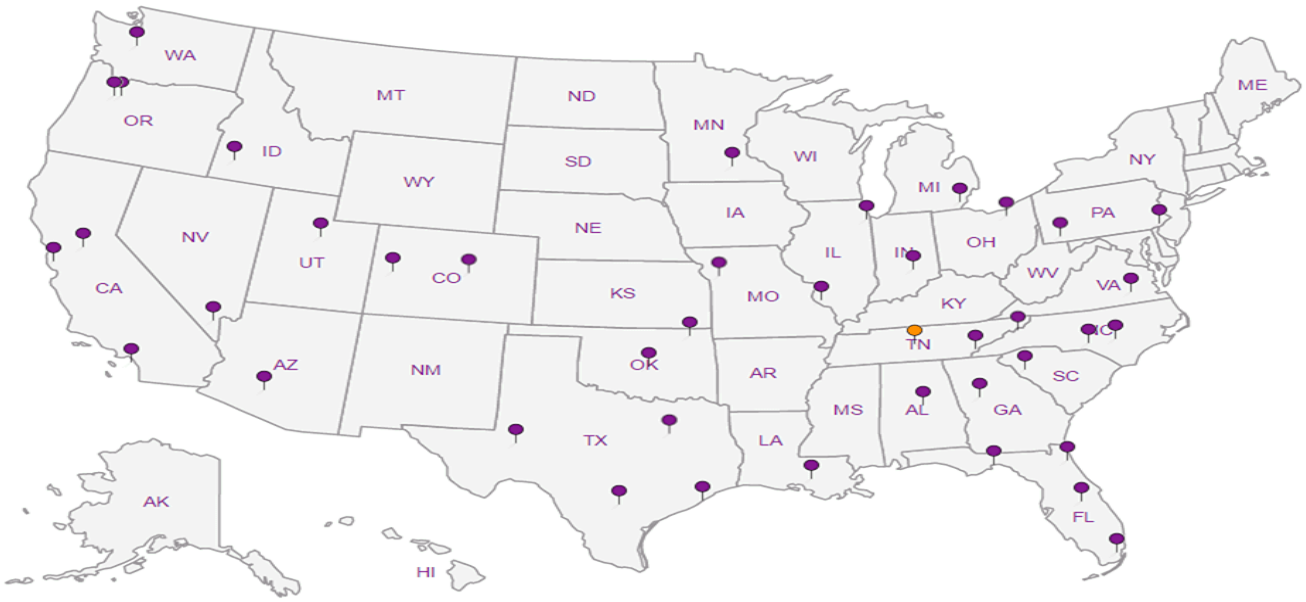
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National 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. Pace National performs all testing at our central laboratory.



Kinder Morgan- Atlanta, GA

6600 Peachtree Dunwoody Road
400 Embassy Row - Suite 600
Atlanta, GA 30328

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Pres Chk: X

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com; tom.wiley@jacobs.com

Project Description: Lewis Drive ~~Groundwater~~ SURFACE WATER

City/State Collected: BELTON, SC

Phone: 770-604-9182
Fax:

Client Project # KMLDOM20
B,CS,GEN,LDOMR,SW

Lab Project # KINCH2MGA-LEWIS12

Collected by (print): MELISSA WARREN

Site/Facility ID # LEWIS DRIVE

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260BTEXMNSC 40mlAmb-HCl	V8260BTEXMNSC-TB 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
SW11-010820	GRAB	GW	N/A	01/08/20	1150	3	X			-01
SW10-010820		GW			1260	3	X			-02
SW09-010820		GW			1210	3	X			-03
SW08-010820		GW			1220	3	X			-04
SW13-010820		GW			1230	3	X			-05
SW04-010820		GW			1245	3	X			-06
SW02-010820		GW			1250	3	X			-07
SW01-010820		GW			1310	3	X			-08
SW07-010820		GW			1320	3	X			-09
SW03-010820		GW			1335	3	X			-10

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L1177661

Table # M198

Acctnum: KINCH2MGA
Template: T131319
Prelogin: P708636
TSR: 526 - Chris McCord
PB:

Shipped Via: FedEX Standard

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: V8260BTEXMNSC = BTEX,MTBE,Naphthalene, ~~1,2-DCA.~~ NA

pH _____ Temp _____

Flow _____ Other _____

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

Tracking # 4876 1079 9211

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __ __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD SCREEN: <0.5 mR/hr

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: (Yes) No / HCl / MeoH / TBR	If preservation required by Login: Date/Time
	01/08/20	1630		1	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.2 °C / 0.1+2=3 Bottles Received: 39	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1/9/20 Time: 0830	Hold: / Condition: NCF / OK

Kinder Morgan- Atlanta, GA

6600 Peachtree Dunwoody Road
400 Embassy Row - Suite 600
Atlanta, GA 30328

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com; tom.wiley@jacobs.com

Project Description: Lewis Drive ~~Groundwater~~ SURFACE WATER

City/State Collected: BELTON, SC

Phone: 770-604-9182
Fax:

Client Project # KMLDOM20 B.CS.GEN, LDOMR.SW

Lab Project # KINCH2MGA-LEWIS12

Collected by (print): MELISSA WAMER

Site/Facility ID # LEWIS DRIVE

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Quote #

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260BTEXMNSC 40mlAmb-HCl	V8260BTEXMNSC-TB 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
SW12-010820	GRAB	GW	NA	01/08/20	1345	3	X			-11
SW14-010820		GW			1445	3	X			-12
SW05-010820		GW			1455	3	X			-13
TB01-010820		GW			NO TIME	1	X	X	TRIP BLANK	-14
		GW				3	X			
		GW				3	X			
		GW				3	X			
		GW				3	X			
		GW				3	X			
		GW				3	X			

Analysis / Container / Preservative

Pres Chk: X X

Chain of Custody Page 2 of 2

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # L117661

Table #

Acctnum: KINCH2MGA

Template: T131319

Prelogin: P708636

TSR: 526 - Chris McCord

PB:

Shipped Via: FedEX Standard

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: V8260BTEXMNSC = BTEX,MTBE,Naphthalene, ~~1,2-DCA.~~

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X Y __N
If Applicable
VOA Zero Headspace: X Y __N
Preservation Correct/Checked: __Y __N

RAD SCREEN: <0.5 mR/hr

Samples returned via: __UPS __FedEx __Courier __ _____

Tracking # 4876 1079 9211

Relinquished by : (Signature)
Date: 01/08/20 Time: 1630
Received by: (Signature)

Trip Blank Received: Yes / No
1 HCL / MeoH TBR

Relinquished by : (Signature)
Date: Time:
Received by: (Signature)

Temp: 4.2 °C Bottles Received: 39
0.1+1.2=0.3

If preservation required by Login: Date/Time

Relinquished by : (Signature)
Date: Time:
Received for lab by: (Signature) Billy Bauso
Date: 1/9/20 Time: 0830

Hold:

Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

February 18, 2020

Kinder Morgan- Atlanta, GA

Sample Delivery Group:	L1187944
Samples Received:	02/11/2020
Project Number:	KMLDON 20 B.CS.GEN.L
Description:	Lewis Drive Surface Water
Site:	LEWIS DRIVE
Report To:	Bethany Garvey Ten 10th Street NW Suite 1400 Atlanta, GA 30309

Entire Report Reviewed By:

Chris McCord
Project Manager

TABLE OF CONTENTS

SW11-021020 L1187944-01 GW

Collected by: Melissa Warren | Collected date/time: 02/10/20 11:45 | Received date/time: 02/11/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1426269	1	02/12/20 01:01	02/12/20 01:01	BMB	Mt. Juliet, TN

SW10-021020 L1187944-02 GW

Collected by: Melissa Warren | Collected date/time: 02/10/20 12:00 | Received date/time: 02/11/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1426269	1	02/12/20 01:20	02/12/20 01:20	BMB	Mt. Juliet, TN

SW13-021020 L1187944-04 GW

Collected by: Melissa Warren | Collected date/time: 02/10/20 12:35 | Received date/time: 02/11/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1426152	1	02/13/20 17:24	02/13/20 17:24	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1426269	1	02/12/20 01:40	02/12/20 01:40	BMB	Mt. Juliet, TN

SW04-021020 L1187944-05 GW

Collected by: Melissa Warren | Collected date/time: 02/10/20 15:28 | Received date/time: 02/11/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1426152	1	02/13/20 17:59	02/13/20 17:59	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1426269	1	02/12/20 01:59	02/12/20 01:59	BMB	Mt. Juliet, TN

SW02-021020 L1187944-06 GW

Collected by: Melissa Warren | Collected date/time: 02/10/20 15:42 | Received date/time: 02/11/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1426152	1	02/13/20 18:53	02/13/20 18:53	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1426269	1	02/12/20 02:18	02/12/20 02:18	BMB	Mt. Juliet, TN

SW14-021020 L1187944-07 GW

Collected by: Melissa Warren | Collected date/time: 02/10/20 16:30 | Received date/time: 02/11/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1426152	1	02/13/20 19:11	02/13/20 19:11	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1426269	1	02/12/20 02:37	02/12/20 02:37	BMB	Mt. Juliet, TN

SW05-021020 L1187944-08 GW

Collected by: Melissa Warren | Collected date/time: 02/10/20 16:56 | Received date/time: 02/11/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1426152	1	02/13/20 19:29	02/13/20 19:29	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1426269	1	02/12/20 02:57	02/12/20 02:57	BMB	Mt. Juliet, TN

SW07-021020 L1187944-09 GW

Collected by: Melissa Warren
Collected date/time: 02/10/20 15:30
Received date/time: 02/11/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1426269	1	02/12/20 03:16	02/12/20 03:16	BMB	Mt. Juliet, TN

SW03-021020 L1187944-10 GW

Collected by: Melissa Warren
Collected date/time: 02/10/20 15:40
Received date/time: 02/11/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1426269	1	02/12/20 03:36	02/12/20 03:36	BMB	Mt. Juliet, TN

TB01-021020 L1187944-11 GW

Collected by: Melissa Warren
Collected date/time: 02/10/20 00:00
Received date/time: 02/11/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1426269	1	02/11/20 23:45	02/11/20 23:45	BMB	Mt. Juliet, TN

SW08-021020 L1187944-12 GW

Collected by: Melissa Warren
Collected date/time: 02/10/20 12:20
Received date/time: 02/11/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1426269	1	02/12/20 03:55	02/12/20 03:55	BMB	Mt. Juliet, TN

SW12-021020 L1187944-13 GW

Collected by: Melissa Warren
Collected date/time: 02/10/20 16:00
Received date/time: 02/11/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1426269	1	02/12/20 04:14	02/12/20 04:14	BMB	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, 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.

Chris McCord
Project Manager

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/12/2020 01:01	WG1426269
Toluene	ND		1.00	1	02/12/2020 01:01	WG1426269
Ethylbenzene	ND		1.00	1	02/12/2020 01:01	WG1426269
o-Xylene	ND		1.00	1	02/12/2020 01:01	WG1426269
m&p-Xylene	ND		2.00	1	02/12/2020 01:01	WG1426269
Total Xylenes	ND		3.00	1	02/12/2020 01:01	WG1426269
Methyl tert-butyl ether	ND		1.00	1	02/12/2020 01:01	WG1426269
Naphthalene	ND		5.00	1	02/12/2020 01:01	WG1426269
(S) Toluene-d8	*106*		*80.0-120*		*02/12/2020 01:01*	WG1426269
(S) 4-Bromofluorobenzene	*92.4*		*77.0-126*		*02/12/2020 01:01*	WG1426269
(S) 1,2-Dichloroethane-d4	*98.1*		*70.0-130*		*02/12/2020 01:01*	WG1426269

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/12/2020 01:20	WG1426269
Toluene	ND		1.00	1	02/12/2020 01:20	WG1426269
Ethylbenzene	ND		1.00	1	02/12/2020 01:20	WG1426269
o-Xylene	ND		1.00	1	02/12/2020 01:20	WG1426269
m&p-Xylene	ND		2.00	1	02/12/2020 01:20	WG1426269
Total Xylenes	ND		3.00	1	02/12/2020 01:20	WG1426269
Methyl tert-butyl ether	ND		1.00	1	02/12/2020 01:20	WG1426269
Naphthalene	ND		5.00	1	02/12/2020 01:20	WG1426269
(S) Toluene-d8	*107*		*80.0-120*		*02/12/2020 01:20*	WG1426269
(S) 4-Bromofluorobenzene	*94.4*		*77.0-126*		*02/12/2020 01:20*	WG1426269
(S) 1,2-Dichloroethane-d4	*97.2*		*70.0-130*		*02/12/2020 01:20*	WG1426269

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	7070		5000	1	02/13/2020 17:24	WG1426152

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	4.44		1.00	1	02/12/2020 01:40	WG1426269
Toluene	ND		1.00	1	02/12/2020 01:40	WG1426269
Ethylbenzene	ND		1.00	1	02/12/2020 01:40	WG1426269
o-Xylene	ND		1.00	1	02/12/2020 01:40	WG1426269
m&p-Xylene	ND		2.00	1	02/12/2020 01:40	WG1426269
Total Xylenes	ND		3.00	1	02/12/2020 01:40	WG1426269
Methyl tert-butyl ether	1.50		1.00	1	02/12/2020 01:40	WG1426269
Naphthalene	ND		5.00	1	02/12/2020 01:40	WG1426269
(S) Toluene-d8	*109*		*80.0-120*		*02/12/2020 01:40*	WG1426269
(S) 4-Bromofluorobenzene	*92.7*		*77.0-126*		*02/12/2020 01:40*	WG1426269
(S) 1,2-Dichloroethane-d4	*98.3*		*70.0-130*		*02/12/2020 01:40*	WG1426269

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	ND		5000	1	02/13/2020 17:59	WG1426152

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/12/2020 01:59	WG1426269
Toluene	ND		1.00	1	02/12/2020 01:59	WG1426269
Ethylbenzene	ND		1.00	1	02/12/2020 01:59	WG1426269
o-Xylene	ND		1.00	1	02/12/2020 01:59	WG1426269
m&p-Xylene	ND		2.00	1	02/12/2020 01:59	WG1426269
Total Xylenes	ND		3.00	1	02/12/2020 01:59	WG1426269
Methyl tert-butyl ether	ND		1.00	1	02/12/2020 01:59	WG1426269
Naphthalene	ND		5.00	1	02/12/2020 01:59	WG1426269
(S) Toluene-d8	*107*		*80.0-120*		*02/12/2020 01:59*	WG1426269
(S) 4-Bromofluorobenzene	*94.5*		*77.0-126*		*02/12/2020 01:59*	WG1426269
(S) 1,2-Dichloroethane-d4	*99.1*		*70.0-130*		*02/12/2020 01:59*	WG1426269

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	ND		5000	1	02/13/2020 18:53	WG1426152

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	23.7		1.00	1	02/12/2020 02:18	WG1426269
Toluene	1.92		1.00	1	02/12/2020 02:18	WG1426269
Ethylbenzene	ND		1.00	1	02/12/2020 02:18	WG1426269
o-Xylene	3.03		1.00	1	02/12/2020 02:18	WG1426269
m&p-Xylene	4.60		2.00	1	02/12/2020 02:18	WG1426269
Total Xylenes	7.63		3.00	1	02/12/2020 02:18	WG1426269
Methyl tert-butyl ether	1.37		1.00	1	02/12/2020 02:18	WG1426269
Naphthalene	ND		5.00	1	02/12/2020 02:18	WG1426269
(S) Toluene-d8	*107*		*80.0-120*		*02/12/2020 02:18*	WG1426269
(S) 4-Bromofluorobenzene	*98.3*		*77.0-126*		*02/12/2020 02:18*	WG1426269
(S) 1,2-Dichloroethane-d4	*95.2*		*70.0-130*		*02/12/2020 02:18*	WG1426269

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	14100		5000	1	02/13/2020 19:11	WG1426152

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/12/2020 02:37	WG1426269
Toluene	ND		1.00	1	02/12/2020 02:37	WG1426269
Ethylbenzene	ND		1.00	1	02/12/2020 02:37	WG1426269
o-Xylene	ND		1.00	1	02/12/2020 02:37	WG1426269
m&p-Xylene	ND		2.00	1	02/12/2020 02:37	WG1426269
Total Xylenes	ND		3.00	1	02/12/2020 02:37	WG1426269
Methyl tert-butyl ether	ND		1.00	1	02/12/2020 02:37	WG1426269
Naphthalene	ND		5.00	1	02/12/2020 02:37	WG1426269
(S) Toluene-d8	*106*		*80.0-120*		*02/12/2020 02:37*	WG1426269
(S) 4-Bromofluorobenzene	*94.6*		*77.0-126*		*02/12/2020 02:37*	WG1426269
(S) 1,2-Dichloroethane-d4	*99.7*		*70.0-130*		*02/12/2020 02:37*	WG1426269

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	ND		5000	1	02/13/2020 19:29	WG1426152

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/12/2020 02:57	WG1426269
Toluene	ND		1.00	1	02/12/2020 02:57	WG1426269
Ethylbenzene	ND		1.00	1	02/12/2020 02:57	WG1426269
o-Xylene	ND		1.00	1	02/12/2020 02:57	WG1426269
m&p-Xylene	ND		2.00	1	02/12/2020 02:57	WG1426269
Total Xylenes	ND		3.00	1	02/12/2020 02:57	WG1426269
Methyl tert-butyl ether	ND		1.00	1	02/12/2020 02:57	WG1426269
Naphthalene	ND		5.00	1	02/12/2020 02:57	WG1426269
(S) Toluene-d8	*108*		*80.0-120*		*02/12/2020 02:57*	WG1426269
(S) 4-Bromofluorobenzene	*93.3*		*77.0-126*		*02/12/2020 02:57*	WG1426269
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*02/12/2020 02:57*	WG1426269

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/12/2020 03:16	WG1426269
Toluene	ND		1.00	1	02/12/2020 03:16	WG1426269
Ethylbenzene	ND		1.00	1	02/12/2020 03:16	WG1426269
o-Xylene	ND		1.00	1	02/12/2020 03:16	WG1426269
m&p-Xylene	ND		2.00	1	02/12/2020 03:16	WG1426269
Total Xylenes	ND		3.00	1	02/12/2020 03:16	WG1426269
Methyl tert-butyl ether	ND		1.00	1	02/12/2020 03:16	WG1426269
Naphthalene	ND		5.00	1	02/12/2020 03:16	WG1426269
(S) Toluene-d8	*109*		*80.0-120*		*02/12/2020 03:16*	WG1426269
(S) 4-Bromofluorobenzene	*92.4*		*77.0-126*		*02/12/2020 03:16*	WG1426269
(S) 1,2-Dichloroethane-d4	*94.6*		*70.0-130*		*02/12/2020 03:16*	WG1426269

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/12/2020 03:36	WG1426269
Toluene	ND		1.00	1	02/12/2020 03:36	WG1426269
Ethylbenzene	ND		1.00	1	02/12/2020 03:36	WG1426269
o-Xylene	ND		1.00	1	02/12/2020 03:36	WG1426269
m&p-Xylene	ND		2.00	1	02/12/2020 03:36	WG1426269
Total Xylenes	ND		3.00	1	02/12/2020 03:36	WG1426269
Methyl tert-butyl ether	ND		1.00	1	02/12/2020 03:36	WG1426269
Naphthalene	ND		5.00	1	02/12/2020 03:36	WG1426269
(S) Toluene-d8	*110*		*80.0-120*		*02/12/2020 03:36*	WG1426269
(S) 4-Bromofluorobenzene	*91.9*		*77.0-126*		*02/12/2020 03:36*	WG1426269
(S) 1,2-Dichloroethane-d4	*90.4*		*70.0-130*		*02/12/2020 03:36*	WG1426269

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	02/11/2020 23:45	WG1426269
Toluene	ND		1.00	1	02/11/2020 23:45	WG1426269
Ethylbenzene	ND		1.00	1	02/11/2020 23:45	WG1426269
o-Xylene	ND		1.00	1	02/11/2020 23:45	WG1426269
m&p-Xylene	ND		2.00	1	02/11/2020 23:45	WG1426269
Total Xylenes	ND		3.00	1	02/11/2020 23:45	WG1426269
Methyl tert-butyl ether	ND		1.00	1	02/11/2020 23:45	WG1426269
Naphthalene	ND		5.00	1	02/11/2020 23:45	WG1426269
(S) Toluene-d8	*108*		*80.0-120*		*02/11/2020 23:45*	WG1426269
(S) 4-Bromofluorobenzene	*91.7*		*77.0-126*		*02/11/2020 23:45*	WG1426269
(S) 1,2-Dichloroethane-d4	*97.4*		*70.0-130*		*02/11/2020 23:45*	WG1426269

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	8.05		1.00	1	02/12/2020 03:55	WG1426269
Toluene	ND		1.00	1	02/12/2020 03:55	WG1426269
Ethylbenzene	ND		1.00	1	02/12/2020 03:55	WG1426269
o-Xylene	1.19		1.00	1	02/12/2020 03:55	WG1426269
m&p-Xylene	ND		2.00	1	02/12/2020 03:55	WG1426269
Total Xylenes	ND		3.00	1	02/12/2020 03:55	WG1426269
Methyl tert-butyl ether	ND		1.00	1	02/12/2020 03:55	WG1426269
Naphthalene	ND		5.00	1	02/12/2020 03:55	WG1426269
(S) Toluene-d8	*108*		*80.0-120*		*02/12/2020 03:55*	WG1426269
(S) 4-Bromofluorobenzene	*95.7*		*77.0-126*		*02/12/2020 03:55*	WG1426269
(S) 1,2-Dichloroethane-d4	*95.9*		*70.0-130*		*02/12/2020 03:55*	WG1426269

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	18.9		1.00	1	02/12/2020 04:14	WG1426269
Toluene	2.68		1.00	1	02/12/2020 04:14	WG1426269
Ethylbenzene	1.54		1.00	1	02/12/2020 04:14	WG1426269
o-Xylene	5.13		1.00	1	02/12/2020 04:14	WG1426269
m&p-Xylene	20.7		2.00	1	02/12/2020 04:14	WG1426269
Total Xylenes	25.8		3.00	1	02/12/2020 04:14	WG1426269
Methyl tert-butyl ether	2.39		1.00	1	02/12/2020 04:14	WG1426269
Naphthalene	ND		5.00	1	02/12/2020 04:14	WG1426269
(S) Toluene-d8	*109*		*80.0-120*		*02/12/2020 04:14*	WG1426269
(S) 4-Bromofluorobenzene	*100*		*77.0-126*		*02/12/2020 04:14*	WG1426269
(S) 1,2-Dichloroethane-d4	*91.1*		*70.0-130*		*02/12/2020 04:14*	WG1426269

Method Blank (MB)

(MB) R3499796-1 02/13/20 15:52

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Sulfate	U		77.4	5000

L1187944-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1187944-04 02/13/20 17:24 • (DUP) R3499796-3 02/13/20 17:42

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	7070	6200	1	13.1		15

L1188020-20 Original Sample (OS) • Duplicate (DUP)

(OS) L1188020-20 02/13/20 21:52 • (DUP) R3499796-6 02/13/20 22:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	634000	626000	20	1.25		15

Laboratory Control Sample (LCS)

(LCS) R3499796-2 02/13/20 16:10

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Sulfate	40000	39800	99.6	80.0-120	

L1187944-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1187944-05 02/13/20 17:59 • (MS) R3499796-4 02/13/20 18:17 • (MSD) R3499796-5 02/13/20 18:35

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfate	50000	ND	52900	52800	101	101	1	80.0-120			0.283	15

L1188020-23 Original Sample (OS) • Matrix Spike (MS)

(OS) L1188020-23 02/13/20 23:04 • (MS) R3499796-7 02/13/20 23:58

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	ug/l	ug/l	ug/l	%		%	
Sulfate	50000	35700	84000	96.7	1	80.0-120	

Method Blank (MB)

(MB) R3499715-2 02/11/20 23:26

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Naphthalene	U		1.00	5.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
o-Xylene	U		0.341	1.00
m&p-Xylenes	U		0.719	2.00
(S) Toluene-d8	*105*			*80.0-120*
(S) 4-Bromofluorobenzene	*95.4*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3499715-1 02/11/20 22:48

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	6.07	121	70.0-130	
Ethylbenzene	5.00	5.02	100	70.0-130	
Methyl tert-butyl ether	5.00	3.71	74.2	70.0-130	
Naphthalene	5.00	4.58	91.6	70.0-130	
Toluene	5.00	4.42	88.4	70.0-130	
Xylenes, Total	15.0	15.3	102	70.0-130	
o-Xylene	5.00	5.23	105	70.0-130	
m&p-Xylenes	10.0	10.1	101	70.0-130	
(S) Toluene-d8			*103*	*80.0-120*	
(S) 4-Bromofluorobenzene			*102*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*94.3*	*70.0-130*	

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

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(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.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

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

Pace National 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.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

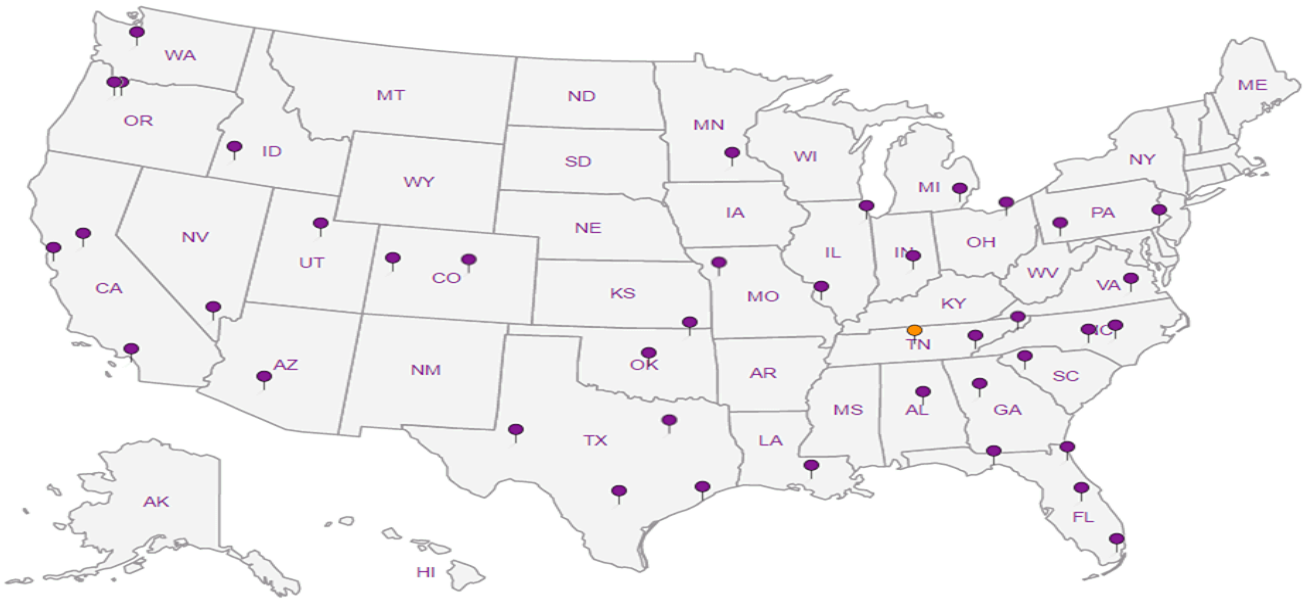
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National 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. Pace National performs all testing at our central laboratory.



Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com; tom.wiley@jacobs.com

Project Description: Lewis Drive Surface Water

City/State Collected: BELTON, SC

Please Circle: PT MT CT ET

Phone: 770-604-9182
Fax:

Client Project # KMLDGN20
B,CS,GEN,LDOMR,SW

Lab Project # KINCH2MGA-LEWIS

Collected by (print): MELISSA WARNER

Site/Facility ID # LEWIS DRIVE

P.O. #

Collected by (signature):

Quote #

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260BTEXMNSC 40mlAmb-HCl	Sulfate USEPA 9056A								Remarks	Sample # (lab only)
SW11-021020	GRAB	GW	NA	02/10/20	1145	3	X										-01
SW10-021020		GW			1200	3	X										-02
SW09-021020		GW			1215	3	X										-03
SW13-021020		GW			1235	4	X	X									-04
SW04-021020		GW			1528	4	X	X									-05
SW02-021020		GW			~~1540~~ 1542	4	X	X								TIME 1542	-06
SW14-021020		GW			1630	4	X	X									-07
SW05-021020		GW			~~1654~~ 1656	4	X	X								TIME 1656	-08
SW07-021020		GW			1530	3	X										-09
SW03-021020		GW			1540	3	X										-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: V8260BTEXMNSC=BTEX + Naphthalene + MTBE.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: _ UPS __ FedEx __ Courier _____

Tracking # 1382 4821 9294

Sample Receipt Checklist
COC Seal Present/Intact: __NP Y __N
COC Signed/Accurate: Y __N
Bottles arrive intact: Y __N
Correct bottles used: Y __N
Sufficient volume sent: Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	If preservation required by Login: Date/Time
	2/10/20	1830			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.3 °C .7+2=.9 Bottles Received: 41	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 2/11/20 Time: 8:45	Hold: / Condition: NCF / OK

Chain of Custody Page 1 of 2

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1187944

T J007

Acctnum: KINCH2MGA

Template: T155770

Prelogin: P754957

PM: 526 - Chris McCord

PB: 2-5-2020

Shipped Via: FedEX Ground

Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com; tom.wiley@jacobs.com

Project Description: Lewis Drive Surface Water

City/State Collected: BELTON, SC

Please Circle: PT MT CT ET

Phone: 770-604-9182
Fax:

Client Project # KMLDOM20 B.CS.GEN.LDOMR.SW

Lab Project # KINCH2MGA-LEWIS

Collected by (print): MELISSA WARNER

Site/Facility ID # LEWIS DRIVE

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Date Results Needed

Quote #

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260BTEXMNSC 40mlAmb-HCl	TRIP BLANK									Remarks	Sample # (lab only)
							Pres Chk	X										
TB01-021020	GRAB	GW	NA	02/10/20	NO TIME	3	X	X										-11
SW08-021020		GW	NA		1220	3	X											-12
SW12-021020		GW			1600	3	X											-13
		GW				3	X											
		GW				3	X											

Analysis / Container / Preservative

Chain of Custody Page 2 of 2

Pace Analytical®
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12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1187944

Table #

Acctnum: KINCH2MGA

Template: T155770

Prelogin: P754957

PM: 526 - Chris McCord

PB: 2-5-2020 GM

Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: V8260BTEXMNSC=BTEX + Naphthalene + MTBE.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 1382 4821 9794

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X Y __N
If Applicable
VOA Zero Headspace: X Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: X Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	If preservation required by Login: Date/Time
	2/10/20	1830			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.3 °C Bottles Received: 41	
				7+2=9	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 2/11/20 Time: 08:45	Hold: Condition: NCF / OK

Andy Vann

From: Jason Romer
Sent: Tuesday, February 11, 2020 10:48 AM
To: Project Service
Cc: Chris McCord
Subject: Samples arriving today from KINCH2MGA - place SW09-021020 on HOLD
Attachments: 2020_02_10_COC_Lewis_Drive.pdf

Per client request, do not log sample SW09-021020. Please place it on HOLD.

Copy of COC attached if needed.

Thanks,

Jason Romer
Project Manager

Pace Analytical National Center for Testing & Innovation
12065 Lebanon Road | Mt. Juliet, TN 37122
615.773.9713
jromer@pacenational.com | pacenational.com

From: Garvey, Bethany/ATL [mailto:Bethany.Garvey@jacobs.com]
Sent: Tuesday, February 11, 2020 8:36 AM
To: Jason Romer
Cc: Wiley, Tom/ATL
Subject: FW: Lewis Drive - SW sampling 2/10/20

Jason,

I received Chris's out of office. Please see email below regarding the surface water samples coming in today from Lewis Drive. We need SW-09 canceled for analysis.

Thanks,
Bethany

From: Garvey, Bethany/ATL
Sent: Tuesday, February 11, 2020 9:24 AM
To: Chris McCord <CMcCord@pacenational.com>
Cc: Wiley, Tom/ATL <tom.wiley@jacobs.com>; Sutton, Collin <Collin.Sutton@jacobs.com>; Warren, Melissa/ATL <MELISSA.WARREN@jacobs.com>
Subject: Lewis Drive - SW sampling 2/10/20

Hi Chris,

You guys will be receiving the attached surface water samples from Lewis Drive today. Please cancel the analysis of SW09-021020.

Thanks,
Bethany Garvey | Jacobs | Environmental Chemist
O:+404.751.5651 | M:+404.713.1880 | bethany.garvey@jacobs.com
Ten 10th Street NW, Suite 1400 | Atlanta, GA 30309 | USA
www.jacobs.com

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

March 23, 2020

Kinder Morgan- Atlanta, GA

Sample Delivery Group:	L1198760
Samples Received:	03/13/2020
Project Number:	KMLDOM20 B CS
Description:	Lewis Drive Surface Water
Site:	LEWIS DRIVE
Report To:	Bethany Garvey Ten 10th Street NW Suite 1400 Atlanta, GA 30309

Entire Report Reviewed By:

Chris McCord
Project Manager

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 Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

TABLE OF CONTENTS

TB04-031220 L1198760-01 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 00:00 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/14/20 22:47	03/14/20 22:47	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/19/20 23:19	03/19/20 23:19	JHH	Mt. Juliet, TN

SW03-031220 L1198760-02 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 13:35 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/14/20 23:49	03/14/20 23:49	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/20/20 00:20	03/20/20 00:20	JHH	Mt. Juliet, TN

SW10-031220 L1198760-03 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 09:25 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/15/20 00:09	03/15/20 00:09	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/20/20 00:40	03/20/20 00:40	JHH	Mt. Juliet, TN

SW09-031220 L1198760-04 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 09:35 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/15/20 00:30	03/15/20 00:30	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/20/20 01:01	03/20/20 01:01	JHH	Mt. Juliet, TN

SW14-031220 L1198760-05 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 14:15 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1444547	1	03/17/20 02:14	03/17/20 02:14	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/15/20 00:50	03/15/20 00:50	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/20/20 01:21	03/20/20 01:21	JHH	Mt. Juliet, TN

SW04-031220 L1198760-06 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 10:40 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1444547	1	03/17/20 02:32	03/17/20 02:32	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/15/20 01:10	03/15/20 01:10	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/20/20 01:41	03/20/20 01:41	JHH	Mt. Juliet, TN

SW01-031220 L1198760-07 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 13:00 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1444547	1	03/17/20 02:50	03/17/20 02:50	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/15/20 01:31	03/15/20 01:31	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/20/20 02:02	03/20/20 02:02	JHH	Mt. Juliet, TN

SW12-031220 L1198760-08 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 13:25 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1444547	1	03/17/20 03:07	03/17/20 03:07	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/15/20 01:51	03/15/20 01:51	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/20/20 02:22	03/20/20 02:22	JHH	Mt. Juliet, TN

SW07-031220 L1198760-09 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 13:10 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/15/20 02:14	03/15/20 02:14	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/20/20 02:42	03/20/20 02:42	JHH	Mt. Juliet, TN

SW05-031220 L1198760-10 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 14:55 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1444547	1	03/17/20 03:25	03/17/20 03:25	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/15/20 02:32	03/15/20 02:32	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/20/20 03:03	03/20/20 03:03	JHH	Mt. Juliet, TN

SW11-031220 L1198760-11 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 09:15 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/15/20 02:53	03/15/20 02:53	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/20/20 03:23	03/20/20 03:23	JHH	Mt. Juliet, TN

SW13-031220 L1198760-12 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 10:15 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1444547	1	03/17/20 03:43	03/17/20 03:43	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/15/20 03:13	03/15/20 03:13	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/20/20 03:43	03/20/20 03:43	JHH	Mt. Juliet, TN

SW08-031220 L1198760-13 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 09:45 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/15/20 03:34	03/15/20 03:34	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/20/20 04:04	03/20/20 04:04	JHH	Mt. Juliet, TN

SW02-031220 L1198760-14 GW

Collected by: Melissa Warren | Collected date/time: 03/12/20 10:50 | Received date/time: 03/13/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1444547	1	03/17/20 04:01	03/17/20 04:01	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1444259	1	03/15/20 03:55	03/15/20 03:55	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1446546	1	03/20/20 04:24	03/20/20 04:24	JHH	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, 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.

Chris McCord
Project Manager

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 22:47	WG1444259
Toluene	ND		1.00	1	03/14/2020 22:47	WG1444259
Ethylbenzene	ND		1.00	1	03/14/2020 22:47	WG1444259
o-Xylene	ND		1.00	1	03/14/2020 22:47	WG1444259
m&p-Xylene	ND		2.00	1	03/14/2020 22:47	WG1444259
Total Xylenes	ND		3.00	1	03/14/2020 22:47	WG1444259
Methyl tert-butyl ether	ND		1.00	1	03/14/2020 22:47	WG1444259
Naphthalene	ND		5.00	1	03/19/2020 23:19	WG1446546
(S) Toluene-d8	*109*		*80.0-120*		*03/14/2020 22:47*	WG1444259
(S) Toluene-d8	*109*		*80.0-120*		*03/19/2020 23:19*	WG1446546
(S) 4-Bromofluorobenzene	*96.4*		*77.0-126*		*03/14/2020 22:47*	WG1444259
(S) 4-Bromofluorobenzene	*109*		*77.0-126*		*03/19/2020 23:19*	WG1446546
(S) 1,2-Dichloroethane-d4	*115*		*70.0-130*		*03/14/2020 22:47*	WG1444259
(S) 1,2-Dichloroethane-d4	*108*		*70.0-130*		*03/19/2020 23:19*	WG1446546

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/14/2020 23:49	WG1444259
Toluene	ND		1.00	1	03/14/2020 23:49	WG1444259
Ethylbenzene	ND		1.00	1	03/14/2020 23:49	WG1444259
o-Xylene	ND		1.00	1	03/14/2020 23:49	WG1444259
m&p-Xylene	ND		2.00	1	03/14/2020 23:49	WG1444259
Total Xylenes	ND		3.00	1	03/14/2020 23:49	WG1444259
Methyl tert-butyl ether	ND		1.00	1	03/14/2020 23:49	WG1444259
Naphthalene	ND		5.00	1	03/20/2020 00:20	WG1446546
(S) Toluene-d8	*102*		*80.0-120*		*03/14/2020 23:49*	WG1444259
(S) Toluene-d8	*113*		*80.0-120*		*03/20/2020 00:20*	WG1446546
(S) 4-Bromofluorobenzene	*92.9*		*77.0-126*		*03/14/2020 23:49*	WG1444259
(S) 4-Bromofluorobenzene	*105*		*77.0-126*		*03/20/2020 00:20*	WG1446546
(S) 1,2-Dichloroethane-d4	*121*		*70.0-130*		*03/14/2020 23:49*	WG1444259
(S) 1,2-Dichloroethane-d4	*105*		*70.0-130*		*03/20/2020 00:20*	WG1446546

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/15/2020 00:09	WG1444259
Toluene	ND		1.00	1	03/15/2020 00:09	WG1444259
Ethylbenzene	ND		1.00	1	03/15/2020 00:09	WG1444259
o-Xylene	ND		1.00	1	03/15/2020 00:09	WG1444259
m&p-Xylene	ND		2.00	1	03/15/2020 00:09	WG1444259
Total Xylenes	ND		3.00	1	03/15/2020 00:09	WG1444259
Methyl tert-butyl ether	ND		1.00	1	03/15/2020 00:09	WG1444259
Naphthalene	ND		5.00	1	03/20/2020 00:40	WG1446546
(S) Toluene-d8	*105*		*80.0-120*		*03/15/2020 00:09*	WG1444259
(S) Toluene-d8	*116*		*80.0-120*		*03/20/2020 00:40*	WG1446546
(S) 4-Bromofluorobenzene	*92.1*		*77.0-126*		*03/15/2020 00:09*	WG1444259
(S) 4-Bromofluorobenzene	*103*		*77.0-126*		*03/20/2020 00:40*	WG1446546
(S) 1,2-Dichloroethane-d4	*115*		*70.0-130*		*03/15/2020 00:09*	WG1444259
(S) 1,2-Dichloroethane-d4	*102*		*70.0-130*		*03/20/2020 00:40*	WG1446546

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/15/2020 00:30	WG1444259
Toluene	ND		1.00	1	03/15/2020 00:30	WG1444259
Ethylbenzene	ND		1.00	1	03/15/2020 00:30	WG1444259
o-Xylene	ND		1.00	1	03/15/2020 00:30	WG1444259
m&p-Xylene	ND		2.00	1	03/15/2020 00:30	WG1444259
Total Xylenes	ND		3.00	1	03/15/2020 00:30	WG1444259
Methyl tert-butyl ether	1.20		1.00	1	03/15/2020 00:30	WG1444259
Naphthalene	ND		5.00	1	03/20/2020 01:01	WG1446546
(S) Toluene-d8	*103*		*80.0-120*		*03/15/2020 00:30*	WG1444259
(S) Toluene-d8	*113*		*80.0-120*		*03/20/2020 01:01*	WG1446546
(S) 4-Bromofluorobenzene	*94.4*		*77.0-126*		*03/15/2020 00:30*	WG1444259
(S) 4-Bromofluorobenzene	*107*		*77.0-126*		*03/20/2020 01:01*	WG1446546
(S) 1,2-Dichloroethane-d4	*116*		*70.0-130*		*03/15/2020 00:30*	WG1444259
(S) 1,2-Dichloroethane-d4	*105*		*70.0-130*		*03/20/2020 01:01*	WG1446546

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	9660		5000	1	03/17/2020 02:14	WG1444547

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/15/2020 00:50	WG1444259
Toluene	ND		1.00	1	03/15/2020 00:50	WG1444259
Ethylbenzene	ND		1.00	1	03/15/2020 00:50	WG1444259
o-Xylene	ND		1.00	1	03/15/2020 00:50	WG1444259
m&p-Xylene	ND		2.00	1	03/15/2020 00:50	WG1444259
Total Xylenes	ND		3.00	1	03/15/2020 00:50	WG1444259
Methyl tert-butyl ether	ND		1.00	1	03/15/2020 00:50	WG1444259
Naphthalene	ND		5.00	1	03/20/2020 01:21	WG1446546
(S) Toluene-d8	*101*		*80.0-120*		*03/15/2020 00:50*	WG1444259
(S) Toluene-d8	*115*		*80.0-120*		*03/20/2020 01:21*	WG1446546
(S) 4-Bromofluorobenzene	*91.3*		*77.0-126*		*03/15/2020 00:50*	WG1444259
(S) 4-Bromofluorobenzene	*105*		*77.0-126*		*03/20/2020 01:21*	WG1446546
(S) 1,2-Dichloroethane-d4	*117*		*70.0-130*		*03/15/2020 00:50*	WG1444259
(S) 1,2-Dichloroethane-d4	*105*		*70.0-130*		*03/20/2020 01:21*	WG1446546

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	ND		5000	1	03/17/2020 02:32	WG1444547

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	5.97		1.00	1	03/15/2020 01:10	WG1444259
Toluene	1.09		1.00	1	03/15/2020 01:10	WG1444259
Ethylbenzene	ND		1.00	1	03/15/2020 01:10	WG1444259
o-Xylene	1.09		1.00	1	03/15/2020 01:10	WG1444259
m&p-Xylene	ND		2.00	1	03/15/2020 01:10	WG1444259
Total Xylenes	ND		3.00	1	03/15/2020 01:10	WG1444259
Methyl tert-butyl ether	2.05		1.00	1	03/15/2020 01:10	WG1444259
Naphthalene	ND		5.00	1	03/20/2020 01:41	WG1446546
(S) Toluene-d8	*107*		*80.0-120*		*03/15/2020 01:10*	WG1444259
(S) Toluene-d8	*111*		*80.0-120*		*03/20/2020 01:41*	WG1446546
(S) 4-Bromofluorobenzene	*95.2*		*77.0-126*		*03/15/2020 01:10*	WG1444259
(S) 4-Bromofluorobenzene	*104*		*77.0-126*		*03/20/2020 01:41*	WG1446546
(S) 1,2-Dichloroethane-d4	*116*		*70.0-130*		*03/15/2020 01:10*	WG1444259
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*03/20/2020 01:41*	WG1446546

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	ND		5000	1	03/17/2020 02:50	WG1444547

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	7.99		1.00	1	03/15/2020 01:31	WG1444259
Toluene	2.04		1.00	1	03/15/2020 01:31	WG1444259
Ethylbenzene	ND		1.00	1	03/15/2020 01:31	WG1444259
o-Xylene	1.19		1.00	1	03/15/2020 01:31	WG1444259
m&p-Xylene	ND		2.00	1	03/15/2020 01:31	WG1444259
Total Xylenes	ND		3.00	1	03/15/2020 01:31	WG1444259
Methyl tert-butyl ether	1.12		1.00	1	03/15/2020 01:31	WG1444259
Naphthalene	ND		5.00	1	03/20/2020 02:02	WG1446546
(S) Toluene-d8	*98.9*		*80.0-120*		*03/15/2020 01:31*	WG1444259
(S) Toluene-d8	*109*		*80.0-120*		*03/20/2020 02:02*	WG1446546
(S) 4-Bromofluorobenzene	*89.2*		*77.0-126*		*03/15/2020 01:31*	WG1444259
(S) 4-Bromofluorobenzene	*105*		*77.0-126*		*03/20/2020 02:02*	WG1446546
(S) 1,2-Dichloroethane-d4	*115*		*70.0-130*		*03/15/2020 01:31*	WG1444259
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*03/20/2020 02:02*	WG1446546

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	ND		5000	1	03/17/2020 03:07	WG1444547

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/15/2020 01:51	WG1444259
Toluene	ND		1.00	1	03/15/2020 01:51	WG1444259
Ethylbenzene	ND		1.00	1	03/15/2020 01:51	WG1444259
o-Xylene	ND		1.00	1	03/15/2020 01:51	WG1444259
m&p-Xylene	ND		2.00	1	03/15/2020 01:51	WG1444259
Total Xylenes	ND		3.00	1	03/15/2020 01:51	WG1444259
Methyl tert-butyl ether	ND		1.00	1	03/15/2020 01:51	WG1444259
Naphthalene	ND		5.00	1	03/20/2020 02:22	WG1446546
(S) Toluene-d8	*101*		*80.0-120*		*03/15/2020 01:51*	WG1444259
(S) Toluene-d8	*112*		*80.0-120*		*03/20/2020 02:22*	WG1446546
(S) 4-Bromofluorobenzene	*91.6*		*77.0-126*		*03/15/2020 01:51*	WG1444259
(S) 4-Bromofluorobenzene	*104*		*77.0-126*		*03/20/2020 02:22*	WG1446546
(S) 1,2-Dichloroethane-d4	*118*		*70.0-130*		*03/15/2020 01:51*	WG1444259
(S) 1,2-Dichloroethane-d4	*105*		*70.0-130*		*03/20/2020 02:22*	WG1446546

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/15/2020 02:14	WG1444259
Toluene	ND		1.00	1	03/15/2020 02:14	WG1444259
Ethylbenzene	ND		1.00	1	03/15/2020 02:14	WG1444259
o-Xylene	ND		1.00	1	03/15/2020 02:14	WG1444259
m&p-Xylene	ND		2.00	1	03/15/2020 02:14	WG1444259
Total Xylenes	ND		3.00	1	03/15/2020 02:14	WG1444259
Methyl tert-butyl ether	ND		1.00	1	03/15/2020 02:14	WG1444259
Naphthalene	ND		5.00	1	03/20/2020 02:42	WG1446546
(S) Toluene-d8	*104*		*80.0-120*		*03/15/2020 02:14*	WG1444259
(S) Toluene-d8	*116*		*80.0-120*		*03/20/2020 02:42*	WG1446546
(S) 4-Bromofluorobenzene	*97.4*		*77.0-126*		*03/15/2020 02:14*	WG1444259
(S) 4-Bromofluorobenzene	*104*		*77.0-126*		*03/20/2020 02:42*	WG1446546
(S) 1,2-Dichloroethane-d4	*125*		*70.0-130*		*03/15/2020 02:14*	WG1444259
(S) 1,2-Dichloroethane-d4	*106*		*70.0-130*		*03/20/2020 02:42*	WG1446546

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	ND		5000	1	03/17/2020 03:25	WG1444547

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/15/2020 02:32	WG1444259
Toluene	ND		1.00	1	03/15/2020 02:32	WG1444259
Ethylbenzene	ND		1.00	1	03/15/2020 02:32	WG1444259
o-Xylene	ND		1.00	1	03/15/2020 02:32	WG1444259
m&p-Xylene	ND		2.00	1	03/15/2020 02:32	WG1444259
Total Xylenes	ND		3.00	1	03/15/2020 02:32	WG1444259
Methyl tert-butyl ether	ND		1.00	1	03/15/2020 02:32	WG1444259
Naphthalene	ND		5.00	1	03/20/2020 03:03	WG1446546
(S) Toluene-d8	*104*		*80.0-120*		*03/15/2020 02:32*	WG1444259
(S) Toluene-d8	*112*		*80.0-120*		*03/20/2020 03:03*	WG1446546
(S) 4-Bromofluorobenzene	*93.9*		*77.0-126*		*03/15/2020 02:32*	WG1444259
(S) 4-Bromofluorobenzene	*103*		*77.0-126*		*03/20/2020 03:03*	WG1446546
(S) 1,2-Dichloroethane-d4	*124*		*70.0-130*		*03/15/2020 02:32*	WG1444259
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*03/20/2020 03:03*	WG1446546

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/15/2020 02:53	WG1444259
Toluene	ND		1.00	1	03/15/2020 02:53	WG1444259
Ethylbenzene	ND		1.00	1	03/15/2020 02:53	WG1444259
o-Xylene	ND		1.00	1	03/15/2020 02:53	WG1444259
m&p-Xylene	ND		2.00	1	03/15/2020 02:53	WG1444259
Total Xylenes	ND		3.00	1	03/15/2020 02:53	WG1444259
Methyl tert-butyl ether	ND		1.00	1	03/15/2020 02:53	WG1444259
Naphthalene	ND		5.00	1	03/20/2020 03:23	WG1446546
(S) Toluene-d8	*102*		*80.0-120*		*03/15/2020 02:53*	WG1444259
(S) Toluene-d8	*112*		*80.0-120*		*03/20/2020 03:23*	WG1446546
(S) 4-Bromofluorobenzene	*90.5*		*77.0-126*		*03/15/2020 02:53*	WG1444259
(S) 4-Bromofluorobenzene	*105*		*77.0-126*		*03/20/2020 03:23*	WG1446546
(S) 1,2-Dichloroethane-d4	*124*		*70.0-130*		*03/15/2020 02:53*	WG1444259
(S) 1,2-Dichloroethane-d4	*104*		*70.0-130*		*03/20/2020 03:23*	WG1446546

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	25600		5000	1	03/17/2020 03:43	WG1444547

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	ND		1.00	1	03/15/2020 03:13	WG1444259
Toluene	ND		1.00	1	03/15/2020 03:13	WG1444259
Ethylbenzene	ND		1.00	1	03/15/2020 03:13	WG1444259
o-Xylene	ND		1.00	1	03/15/2020 03:13	WG1444259
m&p-Xylene	ND		2.00	1	03/15/2020 03:13	WG1444259
Total Xylenes	ND		3.00	1	03/15/2020 03:13	WG1444259
Methyl tert-butyl ether	3.73		1.00	1	03/15/2020 03:13	WG1444259
Naphthalene	ND		5.00	1	03/20/2020 03:43	WG1446546
(S) Toluene-d8	*97.2*		*80.0-120*		*03/15/2020 03:13*	WG1444259
(S) Toluene-d8	*114*		*80.0-120*		*03/20/2020 03:43*	WG1446546
(S) 4-Bromofluorobenzene	*90.1*		*77.0-126*		*03/15/2020 03:13*	WG1444259
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*03/20/2020 03:43*	WG1446546
(S) 1,2-Dichloroethane-d4	*125*		*70.0-130*		*03/15/2020 03:13*	WG1444259
(S) 1,2-Dichloroethane-d4	*105*		*70.0-130*		*03/20/2020 03:43*	WG1446546

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	1.07		1.00	1	03/15/2020 03:34	WG1444259
Toluene	ND		1.00	1	03/15/2020 03:34	WG1444259
Ethylbenzene	ND		1.00	1	03/15/2020 03:34	WG1444259
o-Xylene	ND		1.00	1	03/15/2020 03:34	WG1444259
m&p-Xylene	ND		2.00	1	03/15/2020 03:34	WG1444259
Total Xylenes	ND		3.00	1	03/15/2020 03:34	WG1444259
Methyl tert-butyl ether	1.50		1.00	1	03/15/2020 03:34	WG1444259
Naphthalene	ND		5.00	1	03/20/2020 04:04	WG1446546
(S) Toluene-d8	*100*		*80.0-120*		*03/15/2020 03:34*	WG1444259
(S) Toluene-d8	*116*		*80.0-120*		*03/20/2020 04:04*	WG1446546
(S) 4-Bromofluorobenzene	*94.7*		*77.0-126*		*03/15/2020 03:34*	WG1444259
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*03/20/2020 04:04*	WG1446546
(S) 1,2-Dichloroethane-d4	*123*		*70.0-130*		*03/15/2020 03:34*	WG1444259
(S) 1,2-Dichloroethane-d4	*106*		*70.0-130*		*03/20/2020 04:04*	WG1446546

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	ND		5000	1	03/17/2020 04:01	WG1444547

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Benzene	7.71		1.00	1	03/15/2020 03:55	WG1444259
Toluene	1.30		1.00	1	03/15/2020 03:55	WG1444259
Ethylbenzene	ND		1.00	1	03/15/2020 03:55	WG1444259
o-Xylene	1.38		1.00	1	03/15/2020 03:55	WG1444259
m&p-Xylene	ND		2.00	1	03/15/2020 03:55	WG1444259
Total Xylenes	ND		3.00	1	03/15/2020 03:55	WG1444259
Methyl tert-butyl ether	2.32		1.00	1	03/15/2020 03:55	WG1444259
Naphthalene	ND		5.00	1	03/20/2020 04:24	WG1446546
(S) Toluene-d8	*99.6*		*80.0-120*		*03/15/2020 03:55*	WG1444259
(S) Toluene-d8	*115*		*80.0-120*		*03/20/2020 04:24*	WG1446546
(S) 4-Bromofluorobenzene	*91.8*		*77.0-126*		*03/15/2020 03:55*	WG1444259
(S) 4-Bromofluorobenzene	*106*		*77.0-126*		*03/20/2020 04:24*	WG1446546
(S) 1,2-Dichloroethane-d4	*123*		*70.0-130*		*03/15/2020 03:55*	WG1444259
(S) 1,2-Dichloroethane-d4	*107*		*70.0-130*		*03/20/2020 04:24*	WG1446546

Method Blank (MB)

(MB) R3509314-1 03/16/20 20:11

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Sulfate	U		77.4	5000

L1198614-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1198614-01 03/16/20 23:50 • (DUP) R3509314-3 03/17/20 00:08

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	6860	6800	1	0.789		15

L1198988-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1198988-01 03/17/20 08:48 • (DUP) R3509314-6 03/17/20 09:06

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Sulfate	13900	14000	1	0.192		15

Laboratory Control Sample (LCS)

(LCS) R3509314-2 03/16/20 20:29

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Sulfate	40000	39800	99.5	80.0-120	

L1198614-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1198614-01 03/16/20 23:50 • (MS) R3509314-4 03/17/20 00:26 • (MSD) R3509314-5 03/17/20 01:20

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Sulfate	50000	6860	52900	53100	92.2	92.4	1	80.0-120			0.242	15

L1198988-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1198988-01 03/17/20 08:48 • (MS) R3509314-7 03/17/20 09:24

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	ug/l	ug/l	ug/l	%		%	
Sulfate	50000	13900	62800	97.8	1	80.0-120	

Method Blank (MB)

(MB) R3510042-2 03/14/20 21:53

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.331	1.00
Ethylbenzene	U		0.384	1.00
Methyl tert-butyl ether	U		0.367	1.00
Toluene	U		0.412	1.00
Xylenes, Total	U		1.06	3.00
o-Xylene	U		0.341	1.00
m&p-Xylenes	U		0.719	2.00
(S) Toluene-d8	*103*			*80.0-120*
(S) 4-Bromofluorobenzene	*94.3*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*116*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3510042-1 03/14/20 21:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.36	107	70.0-130	
Ethylbenzene	5.00	4.73	94.6	70.0-130	
Methyl tert-butyl ether	5.00	5.72	114	70.0-130	
Toluene	5.00	4.98	99.6	70.0-130	
Xylenes, Total	15.0	14.6	97.3	70.0-130	
o-Xylene	5.00	4.63	92.6	70.0-130	
m&p-Xylenes	10.0	9.92	99.2	70.0-130	
(S) Toluene-d8			*105*	*80.0-120*	
(S) 4-Bromofluorobenzene			*98.4*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*113*	*70.0-130*	

Method Blank (MB)

(MB) R3510838-2 03/19/20 22:13

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Naphthalene	U		1.00	5.00
(S) Toluene-d8	*117*			*80.0-120*
(S) 4-Bromofluorobenzene	*103*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3510838-1 03/19/20 20:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Naphthalene	5.00	4.93	98.6	70.0-130	
(S) Toluene-d8			*115*	*80.0-120*	
(S) 4-Bromofluorobenzene			*108*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*103*	*70.0-130*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(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.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

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

Pace National 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.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

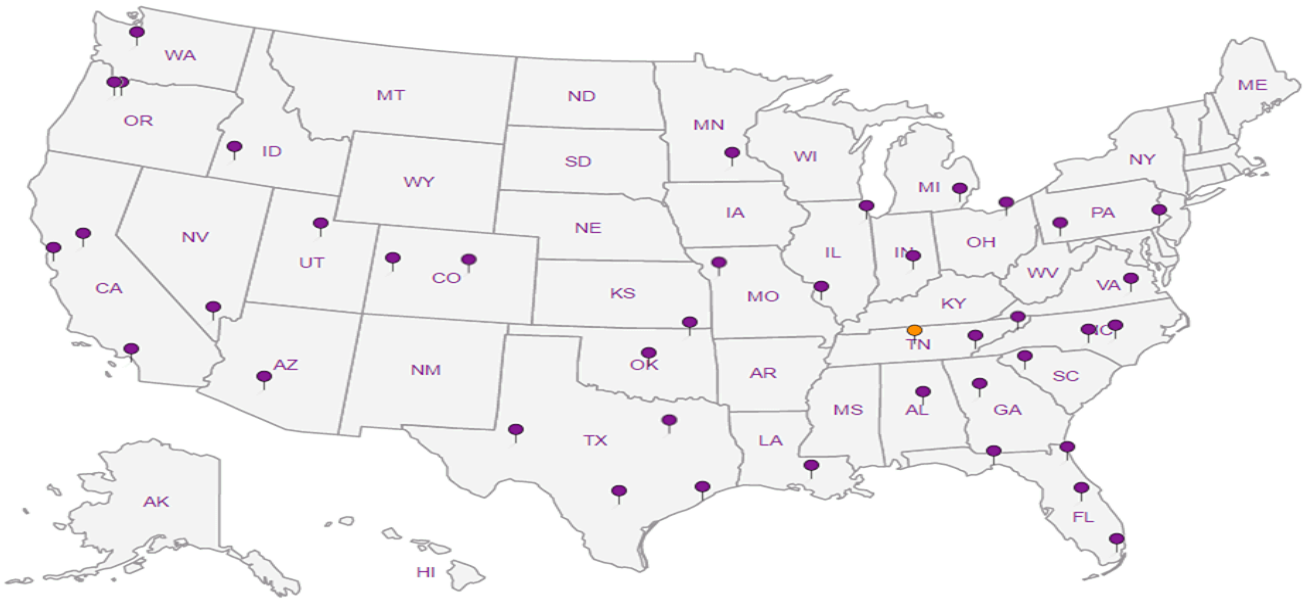
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National 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. Pace National performs all testing at our central laboratory.



Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com;tom.wiley@jacobs.co

Project Description: Lewis Drive Surface Water

City/State Collected: BELTON, SC

Please Circle: PT MT CT ET

Phone: 770-604-9182
Fax:

Client Project # KMLDOM120 B,CS.GEN.LDOMR.SW

Lab Project # KINCH2MGA-LEWIS

Collected by (print): MELISSA WARREN

Site/Facility ID # LEWIS DRIVE

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260BTEXMNSC 40mlAmb-HCl	Sulfate 125mL HDPE - No Pres	V8260BTEXMNSC-TB 40ml Amb-HCl-BIK							Remarks	Sample # (lab only)
TB04-031220	GRAB	GW	NA	03/12/20	—	1	X		X								01
SW03-031220		GW			1335	3	X										02
SW10-031220		GW			0925	3	X										03
SW09-031220		GW			0935	3	X										04
SW14-031220		GW			1415	4	X	X									05
SW04-031220		GW			1040	4	X	X									06
SW01-031220		GW			1300	4	X	X									07
SW12-031220		GW			1325	4	X	X									08
SW07-031220		GW			1310	3	X										09
SW05-031220		GW			1455	4	X	X									10

Immediately Packed on Ice N ___ Y X

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: V8260BTEXMNSC=BTEX + Naphthalene + MTBE.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 1663 5752 7596

Chain of Custody Page 1 of 2

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # 115760

Table F002

Acctnum: KINCH2MGA

Template: T155770

Prelogin: P758898

PM: 526 - Chris McCord

PB: 3-4-2020 GM

Shipped Via: FedEX Ground

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL MeoH TBR	If preservation required by Login: Date/Time
	03/12/20	1830		1	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.6 °C 1.6±0=1.6 Bottles Received: 36	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) L. Webster	Date: 3/13/20 Time: 08:45	Hold: Condition: NCF / OK

Kinder Morgan- Atlanta, GA

Ten 10th Street NW
Suite 1400
Atlanta, GA 30309

Billing Information:
Accounts Payable
1000 Windward Concourse
Ste 450
Alpharetta, GA 30005

Report to: Bethany Garvey

Email To: bethany.garvey@jacobs.com;tom.wiley@jacobs.co

Project Description: Lewis Drive Surface Water

City/State Collected: BELTON, SC

Please Circle: PT MT CT ET

Phone: 770-604-9182
Fax:

Client Project #: KMLDOM20 B.CS.GEN.LDOMR.SW

Lab Project #: KINCH2MGA-LEWIS

Collected by (print): MELISSA WALKER

Site/Facility ID #: LEWIS DRIVE

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260BTEXMNSC 40mlAmb-HCl	Sulfate 125ml HDPE - No Pres									Remarks	Sample # (lab only)
SW11-031220	GRAB	GW	NA	03/12/20	0915	3	X											11
SW13-031220		GW			1015	4 3	X	X										12
SW08-031220 0944		GW			0945	3	X											13
SW02-031220		GW			1050	4 3	X	X										14
		GW				3	X											
		GW				3	X											
		GW				3	X											
		GW				3	X											
		GW				3	X											
		GW				3	X											
		GW				3	X											

Chain of Custody Page 2 of 2

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # 116876

Table #

Acctnum: KINCH2MGA

Template: T155770

Prelogin: P758898

PM: 526 - Chris McCord

PB: 3-4.2020 GM

Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: V8260BTEXMNSC=BTEX + Naphthalene + MTBE.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 1663 5752 7596

Sample Receipt Checklist

COC Seal Present/Intact:	__NP __Y __N
COC Signed/Accurate:	__Y __N
Bottles arrive intact:	Y __N
Correct bottles used:	Y __N
Sufficient volume sent:	Y __N
If Applicable	
VOA Zero Headspace:	Y __N
Preservation Correct/Checked:	__Y __N
RAD Screen <0.5 mR/hr:	__Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	Temp: °C	Bottles Received:	If preservation required by Login: Date/Time
	03/12/20	1830			1.6+0=1.6	36	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)				
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 3/13/20	Time: 08:45	Hold:	Condition: NCF / OK

Appendix C
Operation and Maintenance Logs

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4.4.19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	15,454:08	15,457:26
Air Compressor 1 Temp	(F)	60 - 100	110	182	184
Air Compressor 1 Pressure	(psig)	90 - 110	100	105	105
Air Compressor 2 Run Time	(hours)	NA	NA	13,304:46	13,308:05
Air Compressor 2 Temp	(F)	60 - 100	110	180	181
Air Compressor 2 Pressure	(psig)	90 - 110	100	105	104
Receiver Tank Pressure	(psig)	90 - 110	100	118	118
Receiver Tank Temperature	(F)	60 - 100	110	—	—
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	105	105
Manifold Temperature	(F)	60 - 100	110	85	88
Manifold Flow Rate	(scfm)	TBD	TBD	1769	1690
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	524.0	523.5
HAS-1 Valve Position	(%)	TBD	TBD	70.4	70.4
HAS-1 Pressure	(psig)	10 - 20	30	25	25
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	501.4	501.1
HAS-2 Valve Position	(%)	TBD	TBD	46.9	49.2
HAS-2 Pressure	(psig)	10 - 20	30	27	27
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	268.0	270.4
HAS-3 Valve Position	(%)	TBD	TBD	33.1	33.2
HAS-3 Pressure	(psig)	10 - 20	30	19	19

Parts Needed:	
Parts Installed:	

Notes (Include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	Lewis Drive, Belton, South Carolina

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4.4.19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE0320469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-01 Pressure	(psig)	10 - 20	30	20	
VAS-02 Flow Rate	(scfm)	TBD	TBD	1.9	
VAS-02 Pressure	(psig)	10 - 20	30	30	
VAS-03 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-03 Pressure	(psig)	10 - 20	30	24	
VAS-04 Flow Rate	(scfm)	TBD	TBD	10.0	
VAS-04 Pressure	(psig)	10 - 20	30	0	
VAS-05 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-05 Pressure	(psig)	10 - 20	30	8	
VAS-06 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-06 Pressure	(psig)	10 - 20	30	8	
VAS-07 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-07 Pressure	(psig)	10 - 20	30	10	
VAS-08 Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-08 Pressure	(psig)	10 - 20	30	20	
VAS-09 Flow Rate	(scfm)	TBD	TBD	4.9	
VAS-09 Pressure	(psig)	10 - 20	30	10	
VAS-10 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-10 Pressure	(psig)	10 - 20	30	10	
VAS-11 Flow Rate	(scfm)	TBD	TBD	3.5	
VAS-11 Pressure	(psig)	10 - 20	30	10	
VAS-12 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-12 Pressure	(psig)	10 - 20	30	15	
VAS-13 Flow Rate	(scfm)	TBD	TBD		5.5
VAS-13 Pressure	(psig)	10 - 20	30		15
VAS-14 Flow Rate	(scfm)	TBD	TBD		9.8
VAS-14 Pressure	(psig)	10 - 20	30		10
VAS-15 Flow Rate	(scfm)	TBD	TBD		9.2
VAS-15 Pressure	(psig)	10 - 20	30		10
VAS-16 Flow Rate	(scfm)	TBD	TBD		10.4
VAS-16 Pressure	(psig)	10 - 20	30		18
VAS-17 Flow Rate	(scfm)	TBD	TBD		4.1
VAS-17 Pressure	(psig)	10 - 20	30		0

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Poss/RAL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4.4.19/0810	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03001469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		3.3
VAS-18 Pressure	(psig)	10 - 20	30		0
VAS-19 Flow Rate	(scfm)	TBD	TBD		3.7
VAS-19 Pressure	(psig)	10 - 20	30		5
VAS-20 Flow Rate	(scfm)	TBD	TBD	10.7	10.1
VAS-20 Pressure	(psig)	10 - 20	30	29	29
VAS-21 Flow Rate	(scfm)	TBD	TBD	7.2	6.6
VAS-21 Pressure	(psig)	10 - 20	30	24	25
VAS-22 Flow Rate	(scfm)	TBD	TBD	8.7	8.7
VAS-22 Pressure	(psig)	10 - 20	30	20	20
VAS-23 Flow Rate	(scfm)	TBD	TBD	9.0	8.9
VAS-23 Pressure	(psig)	10 - 20	30	22	22
VAS-24 Flow Rate	(scfm)	TBD	TBD	1.8	1.8
VAS-24 Pressure	(psig)	10 - 20	30	22	22
VAS-25 Flow Rate	(scfm)	TBD	TBD	10.0	9.6
VAS-25 Pressure	(psig)	10 - 20	30	25	25
VAS-26 Flow Rate	(scfm)	TBD	TBD	2.7	2.3
VAS-26 Pressure	(psig)	10 - 20	30	30	30
VAS-27 Flow Rate	(scfm)	TBD	TBD	2.4	1.3
VAS-27 Pressure	(psig)	10 - 20	30	28	29
VAS-28 Flow Rate	(scfm)	TBD	TBD	2.1	1.9
VAS-28 Pressure	(psig)	10 - 20	30	12	12
VAS-29 Flow Rate	(scfm)	TBD	TBD	8.9	8.8
VAS-29 Pressure	(psig)	10 - 20	30	14	15
VAS-30 Flow Rate	(scfm)	TBD	TBD	9.6	9.4
VAS-30 Pressure	(psig)	10 - 20	30	5	5
VAS-31 Flow Rate	(scfm)	TBD	TBD	5.7	5.5
VAS-31 Pressure	(psig)	10 - 20	30	30	30
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.1	9.0
VAS-32 Pressure	(psig)	10 - 20	30	17	17
VAS-33 Flow Rate	(scfm)	TBD	TBD	9.5	9.5
VAS-33 Pressure	(psig)	10 - 20	30	18	18
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.3	9.3
VAS-34 Pressure	(psig)	10 - 20	30	22	22

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4.4.19/0800	J. Hall		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD		
VAS-41 Pressure	(psig)	10 - 20	30		
VAS-42A Flow Rate	(scfm)	TBD	TBD	2.7	2.6
VAS-42A Pressure	(psig)	10 - 20	30	10	10
VAS-43A Flow Rate	(scfm)	TBD	TBD		
VAS-43A Pressure	(psig)	10 - 20	30		
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD		
VAS-45 Pressure	(psig)	10 - 20	30		
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD		
VAS-47 Pressure	(psig)	10 - 20	30		
VAS-48 Flow Rate	(scfm)	TBD	TBD		
VAS-48 Pressure	(psig)	10 - 20	30		
VAS-49 Flow Rate	(scfm)	TBD	TBD		
VAS-49 Pressure	(psig)	10 - 20	30		
VAS-50 Flow Rate	(scfm)	TBD	TBD		
VAS-50 Pressure	(psig)	10 - 20	30		
VAS-51 Flow Rate	(scfm)	TBD	TBD		
VAS-51 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4.4.19/0800			Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD		
VAS-52 Pressure	(psig)	10 - 20	30		
VAS-53 Flow Rate	(scfm)	TBD	TBD		
VAS-53 Pressure	(psig)	10 - 20	30		
VAS-54 Flow Rate	(scfm)	TBD	TBD		
VAS-54 Pressure	(psig)	10 - 20	30		
VAS-55 Flow Rate	(scfm)	TBD	TBD		
VAS-55 Pressure	(psig)	10 - 20	30		
VAS-56 Flow Rate	(scfm)	TBD	TBD		
VAS-56 Pressure	(psig)	10 - 20	30		
VAS-57 Flow Rate	(scfm)	TBD	TBD		
VAS-57 Pressure	(psig)	10 - 20	30		
VAS-58 Flow Rate	(scfm)	TBD	TBD		
VAS-58 Pressure	(psig)	10 - 20	30		
VAS-59 Flow Rate	(scfm)	TBD	TBD		
VAS-59 Pressure	(psig)	10 - 20	30		
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD		
BCA-01 Pressure	(psig)	0 - 5	5		
BCA-02 Flow Rate	(scfm)	TBD	TBD		
BCA-02 Pressure	(psig)	0 - 5	5		
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
4/4/19 0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHF03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / No	Yes / No		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: VAS-13 STUCK OPEN UPON ARRIVAL

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9/8/19 0800	T. HALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	
Air Compressor 1 Run Time	(hours)	NA	NA	15,546:55	15,555:55
Air Compressor 1 Temp	(F)	60 - 100	110	181	182
Air Compressor 1 Pressure	(psig)	90 - 110	100	106	104
Air Compressor 2 Run Time	(hours)	NA	NA	13,397:33	13,406:33
Air Compressor 2 Temp	(F)	60 - 100	110	178	178
Air Compressor 2 Pressure	(psig)	90 - 110	100	105	105
Receiver Tank Pressure	(psig)	90 - 110	100	118	118
Receiver Tank Temperature	(F)	60 - 100	110	—	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	104	104
Manifold Temperature	(F)	60 - 100	110	82	88
Manifold Flow Rate	(scfm)	TBD	TBD	1628	1700
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	528.4	525.0
HAS-1 Valve Position	(%)	TBD	TBD	71.0	70
HAS-1 Pressure	(psig)	10 - 20	30	24	24
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	501.9	501.9
HAS-2 Valve Position	(%)	TBD	TBD	53.4	53.2
HAS-2 Pressure	(psig)	10 - 20	30	28	28
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	261.3	257.5
HAS-3 Valve Position	(%)	TBD	TBD	33.3	33.8
HAS-3 Pressure	(psig)	10 - 20	30	19	19

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4/8/19 1800	T. Hall		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-01 Pressure	(psig)	10 - 20	30		20
VAS-02 Flow Rate	(scfm)	TBD	TBD		1.8
VAS-02 Pressure	(psig)	10 - 20	30		30
VAS-03 Flow Rate	(scfm)	TBD	TBD		7.1
VAS-03 Pressure	(psig)	10 - 20	30		24
VAS-04 Flow Rate	(scfm)	TBD	TBD		9.8
VAS-04 Pressure	(psig)	10 - 20	30		0
VAS-05 Flow Rate	(scfm)	TBD	TBD		
VAS-05 Pressure	(psig)	10 - 20	30		
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD		
VAS-07 Pressure	(psig)	10 - 20	30		
VAS-08 Flow Rate	(scfm)	TBD	TBD		
VAS-08 Pressure	(psig)	10 - 20	30		
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD		3.1
VAS-11 Pressure	(psig)	10 - 20	30		10
VAS-12 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-12 Pressure	(psig)	10 - 20	30		N/A 14
VAS-13 Flow Rate	(scfm)	TBD	TBD		3.0
VAS-13 Pressure	(psig)	10 - 20	30		16
VAS-14 Flow Rate	(scfm)	TBD	TBD		6.7
VAS-14 Pressure	(psig)	10 - 20	30		13
VAS-15 Flow Rate	(scfm)	TBD	TBD		8.6
VAS-15 Pressure	(psig)	10 - 20	30		12
VAS-16 Flow Rate	(scfm)	TBD	TBD		9.4
VAS-16 Pressure	(psig)	10 - 20	30		18
VAS-17 Flow Rate	(scfm)	TBD	TBD		2.3
VAS-17 Pressure	(psig)	10 - 20	30		2

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4.8.19/0800	T. HALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		3.1
VAS-18 Pressure	(psig)	10 - 20	30		0
VAS-19 Flow Rate	(scfm)	TBD	TBD		3.4
VAS-19 Pressure	(psig)	10 - 20	30		5
VAS-20 Flow Rate	(scfm)	TBD	TBD	10.5	
VAS-20 Pressure	(psig)	10 - 20	30	29	
VAS-21 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-21 Pressure	(psig)	10 - 20	30	25	
VAS-22 Flow Rate	(scfm)	TBD	TBD	8.5	8.5
VAS-22 Pressure	(psig)	10 - 20	30	20	20
VAS-23 Flow Rate	(scfm)	TBD	TBD	8.3	8.1
VAS-23 Pressure	(psig)	10 - 20	30	24	24
VAS-24 Flow Rate	(scfm)	TBD	TBD	1.6	1.5
VAS-24 Pressure	(psig)	10 - 20	30	22	20
VAS-25 Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-25 Pressure	(psig)	10 - 20	30	28	
VAS-26 Flow Rate	(scfm)	TBD	TBD	4.6	
VAS-26 Pressure	(psig)	10 - 20	30	30	
VAS-27 Flow Rate	(scfm)	TBD	TBD	2.9	
VAS-27 Pressure	(psig)	10 - 20	30	28	
VAS-28 Flow Rate	(scfm)	TBD	TBD	1.9	
VAS-28 Pressure	(psig)	10 - 20	30	12	
VAS-29 Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-29 Pressure	(psig)	10 - 20	30	15	
VAS-30 Flow Rate	(scfm)	TBD	TBD	9.6	
VAS-30 Pressure	(psig)	10 - 20	30	5	
VAS-31 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-31 Pressure	(psig)	10 - 20	30	29	
VAS-32 Flow Rate	(scfm)	TBD	TBD	8.9	8.5
VAS-32 Pressure	(psig)	10 - 20	30	18	18
VAS-33 Flow Rate	(scfm)	TBD	TBD	9.1	9.1
VAS-33 Pressure	(psig)	10 - 20	30	18	18
VAS-34 Flow Rate	(scfm)	TBD	TBD	8.9	8.9
VAS-34 Pressure	(psig)	10 - 20	30	22	20

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4.8.14/0800	T. HALL/GW		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD		9.6
VAS-41 Pressure	(psig)	10 - 20	30		12
VAS-42A Flow Rate	(scfm)	TBD	TBD	2.7	2.6
VAS-42A Pressure	(psig)	10 - 20	30	10	10
VAS-43A Flow Rate	(scfm)	TBD	TBD		1.8
VAS-43A Pressure	(psig)	10 - 20	30		30
VAS-44A Flow Rate	(scfm)	TBD	TBD		0.0
VAS-44A Pressure	(psig)	10 - 20	30		30
VAS-45 Flow Rate	(scfm)	TBD	TBD		8.0
VAS-45 Pressure	(psig)	10 - 20	30		20
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD		
VAS-47 Pressure	(psig)	10 - 20	30		
VAS-48 Flow Rate	(scfm)	TBD	TBD		
VAS-48 Pressure	(psig)	10 - 20	30		
VAS-49 Flow Rate	(scfm)	TBD	TBD		
VAS-49 Pressure	(psig)	10 - 20	30		
VAS-50 Flow Rate	(scfm)	TBD	TBD		
VAS-50 Pressure	(psig)	10 - 20	30		
VAS-51 Flow Rate	(scfm)	TBD	TBD		
VAS-51 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4/8/19 0800	T. HALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD		
VAS-52 Pressure	(psig)	10 - 20	30		
VAS-53 Flow Rate	(scfm)	TBD	TBD		
VAS-53 Pressure	(psig)	10 - 20	30		
VAS-54 Flow Rate	(scfm)	TBD	TBD		
VAS-54 Pressure	(psig)	10 - 20	30		
VAS-55 Flow Rate	(scfm)	TBD	TBD		
VAS-55 Pressure	(psig)	10 - 20	30		
VAS-56 Flow Rate	(scfm)	TBD	TBD		
VAS-56 Pressure	(psig)	10 - 20	30		
VAS-57 Flow Rate	(scfm)	TBD	TBD		
VAS-57 Pressure	(psig)	10 - 20	30		
VAS-58 Flow Rate	(scfm)	TBD	TBD		
VAS-58 Pressure	(psig)	10 - 20	30		
VAS-59 Flow Rate	(scfm)	TBD	TBD		
VAS-59 Pressure	(psig)	10 - 20	30		
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	4.8	8.5
BCA-01 Pressure	(psig)	0 - 5	5	10	16
BCA-02 Flow Rate	(scfm)	TBD	TBD	5.1	8.2
BCA-02 Pressure	(psig)	0 - 5	5	12	18
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
4.8.19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / No	Yes / No		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
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Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / (No)		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / (No)		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: RESTARTED AERATORS AT BROWNS CREEK

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4.15.19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	15,716:27	15,720:23
Air Compressor 1 Temp	(F)	60 - 100	110	183	184
Air Compressor 1 Pressure	(psig)	90 - 110	100	104	105
Air Compressor 2 Run Time	(hours)	NA	NA	13,567:05	13,571:01
Air Compressor 2 Temp	(F)	60 - 100	110	181	180
Air Compressor 2 Pressure	(psig)	90 - 110	100	105	105
Receiver Tank Pressure	(psig)	90 - 110	100	118	118
Receiver Tank Temperature	(F)	60 - 100	110	—	—
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	107	104
Manifold Temperature	(F)	60 - 100	110	78	80
Manifold Flow Rate	(scfm)	TBD	TBD	1692	1763
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	526.5	524.8
HAS-1 Valve Position	(%)	TBD	TBD	68.2	69.0
HAS-1 Pressure	(psig)	10 - 20	30	26	26
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502	502
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	502.2	501.5
HAS-2 Valve Position	(%)	TBD	TBD	53.3	53.5
HAS-2 Pressure	(psig)	10 - 20	30	28	28
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	288.4	266.8
HAS-3 Valve Position	(%)	TBD	TBD	29.7	32.0
HAS-3 Pressure	(psig)	10 - 20	30	20	20

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4/5/19 0801	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-01 Pressure	(psig)	10 - 20	30	22	
VAS-02 Flow Rate	(scfm)	TBD	TBD	1.8	
VAS-02 Pressure	(psig)	10 - 20	30	3+	
VAS-03 Flow Rate	(scfm)	TBD	TBD	7.3	→
VAS-03 Pressure	(psig)	10 - 20	30	24	
VAS-04 Flow Rate	(scfm)	TBD	TBD	10.2	
VAS-04 Pressure	(psig)	10 - 20	30	2	
VAS-05 Flow Rate	(scfm)	TBD	TBD		
VAS-05 Pressure	(psig)	10 - 20	30		
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD		
VAS-07 Pressure	(psig)	10 - 20	30		
VAS-08 Flow Rate	(scfm)	TBD	TBD		
VAS-08 Pressure	(psig)	10 - 20	30		
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD		3.2
VAS-11 Pressure	(psig)	10 - 20	30		10
VAS-12 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-12 Pressure	(psig)	10 - 20	30		15
VAS-13 Flow Rate	(scfm)	TBD	TBD		3.7
VAS-13 Pressure	(psig)	10 - 20	30		15
VAS-14 Flow Rate	(scfm)	TBD	TBD		7.3
VAS-14 Pressure	(psig)	10 - 20	30		12
VAS-15 Flow Rate	(scfm)	TBD	TBD		9.1
VAS-15 Pressure	(psig)	10 - 20	30		12
VAS-16 Flow Rate	(scfm)	TBD	TBD	10.3	10.7
VAS-16 Pressure	(psig)	10 - 20	30	20	20
VAS-17 Flow Rate	(scfm)	TBD	TBD		3.5
VAS-17 Pressure	(psig)	10 - 20	30		8

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4.15.14/0800			Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	3.3	3.2
VAS-18 Pressure	(psig)	10 - 20	30	0	0
VAS-19 Flow Rate	(scfm)	TBD	TBD		3.7
VAS-19 Pressure	(psig)	10 - 20	30		8
VAS-20 Flow Rate	(scfm)	TBD	TBD		
VAS-20 Pressure	(psig)	10 - 20	30		
VAS-21 Flow Rate	(scfm)	TBD	TBD		
VAS-21 Pressure	(psig)	10 - 20	30		
VAS-22 Flow Rate	(scfm)	TBD	TBD	8.4	8.2
VAS-22 Pressure	(psig)	10 - 20	30	21	21
VAS-23 Flow Rate	(scfm)	TBD	TBD	8.1	8.1
VAS-23 Pressure	(psig)	10 - 20	30	24	24
VAS-24 Flow Rate	(scfm)	TBD	TBD	1.4	1.5
VAS-24 Pressure	(psig)	10 - 20	30	22	22
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD	8.2	8.1
VAS-32 Pressure	(psig)	10 - 20	30	18	18
VAS-33 Flow Rate	(scfm)	TBD	TBD	7.7	7.6
VAS-33 Pressure	(psig)	10 - 20	30	18	18
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.0	8.8
VAS-34 Pressure	(psig)	10 - 20	30	24	22

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4/15/19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD	9.1	9.6
VAS-41 Pressure	(psig)	10 - 20	30	15	15
VAS-42A Flow Rate	(scfm)	TBD	TBD	6.4	6.4
VAS-42A Pressure	(psig)	10 - 20	30	12	12
VAS-43A Flow Rate	(scfm)	TBD	TBD	1.2	1.1
VAS-43A Pressure	(psig)	10 - 20	30	32	32
VAS-44A Flow Rate	(scfm)	TBD	TBD	0.1	0.0
VAS-44A Pressure	(psig)	10 - 20	30	30	31
VAS-45 Flow Rate	(scfm)	TBD	TBD	7.4	7.5
VAS-45 Pressure	(psig)	10 - 20	30	20	20
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	4.3	4.1
VAS-47 Pressure	(psig)	10 - 20	30	8	8
VAS-48 Flow Rate	(scfm)	TBD	TBD	4.2	4.6
VAS-48 Pressure	(psig)	10 - 20	30	8	8
VAS-49 Flow Rate	(scfm)	TBD	TBD	4.4	4.2
VAS-49 Pressure	(psig)	10 - 20	30	10	10
VAS-50 Flow Rate	(scfm)	TBD	TBD	3.9	3.7
VAS-50 Pressure	(psig)	10 - 20	30	5	4
VAS-51 Flow Rate	(scfm)	TBD	TBD	4.4	4.4
VAS-51 Pressure	(psig)	10 - 20	30	2	2

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4-15-19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	4.6	4.6
VAS-52 Pressure	(psig)	10 - 20	30	6	6
VAS-53 Flow Rate	(scfm)	TBD	TBD	4.4	4.3
VAS-53 Pressure	(psig)	10 - 20	30	3	3
VAS-54 Flow Rate	(scfm)	TBD	TBD	4.0	3.8
VAS-54 Pressure	(psig)	10 - 20	30	0	0
VAS-55 Flow Rate	(scfm)	TBD	TBD	4.6	4.6
VAS-55 Pressure	(psig)	10 - 20	30	5	5
VAS-56 Flow Rate	(scfm)	TBD	TBD	4.7	4.5
VAS-56 Pressure	(psig)	10 - 20	30	3	3
VAS-57 Flow Rate	(scfm)	TBD	TBD	4.4	4.2
VAS-57 Pressure	(psig)	10 - 20	30	2	2
VAS-58 Flow Rate	(scfm)	TBD	TBD	4.7	4.4
VAS-58 Pressure	(psig)	10 - 20	30	2	2
VAS-59 Flow Rate	(scfm)	TBD	TBD	4.8	4.7
VAS-59 Pressure	(psig)	10 - 20	30	2	2
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	9.1	14.6
BCA-01 Pressure	(psig)	0 - 5	5	10	18
BCA-02 Flow Rate	(scfm)	TBD	TBD	9.6	14.4
BCA-02 Pressure	(psig)	0 - 5	5	12	18
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Lydia Ross/RAL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
4.15.19/1800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHF03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / No	Yes / No		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
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Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: VAS-1,12 STUCK OPEN UPON ARRIVAL
INCREASED FLOW AT AERATORS TO ~ 14.5 SCFM

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4/25/2019 1030			Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	Yes	
Air Compressor 1 Run Time	(hours)	NA	NA	15357:09	
				127 H: 13	
Air Compressor 1 Temp	(F)	60 - 100	110	183	
Air Compressor 1 Pressure	(psig)	90 - 110	100	105	
Air Compressor 2 Run Time	(hours)	NA	NA	13807:49	
				124 00:09	
Air Compressor 2 Temp	(F)	60 - 100	110	179	
Air Compressor 2 Pressure	(psig)	90 - 110	100	105	
Receiver Tank Pressure	(psig)	90 - 110	100	115	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	105	
Manifold Temperature	(F)	60 - 100	110	88	
Manifold Flow Rate	(scfm)	TBD	TBD	1741	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	528.1	
HAS-1 Valve Position	(%)	TBD	TBD	70.8	
HAS-1 Pressure	(psig)	10 - 20	30	26	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	503.2	
HAS-2 Valve Position	(%)	TBD	TBD	57.0	
HAS-2 Pressure	(psig)	10 - 20	30	28	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	272.4	
HAS-3 Valve Position	(%)	TBD	TBD	33.8	
HAS-3 Pressure	(psig)	10 - 20	30	20	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):
TP Flows adjusted to 10 scfm for vertical wells when able.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4/25/2019 1030	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-01 Pressure	(psig)	10 - 20	30		
VAS-02 Flow Rate	(scfm)	TBD	TBD		
VAS-02 Pressure	(psig)	10 - 20	30		
VAS-03 Flow Rate	(scfm)	TBD	TBD		
VAS-03 Pressure	(psig)	10 - 20	30		
VAS-04 Flow Rate	(scfm)	TBD	TBD		
VAS-04 Pressure	(psig)	10 - 20	30		
VAS-05 Flow Rate	(scfm)	TBD	TBD		
VAS-05 Pressure	(psig)	10 - 20	30		
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD		
VAS-07 Pressure	(psig)	10 - 20	30		
VAS-08 Flow Rate	(scfm)	TBD	TBD		
VAS-08 Pressure	(psig)	10 - 20	30		
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD		
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD		
VAS-16 Pressure	(psig)	10 - 20	30		
VAS-17 Flow Rate	(scfm)	TBD	TBD		
VAS-17 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4/25/2019 1030	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD		
VAS-20 Pressure	(psig)	10 - 20	30		
VAS-21 Flow Rate	(scfm)	TBD	TBD		
VAS-21 Pressure	(psig)	10 - 20	30		
VAS-22 Flow Rate	(scfm)	TBD	TBD	7.9	
VAS-22 Pressure	(psig)	10 - 20	30	20	
VAS-23 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-23 Pressure	(psig)	10 - 20	30	23	
VAS-24 Flow Rate	(scfm)	TBD	TBD	1.3	
VAS-24 Pressure	(psig)	10 - 20	30	22	
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-32 Pressure	(psig)	10 - 20	30	17	
VAS-33 Flow Rate	(scfm)	TBD	TBD	7.3	
VAS-33 Pressure	(psig)	10 - 20	30	17	
VAS-34 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-34 Pressure	(psig)	10 - 20	30	21	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4/25/2019 1030 1500	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-41 Pressure	(psig)	10 - 20	30	14	
VAS-42A Flow Rate	(scfm)	TBD	TBD	6.1	
VAS-42A Pressure	(psig)	10 - 20	30	12	
VAS-43A Flow Rate	(scfm)	TBD	TBD	1.8	
VAS-43A Pressure	(psig)	10 - 20	30	32	
VAS-44A Flow Rate	(scfm)	TBD	TBD	1.0	
VAS-44A Pressure	(psig)	10 - 20	30	30	
VAS-45 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-45 Pressure	(psig)	10 - 20	30	19	
VAS-46 Flow Rate	(scfm)	TBD	TBD	—	
VAS-46 Pressure	(psig)	10 - 20	30	—	
VAS-47 Flow Rate	(scfm)	TBD	TBD	2.7	6.0
VAS-47 Pressure	(psig)	10 - 20	30	6	8
VAS-48 Flow Rate	(scfm)	TBD	TBD	3.4	6.0
VAS-48 Pressure	(psig)	10 - 20	30	6	8
VAS-49 Flow Rate	(scfm)	TBD	TBD	3.4	6.0
VAS-49 Pressure	(psig)	10 - 20	30	8	10.5
VAS-50 Flow Rate	(scfm)	TBD	TBD	3.0	6.0
VAS-50 Pressure	(psig)	10 - 20	30	3	6
VAS-51 Flow Rate	(scfm)	TBD	TBD	6.5	6.1
VAS-51 Pressure	(psig)	10 - 20	30	2	5

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
4/25/2019 1030 1500	SCOTT SMITH		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	3.2	4.0
VAS-52 Pressure	(psig)	10 - 20	30	5	8
VAS-53 Flow Rate	(scfm)	TBD	TBD	3.9	4.0
VAS-53 Pressure	(psig)	10 - 20	30	3	5
VAS-54 Flow Rate	(scfm)	TBD	TBD	3.3	4.2
VAS-54 Pressure	(psig)	10 - 20	30	1	5
VAS-55 Flow Rate	(scfm)	TBD	TBD	5.0	4.0
VAS-55 Pressure	(psig)	10 - 20	30	4	5
VAS-56 Flow Rate	(scfm)	TBD	TBD	3.4	4.0
VAS-56 Pressure	(psig)	10 - 20	30	2	3
VAS-57 Flow Rate	(scfm)	TBD	TBD	3.1	4.1
VAS-57 Pressure	(psig)	10 - 20	30	1	3
VAS-58 Flow Rate	(scfm)	TBD	TBD	3.5	4.0
VAS-58 Pressure	(psig)	10 - 20	30	4	4
VAS-59 Flow Rate	(scfm)	TBD	TBD	4.0	4.0
VAS-59 Pressure	(psig)	10 - 20	30	4	4
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	13.6	
BCA-01 Pressure	(psig)	0 - 5	5	17	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.4	
BCA-02 Pressure	(psig)	0 - 5	5	17	
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

NOT OPERATING

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
4/25/2019 1030	Scott Smida	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		→ See notes and separate sheets
Perform air monitoring near Cupboard Creek.	Each visit	(Yes) / No	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / (No)	Yes / No	Service due, schedule soon.	
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / (No)	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	(Yes) / No	Yes / No	Next 7/25/2019	

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:
→ clean compressor inlet air filters
→ turn down compressor exhaust thermostats for summer months
→ test auto drain manually, ok.
→ inspect condensate out water, ok.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5-1-19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	16,102:07	16,108:24
Air Compressor 1 Temp	(F)	60 - 100	110	200	196
Air Compressor 1 Pressure	(psig)	90 - 110	100	102	104
Air Compressor 2 Run Time	(hours)	NA	NA	13,952:46	13,958:46
Air Compressor 2 Temp	(F)	60 - 100	110	188	182
Air Compressor 2 Pressure	(psig)	90 - 110	100	102	103
Receiver Tank Pressure	(psig)	90 - 110	100	115	116
Receiver Tank Temperature	(F)	60 - 100	110	—	—
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	102	102
Manifold Temperature	(F)	60 - 100	110	106	104
Manifold Flow Rate	(scfm)	TBD	TBD	1962	1880
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	524.0	527.4
HAS-1 Valve Position	(%)	TBD	TBD	71.0	71.0
HAS-1 Pressure	(psig)	10 - 20	30	25	25
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	502
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	502.6	501.7
HAS-2 Valve Position	(%)	TBD	TBD	46.6	48.0
HAS-2 Pressure	(psig)	10 - 20	30	28	28
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	268.2	256.6
HAS-3 Valve Position	(%)	TBD	TBD	35.1	35.3
HAS-3 Pressure	(psig)	10 - 20	30	19	19

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5-1-19/0900	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-01 Pressure	(psig)	10 - 20	30	20	
VAS-02 Flow Rate	(scfm)	TBD	TBD	1.6	
VAS-02 Pressure	(psig)	10 - 20	30	29	
VAS-03 Flow Rate	(scfm)	TBD	TBD	|	
VAS-03 Pressure	(psig)	10 - 20	30		
VAS-04 Flow Rate	(scfm)	TBD	TBD	8.9	
VAS-04 Pressure	(psig)	10 - 20	30	0	
VAS-05 Flow Rate	(scfm)	TBD	TBD	8.0	8.1
VAS-05 Pressure	(psig)	10 - 20	30	10	10
VAS-06 Flow Rate	(scfm)	TBD	TBD	7.5	7.7
VAS-06 Pressure	(psig)	10 - 20	30	10	10
VAS-07 Flow Rate	(scfm)	TBD	TBD	7.8	8.2
VAS-07 Pressure	(psig)	10 - 20	30	10	10
VAS-08 Flow Rate	(scfm)	TBD	TBD	8.2	9.0
VAS-08 Pressure	(psig)	10 - 20	30	20	20
VAS-09 Flow Rate	(scfm)	TBD	TBD	4.4	4.4
VAS-09 Pressure	(psig)	10 - 20	30	10	10
VAS-10 Flow Rate	(scfm)	TBD	TBD	8.2	8.6
VAS-10 Pressure	(psig)	10 - 20	30	8	8
VAS-11 Flow Rate	(scfm)	TBD	TBD	2.6	|
VAS-11 Pressure	(psig)	10 - 20	30	10	|
VAS-12 Flow Rate	(scfm)	TBD	TBD	7.7	|
VAS-12 Pressure	(psig)	10 - 20	30	12	|
VAS-13 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-13 Pressure	(psig)	10 - 20	30	|	|
VAS-14 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-14 Pressure	(psig)	10 - 20	30	|	|
VAS-15 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-15 Pressure	(psig)	10 - 20	30	|	|
VAS-16 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-16 Pressure	(psig)	10 - 20	30	|	|
VAS-17 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-17 Pressure	(psig)	10 - 20	30	|	|

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5-1-19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCME03070469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD	6.9	
VAS-20 Pressure	(psig)	10 - 20	30	28	
VAS-21 Flow Rate	(scfm)	TBD	TBD	6.8	
VAS-21 Pressure	(psig)	10 - 20	30	24	
VAS-22 Flow Rate	(scfm)	TBD	TBD	8.5	8.6
VAS-22 Pressure	(psig)	10 - 20	30	20	20
VAS-23 Flow Rate	(scfm)	TBD	TBD	7.9	7.9
VAS-23 Pressure	(psig)	10 - 20	30	22	22
VAS-24 Flow Rate	(scfm)	TBD	TBD	6.0	6.0
VAS-24 Pressure	(psig)	10 - 20	30	22	22
VAS-25 Flow Rate	(scfm)	TBD	TBD	11.9	
VAS-25 Pressure	(psig)	10 - 20	30	19	
VAS-26 Flow Rate	(scfm)	TBD	TBD	3.1	
VAS-26 Pressure	(psig)	10 - 20	30	30	
VAS-27 Flow Rate	(scfm)	TBD	TBD	3.0	
VAS-27 Pressure	(psig)	10 - 20	30	25	
VAS-28 Flow Rate	(scfm)	TBD	TBD	2.6	
VAS-28 Pressure	(psig)	10 - 20	30	12	
VAS-29 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-29 Pressure	(psig)	10 - 20	30	13	
VAS-30 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-30 Pressure	(psig)	10 - 20	30	4	
VAS-31 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-31 Pressure	(psig)	10 - 20	30	29	
VAS-32 Flow Rate	(scfm)	TBD	TBD	8.7	8.6
VAS-32 Pressure	(psig)	10 - 20	30	17	17
VAS-33 Flow Rate	(scfm)	TBD	TBD	6.9	6.9
VAS-33 Pressure	(psig)	10 - 20	30	17	17
VAS-34 Flow Rate	(scfm)	TBD	TBD	8.5	8.5
VAS-34 Pressure	(psig)	10 - 20	30	20	20

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5-1-19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03720AA Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	4.5	6.4
VAS-35 Pressure	(psig)	10 - 20	30	27	27
VAS-36 Flow Rate	(scfm)	TBD	TBD	7.3	8.2
VAS-36 Pressure	(psig)	10 - 20	30	18	18
VAS-37 Flow Rate	(scfm)	TBD	TBD	8.9	9.5
VAS-37 Pressure	(psig)	10 - 20	30	10	10
VAS-38 Flow Rate	(scfm)	TBD	TBD	3.8	3.9
VAS-38 Pressure	(psig)	10 - 20	30	7	7
VAS-39 Flow Rate	(scfm)	TBD	TBD	6.8	7.6
VAS-39 Pressure	(psig)	10 - 20	30	18	18
VAS-40 Flow Rate	(scfm)	TBD	TBD	5.4	6.8
VAS-40 Pressure	(psig)	10 - 20	30	20	20
VAS-41 Flow Rate	(scfm)	TBD	TBD	|	4.1
VAS-41 Pressure	(psig)	10 - 20	30	|	12
VAS-42A Flow Rate	(scfm)	TBD	TBD	7.0	6.8
VAS-42A Pressure	(psig)	10 - 20	30	12	12
VAS-43A Flow Rate	(scfm)	TBD	TBD	|	1.8
VAS-43A Pressure	(psig)	10 - 20	30	|	30
VAS-44A Flow Rate	(scfm)	TBD	TBD	|	0.5
VAS-44A Pressure	(psig)	10 - 20	30	|	29
VAS-45 Flow Rate	(scfm)	TBD	TBD	|	7.6
VAS-45 Pressure	(psig)	10 - 20	30	|	20
VAS-46 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-46 Pressure	(psig)	10 - 20	30	|	|
VAS-47 Flow Rate	(scfm)	TBD	TBD	6.2	6.2
VAS-47 Pressure	(psig)	10 - 20	30	8	8
VAS-48 Flow Rate	(scfm)	TBD	TBD	5.7	5.7
VAS-48 Pressure	(psig)	10 - 20	30	8	8
VAS-49 Flow Rate	(scfm)	TBD	TBD	6.7	6.6
VAS-49 Pressure	(psig)	10 - 20	30	10	10
VAS-50 Flow Rate	(scfm)	TBD	TBD	5.3	5.4
VAS-50 Pressure	(psig)	10 - 20	30	4	4
VAS-51 Flow Rate	(scfm)	TBD	TBD	5.8	6.0
VAS-51 Pressure	(psig)	10 - 20	30	2	2

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
05-1-19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	6.2	6.3
VAS-52 Pressure	(psig)	10 - 20	30	5	5
VAS-53 Flow Rate	(scfm)	TBD	TBD	6.1	6.2
VAS-53 Pressure	(psig)	10 - 20	30	2	2
VAS-54 Flow Rate	(scfm)	TBD	TBD	5.7	5.6
VAS-54 Pressure	(psig)	10 - 20	30	0	0
VAS-55 Flow Rate	(scfm)	TBD	TBD	6.1	6.2
VAS-55 Pressure	(psig)	10 - 20	30	2	2
VAS-56 Flow Rate	(scfm)	TBD	TBD	5.7	5.7
VAS-56 Pressure	(psig)	10 - 20	30	0	0
VAS-57 Flow Rate	(scfm)	TBD	TBD	6.0	6.0
VAS-57 Pressure	(psig)	10 - 20	30	2	2
VAS-58 Flow Rate	(scfm)	TBD	TBD	5.6	5.7
VAS-58 Pressure	(psig)	10 - 20	30	4	4
VAS-59 Flow Rate	(scfm)	TBD	TBD	5.8	5.8
VAS-59 Pressure	(psig)	10 - 20	30	2	2
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	13.3	13.3
BCA-01 Pressure	(psig)	0 - 5	5	15	15
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.1	14.2
BCA-02 Pressure	(psig)	0 - 5	5	15	15
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
5-1-19/0800	T. HAM		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / (No)		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: 1, 12, 13 STICKING OPEN

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5-9-19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	16,291:01	16,297:05
Air Compressor 1 Temp	(F)	60 - 100	110	200	205
Air Compressor 1 Pressure	(psig)	90 - 110	100	103	103
Air Compressor 2 Run Time	(hours)	NA	NA	14,141:40	14,147:43
Air Compressor 2 Temp	(F)	60 - 100	110	190	190
Air Compressor 2 Pressure	(psig)	90 - 110	100	103	103
Receiver Tank Pressure	(psig)	90 - 110	100	116	115
Receiver Tank Temperature	(F)	60 - 100	110	—	—
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	104	106
Manifold Temperature	(F)	60 - 100	110	102	101
Manifold Flow Rate	(scfm)	TBD	TBD	1856	1919
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	525.1	525.0
HAS-1 Valve Position	(%)	TBD	TBD	71.8	71.7
HAS-1 Pressure	(psig)	10 - 20	30	26	26
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	502
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	501.5	501.2
HAS-2 Valve Position	(%)	TBD	TBD	51.5	50.7
HAS-2 Pressure	(psig)	10 - 20	30	27	27
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	256.8	243.6
HAS-3 Valve Position	(%)	TBD	TBD	34.3	35.1
HAS-3 Pressure	(psig)	10 - 20	30	19	19

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5-9-19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		
VAS-01 Pressure	(psig)	10 - 20	30		
VAS-02 Flow Rate	(scfm)	TBD	TBD		
VAS-02 Pressure	(psig)	10 - 20	30		
VAS-03 Flow Rate	(scfm)	TBD	TBD		
VAS-03 Pressure	(psig)	10 - 20	30		
VAS-04 Flow Rate	(scfm)	TBD	TBD		
VAS-04 Pressure	(psig)	10 - 20	30		
VAS-05 Flow Rate	(scfm)	TBD	TBD		
VAS-05 Pressure	(psig)	10 - 20	30		
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD		
VAS-07 Pressure	(psig)	10 - 20	30		
VAS-08 Flow Rate	(scfm)	TBD	TBD		
VAS-08 Pressure	(psig)	10 - 20	30		
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD		8.8
VAS-13 Pressure	(psig)	10 - 20	30		17
VAS-14 Flow Rate	(scfm)	TBD	TBD		8.5
VAS-14 Pressure	(psig)	10 - 20	30		12
VAS-15 Flow Rate	(scfm)	TBD	TBD		8.6
VAS-15 Pressure	(psig)	10 - 20	30		11
VAS-16 Flow Rate	(scfm)	TBD	TBD		10.0
VAS-16 Pressure	(psig)	10 - 20	30		18
VAS-17 Flow Rate	(scfm)	TBD	TBD		4.6
VAS-17 Pressure	(psig)	10 - 20	30		0

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5-9-19/0830	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		4.6
VAS-18 Pressure	(psig)	10 - 20	30		0
VAS-19 Flow Rate	(scfm)	TBD	TBD		3.5
VAS-19 Pressure	(psig)	10 - 20	30		10
VAS-20 Flow Rate	(scfm)	TBD	TBD		8.0
VAS-20 Pressure	(psig)	10 - 20	30		29
VAS-21 Flow Rate	(scfm)	TBD	TBD		6.2
VAS-21 Pressure	(psig)	10 - 20	30		25
VAS-22 Flow Rate	(scfm)	TBD	TBD	8.0	8.0
VAS-22 Pressure	(psig)	10 - 20	30	20	20
VAS-23 Flow Rate	(scfm)	TBD	TBD	7.8	7.9
VAS-23 Pressure	(psig)	10 - 20	30	24	22
VAS-24 Flow Rate	(scfm)	TBD	TBD	6.0	6.0
VAS-24 Pressure	(psig)	10 - 20	30	22	22
VAS-25 Flow Rate	(scfm)	TBD	TBD		9.9
VAS-25 Pressure	(psig)	10 - 20	30		20
VAS-26 Flow Rate	(scfm)	TBD	TBD		2.1
VAS-26 Pressure	(psig)	10 - 20	30		30
VAS-27 Flow Rate	(scfm)	TBD	TBD		2.6
VAS-27 Pressure	(psig)	10 - 20	30		25
VAS-28 Flow Rate	(scfm)	TBD	TBD		2.3
VAS-28 Pressure	(psig)	10 - 20	30		12
VAS-29 Flow Rate	(scfm)	TBD	TBD		7.1
VAS-29 Pressure	(psig)	10 - 20	30		15
VAS-30 Flow Rate	(scfm)	TBD	TBD		9.0
VAS-30 Pressure	(psig)	10 - 20	30		4
VAS-31 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-31 Pressure	(psig)	10 - 20	30		29
VAS-32 Flow Rate	(scfm)	TBD	TBD	8.7	8.8
VAS-32 Pressure	(psig)	10 - 20	30	18	18
VAS-33 Flow Rate	(scfm)	TBD	TBD	7.2	7.2
VAS-33 Pressure	(psig)	10 - 20	30	18	18
VAS-34 Flow Rate	(scfm)	TBD	TBD	8.6	8.7
VAS-34 Pressure	(psig)	10 - 20	30	21	21

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5-09-19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-35 Pressure	(psig)	10 - 20	30	26	
VAS-36 Flow Rate	(scfm)	TBD	TBD	7.2	
VAS-36 Pressure	(psig)	10 - 20	30	16	
VAS-37 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-37 Pressure	(psig)	10 - 20	30	12	
VAS-38 Flow Rate	(scfm)	TBD	TBD	4.1	
VAS-38 Pressure	(psig)	10 - 20	30	8	
VAS-39 Flow Rate	(scfm)	TBD	TBD	6.4	
VAS-39 Pressure	(psig)	10 - 20	30	18	
VAS-40 Flow Rate	(scfm)	TBD	TBD	7.0	
VAS-40 Pressure	(psig)	10 - 20	30	22	
VAS-41 Flow Rate	(scfm)	TBD	TBD		
VAS-41 Pressure	(psig)	10 - 20	30		
VAS-42A Flow Rate	(scfm)	TBD	TBD	6.9	6.9
VAS-42A Pressure	(psig)	10 - 20	30	12	12
VAS-43A Flow Rate	(scfm)	TBD	TBD		Bad
VAS-43A Pressure	(psig)	10 - 20	30		
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD	8.0	8.1
VAS-45 Pressure	(psig)	10 - 20	30	20	20
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	5.8	8.0
VAS-47 Pressure	(psig)	10 - 20	30	10	10
VAS-48 Flow Rate	(scfm)	TBD	TBD	5.8	7.8
VAS-48 Pressure	(psig)	10 - 20	30	8	10
VAS-49 Flow Rate	(scfm)	TBD	TBD	5.7	8.2
VAS-49 Pressure	(psig)	10 - 20	30	10	12
VAS-50 Flow Rate	(scfm)	TBD	TBD	6.0	7.8
VAS-50 Pressure	(psig)	10 - 20	30	5	10
VAS-51 Flow Rate	(scfm)	TBD	TBD	6.3	8.0
VAS-51 Pressure	(psig)	10 - 20	30	5	8

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5-9-19/0800	TMAL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	5.9	8.4
VAS-52 Pressure	(psig)	10 - 20	30	8	10
VAS-53 Flow Rate	(scfm)	TBD	TBD	6.0	8.2
VAS-53 Pressure	(psig)	10 - 20	30	5	5
VAS-54 Flow Rate	(scfm)	TBD	TBD	6.1	7.9
VAS-54 Pressure	(psig)	10 - 20	30	5	5
VAS-55 Flow Rate	(scfm)	TBD	TBD	6.1	7.9
VAS-55 Pressure	(psig)	10 - 20	30	4	10
VAS-56 Flow Rate	(scfm)	TBD	TBD	5.8	8.1
VAS-56 Pressure	(psig)	10 - 20	30	0	4
VAS-57 Flow Rate	(scfm)	TBD	TBD	5.7	8.5
VAS-57 Pressure	(psig)	10 - 20	30	2	4
VAS-58 Flow Rate	(scfm)	TBD	TBD	5.7	8.1
VAS-58 Pressure	(psig)	10 - 20	30	2	10
VAS-59 Flow Rate	(scfm)	TBD	TBD	6.0	8.1
VAS-59 Pressure	(psig)	10 - 20	30	2	10
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	13.2	13.1
BCA-01 Pressure	(psig)	0 - 5	5	18	18
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.0	13.9
BCA-02 Pressure	(psig)	0 - 5	5	18	18
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
3/9/19 0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / No	Yes / No		No PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
–	–				
–	–				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5/16/19/0800	T HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCME03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	16,458:23	16,464:03
Air Compressor 1 Temp	(F)	60 - 100	110	184	196
Air Compressor 1 Pressure	(psig)	90 - 110	100	104	104
Air Compressor 2 Run Time	(hours)	NA	NA	14,309:0	14,314:41
Air Compressor 2 Temp	(F)	60 - 100	110	181	184
Air Compressor 2 Pressure	(psig)	90 - 110	100	104	103
Receiver Tank Pressure	(psig)	90 - 110	100	115	115
Receiver Tank Temperature	(F)	60 - 100	110	—	—
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	104	102
Manifold Temperature	(F)	60 - 100	110	84	98
Manifold Flow Rate	(scfm)	TBD	TBD	1887	1930
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	522.0	524.7
HAS-1 Valve Position	(%)	TBD	TBD	69.9	71.4
HAS-1 Pressure	(psig)	10 - 20	30	27	27
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	502.6	502.4
HAS-2 Valve Position	(%)	TBD	TBD	46.2	49.4
HAS-2 Pressure	(psig)	10 - 20	30	29	29
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	249.6	240.1
HAS-3 Valve Position	(%)	TBD	TBD	32.4	34.4
HAS-3 Pressure	(psig)	10 - 20	30	20	20

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

BCA-01 + BCA-02 WERE SHUTOFF WHILE SW SAMPLES WERE COLLECTED. RESTARTED ON 5/16 @ 0815

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5/6/19 0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	8.8	8.9
VAS-01 Pressure	(psig)	10 - 20	30	21	21
VAS-02 Flow Rate	(scfm)	TBD	TBD	1.7	1.6
VAS-02 Pressure	(psig)	10 - 20	30	30	30
VAS-03 Flow Rate	(scfm)	TBD	TBD	8.1	7.3
VAS-03 Pressure	(psig)	10 - 20	30	25	24
VAS-04 Flow Rate	(scfm)	TBD	TBD	9.8	9.3
VAS-04 Pressure	(psig)	10 - 20	30	2	0
VAS-05 Flow Rate	(scfm)	TBD	TBD	8.6	|
VAS-05 Pressure	(psig)	10 - 20	30	10	|
VAS-06 Flow Rate	(scfm)	TBD	TBD	8.2	|
VAS-06 Pressure	(psig)	10 - 20	30	10	|
VAS-07 Flow Rate	(scfm)	TBD	TBD	8.4	|
VAS-07 Pressure	(psig)	10 - 20	30	10	|
VAS-08 Flow Rate	(scfm)	TBD	TBD	9.5	|
VAS-08 Pressure	(psig)	10 - 20	30	21	|
VAS-09 Flow Rate	(scfm)	TBD	TBD	4.9	|
VAS-09 Pressure	(psig)	10 - 20	30	10	|
VAS-10 Flow Rate	(scfm)	TBD	TBD	9.6	|
VAS-10 Pressure	(psig)	10 - 20	30	8	|
VAS-11 Flow Rate	(scfm)	TBD	TBD	2.1	2.0
VAS-11 Pressure	(psig)	10 - 20	30	12	12
VAS-12 Flow Rate	(scfm)	TBD	TBD	7.9	7.6
VAS-12 Pressure	(psig)	10 - 20	30	15	15
VAS-13 Flow Rate	(scfm)	TBD	TBD	|	8.1
VAS-13 Pressure	(psig)	10 - 20	30	|	17
VAS-14 Flow Rate	(scfm)	TBD	TBD	|	8.2
VAS-14 Pressure	(psig)	10 - 20	30	|	12
VAS-15 Flow Rate	(scfm)	TBD	TBD	|	8.1
VAS-15 Pressure	(psig)	10 - 20	30	|	12
VAS-16 Flow Rate	(scfm)	TBD	TBD	|	10.9
VAS-16 Pressure	(psig)	10 - 20	30	|	18
VAS-17 Flow Rate	(scfm)	TBD	TBD	|	3.8
VAS-17 Pressure	(psig)	10 - 20	30	|	0

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5.16.14/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		4.6
VAS-18 Pressure	(psig)	10 - 20	30		0
VAS-19 Flow Rate	(scfm)	TBD	TBD		1.2
VAS-19 Pressure	(psig)	10 - 20	30		10
VAS-20 Flow Rate	(scfm)	TBD	TBD		
VAS-20 Pressure	(psig)	10 - 20	30		
VAS-21 Flow Rate	(scfm)	TBD	TBD		
VAS-21 Pressure	(psig)	10 - 20	30		
VAS-22 Flow Rate	(scfm)	TBD	TBD	7.8	7.6
VAS-22 Pressure	(psig)	10 - 20	30	20	20
VAS-23 Flow Rate	(scfm)	TBD	TBD	8.2	8.1
VAS-23 Pressure	(psig)	10 - 20	30	25	25
VAS-24 Flow Rate	(scfm)	TBD	TBD	6.3	6.2
VAS-24 Pressure	(psig)	10 - 20	30	24	24
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD	STUCK	
VAS-29 Pressure	(psig)	10 - 20	30	OPEN	
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.5	9.2
VAS-32 Pressure	(psig)	10 - 20	30	18	18
VAS-33 Flow Rate	(scfm)	TBD	TBD	7.9	7.7
VAS-33 Pressure	(psig)	10 - 20	30	20	20
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.1	9.0
VAS-34 Pressure	(psig)	10 - 20	30	22	22

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5-16-19/0800	T.HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD	9.2	9.0
VAS-41 Pressure	(psig)	10 - 20	30	10	12
VAS-42A Flow Rate	(scfm)	TBD	TBD	7.2	7.0
VAS-42A Pressure	(psig)	10 - 20	30	12	12
VAS-43A Flow Rate	(scfm)	TBD	TBD	2.6	1.9
VAS-43A Pressure	(psig)	10 - 20	30	32	30
VAS-44A Flow Rate	(scfm)	TBD	TBD	0.6	0.5
VAS-44A Pressure	(psig)	10 - 20	30	30	29
VAS-45 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-45 Pressure	(psig)	10 - 20	30		20
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	8.2	8.0
VAS-47 Pressure	(psig)	10 - 20	30	10	10
VAS-48 Flow Rate	(scfm)	TBD	TBD	8.1	7.8
VAS-48 Pressure	(psig)	10 - 20	30	10	10
VAS-49 Flow Rate	(scfm)	TBD	TBD	8.6	7.9
VAS-49 Pressure	(psig)	10 - 20	30	12	12
VAS-50 Flow Rate	(scfm)	TBD	TBD	8.3	7.9
VAS-50 Pressure	(psig)	10 - 20	30	10	8
VAS-51 Flow Rate	(scfm)	TBD	TBD	8.0	7.7
VAS-51 Pressure	(psig)	10 - 20	30	8	5

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5-16-19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	7.8	7.9
VAS-52 Pressure	(psig)	10 - 20	30	10	10
VAS-53 Flow Rate	(scfm)	TBD	TBD	7.9	7.7
VAS-53 Pressure	(psig)	10 - 20	30	8	5
VAS-54 Flow Rate	(scfm)	TBD	TBD	8.0	7.9
VAS-54 Pressure	(psig)	10 - 20	30	7	5
VAS-55 Flow Rate	(scfm)	TBD	TBD	8.3	8.0
VAS-55 Pressure	(psig)	10 - 20	30	10	10
VAS-56 Flow Rate	(scfm)	TBD	TBD	8.3	7.8
VAS-56 Pressure	(psig)	10 - 20	30	10	10
VAS-57 Flow Rate	(scfm)	TBD	TBD	8.3	7.8
VAS-57 Pressure	(psig)	10 - 20	30	9	8
VAS-58 Flow Rate	(scfm)	TBD	TBD	8.1	7.4
VAS-58 Pressure	(psig)	10 - 20	30	10	10
VAS-59 Flow Rate	(scfm)	TBD	TBD	8.2	8.1
VAS-59 Pressure	(psig)	10 - 20	30	10	10
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD		14.2
BCA-01 Pressure	(psig)	0 - 5	5		18
BCA-02 Flow Rate	(scfm)	TBD	TBD		14.1
BCA-02 Pressure	(psig)	0 - 5	5		18
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
05-16-19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / (No)		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5/21/2019 0900	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	AC#2 only – see notes	
Air Compressor 1 Run Time / LOAD	(hours)	NA	NA	16513:22 / 13270:31	
Air Compressor 1 Temp	(F)	60 - 100	110	194	
Air Compressor 1 Pressure	(psig)	90 - 110	100	105	
Air Compressor 2 Run Time / LOAD	(hours)	NA	NA	14429:53 / 13022:13	
Air Compressor 2 Temp	(F)	60 - 100	110	188	
Air Compressor 2 Pressure	(psig)	90 - 110	100	104	
Receiver Tank Pressure	(psig)	90 - 110	100	110	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	104	
Manifold Temperature	(F)	60 - 100	110	100	
Manifold Flow Rate	(scfm)	TBD	TBD	1910	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	521.9	
HAS-1 Valve Position	(%)	TBD	TBD	65.6	
HAS-1 Pressure	(psig)	10 - 20	30	24	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	504.1	
HAS-2 Valve Position	(%)	TBD	TBD	29.2	
HAS-2 Pressure	(psig)	10 - 20	30	25	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	266.5	
HAS-3 Valve Position	(%)	TBD	TBD	29.5	
HAS-3 Pressure	(psig)	10 - 20	30	19	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

→ AC#1 run fail 5/18 @ 1439, attempt to restart remotely on 5/19 failed. Found AC#1 circuit breaker tripped. Reset CB6 for AC#1, restarted normally, with out incident.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5/21/2019 0900	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		
VAS-01 Pressure	(psig)	10 - 20	30		
VAS-02 Flow Rate	(scfm)	TBD	TBD		
VAS-02 Pressure	(psig)	10 - 20	30		
VAS-03 Flow Rate	(scfm)	TBD	TBD		
VAS-03 Pressure	(psig)	10 - 20	30		
VAS-04 Flow Rate	(scfm)	TBD	TBD		
VAS-04 Pressure	(psig)	10 - 20	30		
VAS-05 Flow Rate	(scfm)	TBD	TBD		
VAS-05 Pressure	(psig)	10 - 20	30		
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD		
VAS-07 Pressure	(psig)	10 - 20	30		
VAS-08 Flow Rate	(scfm)	TBD	TBD		
VAS-08 Pressure	(psig)	10 - 20	30		
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD		
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD		
VAS-16 Pressure	(psig)	10 - 20	30		
VAS-17 Flow Rate	(scfm)	TBD	TBD		
VAS-17 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5/21/19 0900	Scott Shiloh	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-20 Pressure	(psig)	10 - 20	30	28	
VAS-21 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-21 Pressure	(psig)	10 - 20	30	27	
VAS-22 Flow Rate	(scfm)	TBD	TBD	6.6	
VAS-22 Pressure	(psig)	10 - 20	30	26	
VAS-23 Flow Rate	(scfm)	TBD	TBD	4.2	
VAS-23 Pressure	(psig)	10 - 20	30	28	
VAS-24 Flow Rate	(scfm)	TBD	TBD	4.7	
VAS-24 Pressure	(psig)	10 - 20	30	26	
VAS-25 Flow Rate	(scfm)	TBD	TBD	11.7	
VAS-25 Pressure	(psig)	10 - 20	30	23	
VAS-26 Flow Rate	(scfm)	TBD	TBD	5.27	
VAS-26 Pressure	(psig)	10 - 20	30	32	
VAS-27 Flow Rate	(scfm)	TBD	TBD	2.8	
VAS-27 Pressure	(psig)	10 - 20	30	25	
VAS-28 Flow Rate	(scfm)	TBD	TBD	3.6	
VAS-28 Pressure	(psig)	10 - 20	30	13	
VAS-29 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-29 Pressure	(psig)	10 - 20	30	17	
VAS-30 Flow Rate	(scfm)	TBD	TBD	9.8	
VAS-30 Pressure	(psig)	10 - 20	30	9	
VAS-31 Flow Rate	(scfm)	TBD	TBD	6.2	
VAS-31 Pressure	(psig)	10 - 20	30	31	
VAS-32 Flow Rate	(scfm)	TBD	TBD	6.7	
VAS-32 Pressure	(psig)	10 - 20	30	20	
VAS-33 Flow Rate	(scfm)	TBD	TBD	5.1	
VAS-33 Pressure	(psig)	10 - 20	30	20	
VAS-34 Flow Rate	(scfm)	TBD	TBD	6.2	
VAS-34 Pressure	(psig)	10 - 20	30	23	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5/21/2019 0900	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD		
VAS-41 Pressure	(psig)	10 - 20	30		
VAS-42A Flow Rate	(scfm)	TBD	TBD	11.8	
VAS-42A Pressure	(psig)	10 - 20	30	17	
VAS-43A Flow Rate	(scfm)	TBD	TBD		
VAS-43A Pressure	(psig)	10 - 20	30		
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD		
VAS-45 Pressure	(psig)	10 - 20	30		
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-47 Pressure	(psig)	10 - 20	30	10	
VAS-48 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-48 Pressure	(psig)	10 - 20	30	11	
VAS-49 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-49 Pressure	(psig)	10 - 20	30	13	
VAS-50 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-50 Pressure	(psig)	10 - 20	30	9	
VAS-51 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-51 Pressure	(psig)	10 - 20	30	8	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5/21/2019 0900	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-52 Pressure	(psig)	10 - 20	30	10	
VAS-53 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-53 Pressure	(psig)	10 - 20	30	8	
VAS-54 Flow Rate	(scfm)	TBD	TBD	4.4 – increased flow to 8 SCFM	
VAS-54 Pressure	(psig)	10 - 20	30	2	
VAS-55 Flow Rate	(scfm)	TBD	TBD	10.9 – adjust to 8 SCFM	
VAS-55 Pressure	(psig)	10 - 20	30	5	
VAS-56 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-56 Pressure	(psig)	10 - 20	30	3	
VAS-57 Flow Rate	(scfm)	TBD	TBD	9.2 – adjust to 8 SCFM	
VAS-57 Pressure	(psig)	10 - 20	30	4	
VAS-58 Flow Rate	(scfm)	TBD	TBD	7.9	
VAS-58 Pressure	(psig)	10 - 20	30	6	
VAS-59 Flow Rate	(scfm)	TBD	TBD	9.4 - adjust to 8	
VAS-59 Pressure	(psig)	10 - 20	30	6	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.7	
BCA-01 Pressure	(psig)	0 - 5	5	18	
BCA-02 Flow Rate	(scfm)	TBD	TBD	15.2	
BCA-02 Pressure	(psig)	0 - 5	5	20	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
5/21/19 0900	[illegible]		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	Yes / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / No	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	Yes / No	Yes / No		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5-31-19/0800	T. Hall		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE030204G9 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA		16,696:55
Air Compressor 1 Temp	(F)	60 - 100	110		209°
Air Compressor 1 Pressure	(psig)	90 - 110	100		103
Air Compressor 2 Run Time	(hours)	NA	NA		14,673:13
Air Compressor 2 Temp	(F)	60 - 100	110		194
Air Compressor 2 Pressure	(psig)	90 - 110	100		102
Receiver Tank Pressure	(psig)	90 - 110	100		115
Receiver Tank Temperature	(F)	60 - 100	110		—
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100		102
Manifold Temperature	(F)	60 - 100	110		110
Manifold Flow Rate	(scfm)	TBD	TBD		1944
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD		525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD		527.4
HAS-1 Valve Position	(%)	TBD	TBD		69.7
HAS-1 Pressure	(psig)	10 - 20	30		26
HAS-2 Target Flow Rate	(scfm)	TBD	TBD		502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD		501.6
HAS-2 Valve Position	(%)	TBD	TBD		40.9
HAS-2 Pressure	(psig)	10 - 20	30		28
HAS-3 Target Flow Rate	(scfm)	TBD	TBD		262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD		259.7
HAS-3 Valve Position	(%)	TBD	TBD		33.4
HAS-3 Pressure	(psig)	10 - 20	30		20

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bukx/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5-31-19/0800	T. Hall		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-01 Pressure	(psig)	10 - 20	30		21
VAS-02 Flow Rate	(scfm)	TBD	TBD		1.0
VAS-02 Pressure	(psig)	10 - 20	30		28
VAS-03 Flow Rate	(scfm)	TBD	TBD		7.6
VAS-03 Pressure	(psig)	10 - 20	30		23
VAS-04 Flow Rate	(scfm)	TBD	TBD		9.1
VAS-04 Pressure	(psig)	10 - 20	30		2
VAS-05 Flow Rate	(scfm)	TBD	TBD		
VAS-05 Pressure	(psig)	10 - 20	30		
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD		
VAS-07 Pressure	(psig)	10 - 20	30		
VAS-08 Flow Rate	(scfm)	TBD	TBD		
VAS-08 Pressure	(psig)	10 - 20	30		
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD		2.4
VAS-11 Pressure	(psig)	10 - 20	30		15
VAS-12 Flow Rate	(scfm)	TBD	TBD		9.6
VAS-12 Pressure	(psig)	10 - 20	30		15
VAS-13 Flow Rate	(scfm)	TBD	TBD		8.9
VAS-13 Pressure	(psig)	10 - 20	30		18
VAS-14 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-14 Pressure	(psig)	10 - 20	30		15
VAS-15 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-15 Pressure	(psig)	10 - 20	30		12
VAS-16 Flow Rate	(scfm)	TBD	TBD		10.7
VAS-16 Pressure	(psig)	10 - 20	30		20
VAS-17 Flow Rate	(scfm)	TBD	TBD		3.2
VAS-17 Pressure	(psig)	10 - 20	30		5

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5-31-19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		7.1
VAS-18 Pressure	(psig)	10 - 20	30		0
VAS-19 Flow Rate	(scfm)	TBD	TBD		1.7
VAS-19 Pressure	(psig)	10 - 20	30		15
VAS-20 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-20 Pressure	(psig)	10 - 20	30		30
VAS-21 Flow Rate	(scfm)	TBD	TBD		7.2
VAS-21 Pressure	(psig)	10 - 20	30		27
VAS-22 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-22 Pressure	(psig)	10 - 20	30		21
VAS-23 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-23 Pressure	(psig)	10 - 20	30		24
VAS-24 Flow Rate	(scfm)	TBD	TBD		5.8
VAS-24 Pressure	(psig)	10 - 20	30		24
VAS-25 Flow Rate	(scfm)	TBD	TBD		8.9
VAS-25 Pressure	(psig)	10 - 20	30		22
VAS-26 Flow Rate	(scfm)	TBD	TBD		1.8
VAS-26 Pressure	(psig)	10 - 20	30		30
VAS-27 Flow Rate	(scfm)	TBD	TBD		7.9
VAS-27 Pressure	(psig)	10 - 20	30		26
VAS-28 Flow Rate	(scfm)	TBD	TBD		3.2
VAS-28 Pressure	(psig)	10 - 20	30		12
VAS-29 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-29 Pressure	(psig)	10 - 20	30		15
VAS-30 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-30 Pressure	(psig)	10 - 20	30		5
VAS-31 Flow Rate	(scfm)	TBD	TBD		10.4
VAS-31 Pressure	(psig)	10 - 20	30		30
VAS-32 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-32 Pressure	(psig)	10 - 20	30		19
VAS-33 Flow Rate	(scfm)	TBD	TBD		5.7
VAS-33 Pressure	(psig)	10 - 20	30		19
VAS-34 Flow Rate	(scfm)	TBD	TBD		4.5
VAS-34 Pressure	(psig)	10 - 20	30		22

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Jilenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5.31.19/0800	T. Hall		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCMF03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD		
VAS-41 Pressure	(psig)	10 - 20	30		
VAS-42A Flow Rate	(scfm)	TBD	TBD		8.1
VAS-42A Pressure	(psig)	10 - 20	30		13
VAS-43A Flow Rate	(scfm)	TBD	TBD		
VAS-43A Pressure	(psig)	10 - 20	30		
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD		6.8
VAS-45 Pressure	(psig)	10 - 20	30		22
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD		7.9
VAS-47 Pressure	(psig)	10 - 20	30		10
VAS-48 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-48 Pressure	(psig)	10 - 20	30		10
VAS-49 Flow Rate	(scfm)	TBD	TBD		8.5
VAS-49 Pressure	(psig)	10 - 20	30		12
VAS-50 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-50 Pressure	(psig)	10 - 20	30		8
VAS-51 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-51 Pressure	(psig)	10 - 20	30		6

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
5-31-19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-52 Pressure	(psig)	10 - 20	30		10
VAS-53 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-53 Pressure	(psig)	10 - 20	30		6
VAS-54 Flow Rate	(scfm)	TBD	TBD		8.0
VAS-54 Pressure	(psig)	10 - 20	30		5
VAS-55 Flow Rate	(scfm)	TBD	TBD		6.7
VAS-55 Pressure	(psig)	10 - 20	30		8
VAS-56 Flow Rate	(scfm)	TBD	TBD		7.6
VAS-56 Pressure	(psig)	10 - 20	30		5
VAS-57 Flow Rate	(scfm)	TBD	TBD		7.5
VAS-57 Pressure	(psig)	10 - 20	30		6
VAS-58 Flow Rate	(scfm)	TBD	TBD		5.7
VAS-58 Pressure	(psig)	10 - 20	30		10
VAS-59 Flow Rate	(scfm)	TBD	TBD		8.3
VAS-59 Pressure	(psig)	10 - 20	30		10
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD		15.0
BCA-01 Pressure	(psig)	0 - 5	5		18
BCA-02 Flow Rate	(scfm)	TBD	TBD		14.4
BCA-02 Pressure	(psig)	0 - 5	5		18
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintanance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JHenry Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
5-31-19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: VAS - 1, 8, STICKING OPEN
UPON ARRIVAL AC#1 HAD 2 FAULTS, HIGH AMBIENT AIR TEMP + HIGH DISCHARGE TEMP 220°F. S. SMIDA CONTACTED. AIRITE WILL BE ONSITE 6/6/19 TO CHANGE OIL IN COMPRESSORS AND LOOK AT WHY TEMPS ARE SO HIGH.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6-6-19/1300	T.HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA		YES
Air Compressor 1 Run Time	(hours)	NA	NA		16,837:32
Air Compressor 1 Temp	(F)	60 - 100	110		196
Air Compressor 1 Pressure	(psig)	90 - 110	100		104
Air Compressor 2 Run Time	(hours)	NA	NA		14,814:41
Air Compressor 2 Temp	(F)	60 - 100	110		184
Air Compressor 2 Pressure	(psig)	90 - 110	100		103
Receiver Tank Pressure	(psig)	90 - 110	100		115
Receiver Tank Temperature	(F)	60 - 100	110		-
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100		102
Manifold Temperature	(F)	60 - 100	110		98
Manifold Flow Rate	(scfm)	TBD	TBD		1780
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD		525
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD		524.6
HAS-1 Valve Position	(%)	TBD	TBD		65.7
HAS-1 Pressure	(psig)	10 - 20	30		24
HAS-2 Target Flow Rate	(scfm)	TBD	TBD		502
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD		501
HAS-2 Valve Position	(%)	TBD	TBD		32
HAS-2 Pressure	(psig)	10 - 20	30		25
HAS-3 Target Flow Rate	(scfm)	TBD	TBD		262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD		275
HAS-3 Valve Position	(%)	TBD	TBD		33.3
HAS-3 Pressure	(psig)	10 - 20	30		18

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6-6-19/1300	T.HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		
VAS-01 Pressure	(psig)	10 - 20	30		
VAS-02 Flow Rate	(scfm)	TBD	TBD		
VAS-02 Pressure	(psig)	10 - 20	30		
VAS-03 Flow Rate	(scfm)	TBD	TBD		
VAS-03 Pressure	(psig)	10 - 20	30		
VAS-04 Flow Rate	(scfm)	TBD	TBD		
VAS-04 Pressure	(psig)	10 - 20	30		
VAS-05 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-05 Pressure	(psig)	10 - 20	30		10
VAS-06 Flow Rate	(scfm)	TBD	TBD		8.3
VAS-06 Pressure	(psig)	10 - 20	30		10
VAS-07 Flow Rate	(scfm)	TBD	TBD		9.2
VAS-07 Pressure	(psig)	10 - 20	30		10
VAS-08 Flow Rate	(scfm)	TBD	TBD		9.3
VAS-08 Pressure	(psig)	10 - 20	30		22
VAS-09 Flow Rate	(scfm)	TBD	TBD		4.2
VAS-09 Pressure	(psig)	10 - 20	30		10
VAS-10 Flow Rate	(scfm)	TBD	TBD		9.4
VAS-10 Pressure	(psig)	10 - 20	30		10
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD		
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD		
VAS-16 Pressure	(psig)	10 - 20	30		
VAS-17 Flow Rate	(scfm)	TBD	TBD		
VAS-17 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6-6-19/1300	T.HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD		
VAS-20 Pressure	(psig)	10 - 20	30		
VAS-21 Flow Rate	(scfm)	TBD	TBD		
VAS-21 Pressure	(psig)	10 - 20	30		
VAS-22 Flow Rate	(scfm)	TBD	TBD		7.6
VAS-22 Pressure	(psig)	10 - 20	30		25
VAS-23 Flow Rate	(scfm)	TBD	TBD		7.6
VAS-23 Pressure	(psig)	10 - 20	30		25
VAS-24 Flow Rate	(scfm)	TBD	TBD		5.8
VAS-24 Pressure	(psig)	10 - 20	30		25
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD		6.3
VAS-32 Pressure	(psig)	10 - 20	30		20
VAS-33 Flow Rate	(scfm)	TBD	TBD		3.5
VAS-33 Pressure	(psig)	10 - 20	30		20
VAS-34 Flow Rate	(scfm)	TBD	TBD		5.9
VAS-34 Pressure	(psig)	10 - 20	30		24

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6-6-19/1300	T.HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD		9.7
VAS-41 Pressure	(psig)	10 - 20	30		15
VAS-42A Flow Rate	(scfm)	TBD	TBD		8.1
VAS-42A Pressure	(psig)	10 - 20	30		15
VAS-43A Flow Rate	(scfm)	TBD	TBD		1.9
VAS-43A Pressure	(psig)	10 - 20	30		31
VAS-44A Flow Rate	(scfm)	TBD	TBD		1.2
VAS-44A Pressure	(psig)	10 - 20	30		30
VAS-45 Flow Rate	(scfm)	TBD	TBD		
VAS-45 Pressure	(psig)	10 - 20	30		
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD		7.5
VAS-47 Pressure	(psig)	10 - 20	30		10
VAS-48 Flow Rate	(scfm)	TBD	TBD		8
VAS-48 Pressure	(psig)	10 - 20	30		12
VAS-49 Flow Rate	(scfm)	TBD	TBD		7.9
VAS-49 Pressure	(psig)	10 - 20	30		15
VAS-50 Flow Rate	(scfm)	TBD	TBD		9.6
VAS-50 Pressure	(psig)	10 - 20	30		10
VAS-51 Flow Rate	(scfm)	TBD	TBD		7.1
VAS-51 Pressure	(psig)	10 - 20	30		10

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6-6-19/1300	T.HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD		7.3
VAS-52 Pressure	(psig)	10 - 20	30		12
VAS-53 Flow Rate	(scfm)	TBD	TBD		7.7
VAS-53 Pressure	(psig)	10 - 20	30		8
VAS-54 Flow Rate	(scfm)	TBD	TBD		8.9
VAS-54 Pressure	(psig)	10 - 20	30		8
VAS-55 Flow Rate	(scfm)	TBD	TBD		9.6
VAS-55 Pressure	(psig)	10 - 20	30		10
VAS-56 Flow Rate	(scfm)	TBD	TBD		7.7
VAS-56 Pressure	(psig)	10 - 20	30		8
VAS-57 Flow Rate	(scfm)	TBD	TBD		8
VAS-57 Pressure	(psig)	10 - 20	30		10
VAS-58 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-58 Pressure	(psig)	10 - 20	30		10
VAS-59 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-59 Pressure	(psig)	10 - 20	30		12
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD		14.2
BCA-01 Pressure	(psig)	0 - 5	5		18
BCA-02 Flow Rate	(scfm)	TBD	TBD		14.3
BCA-02 Pressure	(psig)	0 - 5	5		20
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
6-6-19/1300	T.HALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	Yes / No	Yes / No		**YES, conditons good**
Perform air monitoring near Cupboard Creek.	Each visit	Yes / No	Yes / No		**NO air monitoring performed**
Activate and inspect condition of receiver auto drain	Each visit	Yes / No	Yes / No		**YES, conditons good**
...	...				
...	...				
Equipment Maintenance	**Frequency**	**Conditions Good?**	**Repaired/Replaced?**	**Scheduled**	**Comment**
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: Airite onsite to conduct oil change on compressor #1 & #2. Also troubleshooting high discharge temps at AC#1

Only departure readings taken since Airite had system shutdown for maintenance.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6/12/2019 1115	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	Yes	
Air Compressor 1 Run Time / LOAD	(hours)	NA	NA	16980:27 / 13737:24	
Air Compressor 1 Temp	(F)	60 - 100	110	187	
Air Compressor 1 Pressure	(psig)	90 - 110	100	103	
Air Compressor 2 Run Time	(hours)	NA	NA	14956:42 / 13548:53	
Air Compressor 2 Temp	(F)	60 - 100	110	182	
Air Compressor 2 Pressure	(psig)	90 - 110	100	103	
Receiver Tank Pressure	(psig)	90 - 110	100	115	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	100	
Manifold Temperature	(F)	60 - 100	110	88	
Manifold Flow Rate	(scfm)	TBD	TBD	1923	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	521.6	
HAS-1 Valve Position	(%)	TBD	TBD	69.7	
HAS-1 Pressure	(psig)	10 - 20	30	26	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	502.9	
HAS-2 Valve Position	(%)	TBD	TBD	42.7	
HAS-2 Pressure	(psig)	10 - 20	30	29	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	267.2	
HAS-3 Valve Position	(%)	TBD	TBD	32.5	
HAS-3 Pressure	(psig)	10 - 20	30	20	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6/12/2019 1115	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	9.6	
VAS-01 Pressure	(psig)	10 - 20	30	20	
VAS-02 Flow Rate	(scfm)	TBD	TBD	0.8	
VAS-02 Pressure	(psig)	10 - 20	30	30	
VAS-03 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-03 Pressure	(psig)	10 - 20	30	30	
VAS-04 Flow Rate	(scfm)	TBD	TBD	10.10	
VAS-04 Pressure	(psig)	10 - 20	30	3	
VAS-05 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-05 Pressure	(psig)	10 - 20	30	10	
VAS-06 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-06 Pressure	(psig)	10 - 20	30	12	
VAS-07 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-07 Pressure	(psig)	10 - 20	30	12	
VAS-08 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-08 Pressure	(psig)	10 - 20	30	23	
VAS-09 Flow Rate	(scfm)	TBD	TBD	4.3	
VAS-09 Pressure	(psig)	10 - 20	30	9	
VAS-10 Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-10 Pressure	(psig)	10 - 20	30	9	
VAS-11 Flow Rate	(scfm)	TBD	TBD	1.06	
VAS-11 Pressure	(psig)	10 - 20	30	18	
VAS-12 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-12 Pressure	(psig)	10 - 20	30	15	
VAS-13 Flow Rate	(scfm)	TBD	TBD		
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD		
VAS-16 Pressure	(psig)	10 - 20	30		
VAS-17 Flow Rate	(scfm)	TBD	TBD		
VAS-17 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6/12/2019 1115	Scott Shiplett	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD		
VAS-20 Pressure	(psig)	10 - 20	30		
VAS-21 Flow Rate	(scfm)	TBD	TBD		
VAS-21 Pressure	(psig)	10 - 20	30		
VAS-22 Flow Rate	(scfm)	TBD	TBD	8.9	
VAS-22 Pressure	(psig)	10 - 20	30	22	
VAS-23 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-23 Pressure	(psig)	10 - 20	30	24	
VAS-24 Flow Rate	(scfm)	TBD	TBD	7.3	
VAS-24 Pressure	(psig)	10 - 20	30	24	
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-32 Pressure	(psig)	10 - 20	30	19	
VAS-33 Flow Rate	(scfm)	TBD	TBD	6.5	
VAS-33 Pressure	(psig)	10 - 20	30	19	
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.3	
VAS-34 Pressure	(psig)	10 - 20	30	22	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6/12/2019 1115	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-35 Pressure	(psig)	10 - 20	30	28	
VAS-36 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-36 Pressure	(psig)	10 - 20	30	11	
VAS-37 Flow Rate	(scfm)	TBD	TBD	10.3	
VAS-37 Pressure	(psig)	10 - 20	30	12	
VAS-38 Flow Rate	(scfm)	TBD	TBD	45	
VAS-38 Pressure	(psig)	10 - 20	30	8	
VAS-39 Flow Rate	(scfm)	TBD	TBD	5.8	
VAS-39 Pressure	(psig)	10 - 20	30	22	
VAS-40 Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-40 Pressure	(psig)	10 - 20	30	23	
VAS-41 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-41 Pressure	(psig)	10 - 20	30	17	
VAS-42A Flow Rate	(scfm)	TBD	TBD	4.0	
VAS-42A Pressure	(psig)	10 - 20	30	11	
VAS-43A Flow Rate	(scfm)	TBD	TBD	1.6	
VAS-43A Pressure	(psig)	10 - 20	30	33	
VAS-44A Flow Rate	(scfm)	TBD	TBD	0.7	
VAS-44A Pressure	(psig)	10 - 20	30	40	
VAS-45 Flow Rate	(scfm)	TBD	TBD	6.9	
VAS-45 Pressure	(psig)	10 - 20	30	23	
VAS-46 Flow Rate	(scfm)	TBD	TBD	—	—
VAS-46 Pressure	(psig)	10 - 20	30	—	—
VAS-47 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-47 Pressure	(psig)	10 - 20	30	7	
VAS-48 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-48 Pressure	(psig)	10 - 20	30	12	
VAS-49 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-49 Pressure	(psig)	10 - 20	30	14	
VAS-50 Flow Rate	(scfm)	TBD	TBD	10.0	
VAS-50 Pressure	(psig)	10 - 20	30	50	
VAS-51 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-51 Pressure	(psig)	10 - 20	30	8	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6/12/2019 1115	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-52 Pressure	(psig)	10 - 20	30	12	
VAS-53 Flow Rate	(scfm)	TBD	TBD	7.9	
VAS-53 Pressure	(psig)	10 - 20	30	8	
VAS-54 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-54 Pressure	(psig)	10 - 20	30	8	
VAS-55 Flow Rate	(scfm)	TBD	TBD	9.9	
VAS-55 Pressure	(psig)	10 - 20	30	4	
VAS-56 Flow Rate	(scfm)	TBD	TBD	7.9	
VAS-56 Pressure	(psig)	10 - 20	30	4	
VAS-57 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-57 Pressure	(psig)	10 - 20	30	4	
VAS-58 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-58 Pressure	(psig)	10 - 20	30	4	
VAS-59 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-59 Pressure	(psig)	10 - 20	30	5	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	13.7	
BCA-01 Pressure	(psig)	0 - 5	5	19	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.5	
BCA-02 Pressure	(psig)	0 - 5	5	20	
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

NOT OPERATING

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
6/12/2019 11:15	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				
Equipment Maintenance	**Frequency**	**Conditions Good?**	**Repaired / Replaced?**	**Scheduled**	**Comment**
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / (No)	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / (No)	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	Yes / (No)	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: → Inspect storm water in secondary containment. No signs of petro. Contamination. Drain to ground surface.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6/11/2019 1300	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	Yes	
Air Compressor 1 Run Time / LOAD	(hours)	NA	NA	17148:57 / 13905:55	
Air Compressor 1 Temp	(F)	60 - 100	110	200	Ambient= 80°F
Air Compressor 1 Pressure	(psig)	90 - 110	100	103	
Air Compressor 2 Run Time	(hours)	NA	NA	15126.21 / 13718:29	
Air Compressor 2 Temp	(F)	60 - 100	110	190	
Air Compressor 2 Pressure	(psig)	90 - 110	100	103	
Receiver Tank Pressure	(psig)	90 - 110	100	115	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	100	
Manifold Temperature	(F)	60 - 100	110	108	
Manifold Flow Rate	(scfm)	TBD	TBD	1840	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	525.3	
HAS-1 Valve Position	(%)	TBD	TBD	69.3	
HAS-1 Pressure	(psig)	10 - 20	30	25	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	501.9	
HAS-2 Valve Position	(%)	TBD	TBD	39.0	
HAS-2 Pressure	(psig)	10 - 20	30	27	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	264.6	
HAS-3 Valve Position	(%)	TBD	TBD	29.4	
HAS-3 Pressure	(psig)	10 - 20	30	18	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):
Green Ink = increases made to flows.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6/19/19 1300	Scott Shipp	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	9.8	
VAS-01 Pressure	(psig)	10 - 20	30	20	
VAS-02 Flow Rate	(scfm)	TBD	TBD	0.8 1.0	
VAS-02 Pressure	(psig)	10 - 20	30	27 30	
VAS-03 Flow Rate	(scfm)	TBD	TBD	—	
VAS-03 Pressure	(psig)	10 - 20	30	—	
VAS-04 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-04 Pressure	(psig)	10 - 20	30	2	
VAS-05 Flow Rate	(scfm)	TBD	TBD	—	
VAS-05 Pressure	(psig)	10 - 20	30		
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD		
VAS-07 Pressure	(psig)	10 - 20	30		
VAS-08 Flow Rate	(scfm)	TBD	TBD		
VAS-08 Pressure	(psig)	10 - 20	30		
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD	1.7 2.6	
VAS-11 Pressure	(psig)	10 - 20	30	17 21	
VAS-12 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-12 Pressure	(psig)	10 - 20	30	13	
VAS-13 Flow Rate	(scfm)	TBD	TBD	4.8 7.8	
VAS-13 Pressure	(psig)	10 - 20	30	16 18	
VAS-14 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-14 Pressure	(psig)	10 - 20	30	16	
VAS-15 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-15 Pressure	(psig)	10 - 20	30	12	
VAS-16 Flow Rate	(scfm)	TBD	TBD	9.7	
VAS-16 Pressure	(psig)	10 - 20	30	19	
VAS-17 Flow Rate	(scfm)	TBD	TBD	3.1 4.8	
VAS-17 Pressure	(psig)	10 - 20	30	6 6	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6/19/2019 1360	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	6.4	
VAS-18 Pressure	(psig)	10 - 20	30	1	
VAS-19 Flow Rate	(scfm)	TBD	TBD	3.0	
VAS-19 Pressure	(psig)	10 - 20	30	14	
VAS-20 Flow Rate	(scfm)	TBD	TBD	6.2	
VAS-20 Pressure	(psig)	10 - 20	30	28	
VAS-21 Flow Rate	(scfm)	TBD	TBD	6.7	
VAS-21 Pressure	(psig)	10 - 20	30	24	
VAS-22 Flow Rate	(scfm)	TBD	TBD	9.3	
VAS-22 Pressure	(psig)	10 - 20	30	21	
VAS-23 Flow Rate	(scfm)	TBD	TBD	7.5	
VAS-23 Pressure	(psig)	10 - 20	30	24	
VAS-24 Flow Rate	(scfm)	TBD	TBD	5.8	
VAS-24 Pressure	(psig)	10 - 20	30	24	
VAS-25 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-25 Pressure	(psig)	10 - 20	30	22	
VAS-26 Flow Rate	(scfm)	TBD	TBD	1.6	1.9
VAS-26 Pressure	(psig)	10 - 20	30	30	31
VAS-27 Flow Rate	(scfm)	TBD	TBD	0.8	1.1
VAS-27 Pressure	(psig)	10 - 20	30	28	29
VAS-28 Flow Rate	(scfm)	TBD	TBD	4.2	5.4
VAS-28 Pressure	(psig)	10 - 20	30	12	16
VAS-29 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-29 Pressure	(psig)	10 - 20	30	16	
VAS-30 Flow Rate	(scfm)	TBD	TBD	7.5	8.9
VAS-30 Pressure	(psig)	10 - 20	30	6	6
VAS-31 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-31 Pressure	(psig)	10 - 20	30	29	
VAS-32 Flow Rate	(scfm)	TBD	TBD	7.6	
VAS-32 Pressure	(psig)	10 - 20	30	18	
VAS-33 Flow Rate	(scfm)	TBD	TBD	5.8	7.8
VAS-33 Pressure	(psig)	10 - 20	30	18	19
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-34 Pressure	(psig)	10 - 20	30	22	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6/19/2019 1300	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD		
VAS-41 Pressure	(psig)	10 - 20	30		
VAS-42A Flow Rate	(scfm)	TBD	TBD	3.7	8.5
VAS-42A Pressure	(psig)	10 - 20	30	10	13
VAS-43A Flow Rate	(scfm)	TBD	TBD		
VAS-43A Pressure	(psig)	10 - 20	30		
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD	6.5	
VAS-45 Pressure	(psig)	10 - 20	30	24	
VAS-46 Flow Rate	(scfm)	TBD	TBD	—	
VAS-46 Pressure	(psig)	10 - 20	30	—	
VAS-47 Flow Rate	(scfm)	TBD	TBD	7.6	8.0
VAS-47 Pressure	(psig)	10 - 20	30	8	8
VAS-48 Flow Rate	(scfm)	TBD	TBD	7.1	8.0
VAS-48 Pressure	(psig)	10 - 20	30	9	9
VAS-49 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-49 Pressure	(psig)	10 - 20	30	11	
VAS-50 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-50 Pressure	(psig)	10 - 20	30	9	
VAS-51 Flow Rate	(scfm)	TBD	TBD	7.3	8.0
VAS-51 Pressure	(psig)	10 - 20	30	6	6

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6/18/2019 1300	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-52 Pressure	(psig)	10 - 20	30	9	
VAS-53 Flow Rate	(scfm)	TBD	TBD	7.6 8.0	
VAS-53 Pressure	(psig)	10 - 20	30	7 7	
VAS-54 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-54 Pressure	(psig)	10 - 20	30	6	
VAS-55 Flow Rate	(scfm)	TBD	TBD	9.6	
VAS-55 Pressure	(psig)	10 - 20	30	4	
VAS-56 Flow Rate	(scfm)	TBD	TBD	7.3 8.0	
VAS-56 Pressure	(psig)	10 - 20	30	2 2	
VAS-57 Flow Rate	(scfm)	TBD	TBD	7.6 8.0	
VAS-57 Pressure	(psig)	10 - 20	30	3 3	
VAS-58 Flow Rate	(scfm)	TBD	TBD	7.3 8.0	
VAS-58 Pressure	(psig)	10 - 20	30	4 4	
VAS-59 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-59 Pressure	(psig)	10 - 20	30	4	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	13.9	
BCA-01 Pressure	(psig)	0 - 5	5	18	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.9	
BCA-02 Pressure	(psig)	0 - 5	5	19	
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
6/19/2019 1300	SCOTT SMITH	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				
Equipment Maintenance	**Frequency**	**Conditions Good?**	**Repaired / Replaced?**	**Scheduled**	**Comment**
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / No	Annual Completed by Anderson Fire	
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / (No)	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / (No)	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	Yes / (No)	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6-27-11/00	T. HALL/GM		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	17,317:28	17,319:01
Air Compressor 1 Temp	(F)	60 - 100	110	209	210
Air Compressor 1 Pressure	(psig)	90 - 110	100	103	103
Air Compressor 2 Run Time	(hours)	NA	NA	15,294:52	15,296:25
Air Compressor 2 Temp	(F)	60 - 100	110	189	194
Air Compressor 2 Pressure	(psig)	90 - 110	100	107	103
Receiver Tank Pressure	(psig)	90 - 110	100	115	115
Receiver Tank Temperature	(F)	60 - 100	110	—	—
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	100	100
Manifold Temperature	(F)	60 - 100	110	112	114
Manifold Flow Rate	(scfm)	TBD	TBD	1932	1852
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	524.9	525.4
HAS-1 Valve Position	(%)	TBD	TBD	71.2	71.0
HAS-1 Pressure	(psig)	10 - 20	30	26	26
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	500.9	502.0
HAS-2 Valve Position	(%)	TBD	TBD	45.4	46.3
HAS-2 Pressure	(psig)	10 - 20	30	28	28
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	266.8	264.7
HAS-3 Valve Position	(%)	TBD	TBD	30.1	30.3
HAS-3 Pressure	(psig)	10 - 20	30	22	22

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

SYSTEM SHUTDOWN 6/23 @ 1520 DUE TO POWER OUTAGE
SYSTEM RESTARTED 6/24 @ 1300

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6-27/1100	T. HALL/GM		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCME03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	5.9	
VAS-01 Pressure	(psig)	10 - 20	30	20	
VAS-02 Flow Rate	(scfm)	TBD	TBD	0.9	
VAS-02 Pressure	(psig)	10 - 20	30	31	
VAS-03 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-03 Pressure	(psig)	10 - 20	30	22	
VAS-04 Flow Rate	(scfm)	TBD	TBD	8.9	
VAS-04 Pressure	(psig)	10 - 20	30	0	
VAS-05 Flow Rate	(scfm)	TBD	TBD	7.8	7.9
VAS-05 Pressure	(psig)	10 - 20	30	10	10
VAS-06 Flow Rate	(scfm)	TBD	TBD	7.1	7.4
VAS-06 Pressure	(psig)	10 - 20	30	10	10
VAS-07 Flow Rate	(scfm)	TBD	TBD	8.3	8.9
VAS-07 Pressure	(psig)	10 - 20	30	10	10
VAS-08 Flow Rate	(scfm)	TBD	TBD	11.0	11.8
VAS-08 Pressure	(psig)	10 - 20	30	18	18
VAS-09 Flow Rate	(scfm)	TBD	TBD	3.6	3.6
VAS-09 Pressure	(psig)	10 - 20	30	6	6
VAS-10 Flow Rate	(scfm)	TBD	TBD	8.3	8.4
VAS-10 Pressure	(psig)	10 - 20	30	8	8
VAS-11 Flow Rate	(scfm)	TBD	TBD	6.9	
VAS-11 Pressure	(psig)	10 - 20	30	20	
VAS-12 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-12 Pressure	(psig)	10 - 20	30	12	
VAS-13 Flow Rate	(scfm)	TBD	TBD		
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD		
VAS-16 Pressure	(psig)	10 - 20	30		
VAS-17 Flow Rate	(scfm)	TBD	TBD		
VAS-17 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6-27/1100	T. HALL/GU		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCME03920469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD		
VAS-20 Pressure	(psig)	10 - 20	30		
VAS-21 Flow Rate	(scfm)	TBD	TBD		
VAS-21 Pressure	(psig)	10 - 20	30		
VAS-22 Flow Rate	(scfm)	TBD	TBD	9.3	9.4
VAS-22 Pressure	(psig)	10 - 20	30	20	20
VAS-23 Flow Rate	(scfm)	TBD	TBD	7.9	8.0
VAS-23 Pressure	(psig)	10 - 20	30	22	22
VAS-24 Flow Rate	(scfm)	TBD	TBD	6.2	6.2
VAS-24 Pressure	(psig)	10 - 20	30	22	22
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD	8.0	8.0
VAS-32 Pressure	(psig)	10 - 20	30	17	17
VAS-33 Flow Rate	(scfm)	TBD	TBD	7.6	7.6
VAS-33 Pressure	(psig)	10 - 20	30	18	18
VAS-34 Flow Rate	(scfm)	TBD	TBD	8.1	8.6
VAS-34 Pressure	(psig)	10 - 20	30	20	20

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6-27/1100	T. HALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCME03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-35 Pressure	(psig)	10 - 20	30	25	
VAS-36 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-36 Pressure	(psig)	10 - 20	30	15	
VAS-37 Flow Rate	(scfm)	TBD	TBD	9.8	
VAS-37 Pressure	(psig)	10 - 20	30	10	
VAS-38 Flow Rate	(scfm)	TBD	TBD	3.6	
VAS-38 Pressure	(psig)	10 - 20	30	5	
VAS-39 Flow Rate	(scfm)	TBD	TBD	7.4	
VAS-39 Pressure	(psig)	10 - 20	30	18	
VAS-40 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-40 Pressure	(psig)	10 - 20	30	21	
VAS-41 Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-41 Pressure	(psig)	10 - 20	30	15	
VAS-42A Flow Rate	(scfm)	TBD	TBD	12.7	12.6
VAS-42A Pressure	(psig)	10 - 20	30	18	18
VAS-43A Flow Rate	(scfm)	TBD	TBD	1.4	
VAS-43A Pressure	(psig)	10 - 20	30	30	
VAS-44A Flow Rate	(scfm)	TBD	TBD	0.7	
VAS-44A Pressure	(psig)	10 - 20	30	28	
VAS-45 Flow Rate	(scfm)	TBD	TBD		4.2
VAS-45 Pressure	(psig)	10 - 20	30		28
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	7.1	7.1
VAS-47 Pressure	(psig)	10 - 20	30	10	10
VAS-48 Flow Rate	(scfm)	TBD	TBD	8.0	8.1
VAS-48 Pressure	(psig)	10 - 20	30	11	11
VAS-49 Flow Rate	(scfm)	TBD	TBD	7.9	7.9
VAS-49 Pressure	(psig)	10 - 20	30	11	11
VAS-50 Flow Rate	(scfm)	TBD	TBD	9.3	9.3
VAS-50 Pressure	(psig)	10 - 20	30	10	11
VAS-51 Flow Rate	(scfm)	TBD	TBD	7.9	7.8
VAS-51 Pressure	(psig)	10 - 20	30	5	5

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
6-27/1100	T. HALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	7.9	7.8
VAS-52 Pressure	(psig)	10 - 20	30	10	10
VAS-53 Flow Rate	(scfm)	TBD	TBD	8.2	8.1
VAS-53 Pressure	(psig)	10 - 20	30	7	8
VAS-54 Flow Rate	(scfm)	TBD	TBD	10.2	10.4
VAS-54 Pressure	(psig)	10 - 20	30	10	10
VAS-55 Flow Rate	(scfm)	TBD	TBD	8.5	8.5
VAS-55 Pressure	(psig)	10 - 20	30	6	6
VAS-56 Flow Rate	(scfm)	TBD	TBD	7.9	7.9
VAS-56 Pressure	(psig)	10 - 20	30	0	0
VAS-57 Flow Rate	(scfm)	TBD	TBD	7.8	7.7
VAS-57 Pressure	(psig)	10 - 20	30	8	8
VAS-58 Flow Rate	(scfm)	TBD	TBD	8.1	8.1
VAS-58 Pressure	(psig)	10 - 20	30	8	8
VAS-59 Flow Rate	(scfm)	TBD	TBD	7.9	7.9
VAS-59 Pressure	(psig)	10 - 20	30	8	8
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	13.9	13.9
BCA-01 Pressure	(psig)	0 - 5	5	18	16
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.4	14.5
BCA-02 Pressure	(psig)	0 - 5	5	18	18
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
6-27/1100	T. HALL/GL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		TREE DOWN NEAR RT-2L
Perform air monitoring near Cupboard Creek.	Each visit	Yes / No	Yes / No		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
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Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7-3-19/1200	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	17,461:28	17,465:27
Air Compressor 1 Temp	(F)	60 - 100	110	211	218
Air Compressor 1 Pressure	(psig)	90 - 110	100	102	102
Air Compressor 2 Run Time	(hours)	NA	NA	15,438:52	15,442:51
Air Compressor 2 Temp	(F)	60 - 100	110	192	201
Air Compressor 2 Pressure	(psig)	90 - 110	100	102	102
Receiver Tank Pressure	(psig)	90 - 110	100	115	114
Receiver Tank Temperature	(F)	60 - 100	110	-	-
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	100	100
Manifold Temperature	(F)	60 - 100	110	118	120
Manifold Flow Rate	(scfm)	TBD	TBD	1944	1950
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	525.8	524.8
HAS-1 Valve Position	(%)	TBD	TBD	69.5	69.6
HAS-1 Pressure	(psig)	10 - 20	30	26	25
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	502.3	502.3
HAS-2 Valve Position	(%)	TBD	TBD	43.2	44.1
HAS-2 Pressure	(psig)	10 - 20	30	27	27
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	264.4	262.1
HAS-3 Valve Position	(%)	TBD	TBD	31.1	31.5
HAS-3 Pressure	(psig)	10 - 20	30	20	20

Parts Needed:	
Parts Installed:	

Notes (Include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7-3-19/1200	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCME03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		5.9
VAS-01 Pressure	(psig)	10 - 20	30		22
VAS-02 Flow Rate	(scfm)	TBD	TBD		0.8
VAS-02 Pressure	(psig)	10 - 20	30		30
VAS-03 Flow Rate	(scfm)	TBD	TBD	7.6	|
VAS-03 Pressure	(psig)	10 - 20	30	22	|
VAS-04 Flow Rate	(scfm)	TBD	TBD	|	9.7
VAS-04 Pressure	(psig)	10 - 20	30	|	0
VAS-05 Flow Rate	(scfm)	TBD	TBD	|	7.6
VAS-05 Pressure	(psig)	10 - 20	30	|	10
VAS-06 Flow Rate	(scfm)	TBD	TBD	|	6.7
VAS-06 Pressure	(psig)	10 - 20	30	|	10
VAS-07 Flow Rate	(scfm)	TBD	TBD	|	8.1
VAS-07 Pressure	(psig)	10 - 20	30	|	10
VAS-08 Flow Rate	(scfm)	TBD	TBD	|	10.6
VAS-08 Pressure	(psig)	10 - 20	30	|	18
VAS-09 Flow Rate	(scfm)	TBD	TBD	|	3.4
VAS-09 Pressure	(psig)	10 - 20	30	|	5
VAS-10 Flow Rate	(scfm)	TBD	TBD	|	7.9
VAS-10 Pressure	(psig)	10 - 20	30	|	8
VAS-11 Flow Rate	(scfm)	TBD	TBD	|	10.0
VAS-11 Pressure	(psig)	10 - 20	30	|	18
VAS-12 Flow Rate	(scfm)	TBD	TBD	|	8.5
VAS-12 Pressure	(psig)	10 - 20	30	|	12
VAS-13 Flow Rate	(scfm)	TBD	TBD	8.1	|
VAS-13 Pressure	(psig)	10 - 20	30	16	|
VAS-14 Flow Rate	(scfm)	TBD	TBD	8.1	|
VAS-14 Pressure	(psig)	10 - 20	30	13	|
VAS-15 Flow Rate	(scfm)	TBD	TBD	7.3	|
VAS-15 Pressure	(psig)	10 - 20	30	11	|
VAS-16 Flow Rate	(scfm)	TBD	TBD	10.2	|
VAS-16 Pressure	(psig)	10 - 20	30	18	|
VAS-17 Flow Rate	(scfm)	TBD	TBD	5.0	|
VAS-17 Pressure	(psig)	10 - 20	30	0	|

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7/19/1200	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCME03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	7.0	|
VAS-18 Pressure	(psig)	10 - 20	30	0	|
VAS-19 Flow Rate	(scfm)	TBD	TBD	3.9	|
VAS-19 Pressure	(psig)	10 - 20	30	14	|
VAS-20 Flow Rate	(scfm)	TBD	TBD	9.3	9.7
VAS-20 Pressure	(psig)	10 - 20	30	28	28
VAS-21 Flow Rate	(scfm)	TBD	TBD	11.3	|
VAS-21 Pressure	(psig)	10 - 20	30	21	|
VAS-22 Flow Rate	(scfm)	TBD	TBD	8.8	8.8
VAS-22 Pressure	(psig)	10 - 20	30	20	20
VAS-23 Flow Rate	(scfm)	TBD	TBD	7.8	7.8
VAS-23 Pressure	(psig)	10 - 20	30	22	20
VAS-24 Flow Rate	(scfm)	TBD	TBD	5.3	5.3
VAS-24 Pressure	(psig)	10 - 20	30	22	22
VAS-25 Flow Rate	(scfm)	TBD	TBD	10.1	|
VAS-25 Pressure	(psig)	10 - 20	30	15	|
VAS-26 Flow Rate	(scfm)	TBD	TBD	3.0	|
VAS-26 Pressure	(psig)	10 - 20	30	28	|
VAS-27 Flow Rate	(scfm)	TBD	TBD	1.5	|
VAS-27 Pressure	(psig)	10 - 20	30	27	|
VAS-28 Flow Rate	(scfm)	TBD	TBD	5.8	|
VAS-28 Pressure	(psig)	10 - 20	30	15	|
VAS-29 Flow Rate	(scfm)	TBD	TBD	8.2	|
VAS-29 Pressure	(psig)	10 - 20	30	12	|
VAS-30 Flow Rate	(scfm)	TBD	TBD	8.8	|
VAS-30 Pressure	(psig)	10 - 20	30	4	|
VAS-31 Flow Rate	(scfm)	TBD	TBD	8.1	|
VAS-31 Pressure	(psig)	10 - 20	30	28	|
VAS-32 Flow Rate	(scfm)	TBD	TBD	7.0	6.7
VAS-32 Pressure	(psig)	10 - 20	30	17	17
VAS-33 Flow Rate	(scfm)	TBD	TBD	7.0	6.9
VAS-33 Pressure	(psig)	10 - 20	30	18	18
VAS-34 Flow Rate	(scfm)	TBD	TBD	7.8	7.7
VAS-34 Pressure	(psig)	10 - 20	30	20	20

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7-2-19/1200	T. Hill		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	7.7	8.5
VAS-35 Pressure	(psig)	10 - 20	30	25	25
VAS-36 Flow Rate	(scfm)	TBD	TBD	6.6	8.0
VAS-36 Pressure	(psig)	10 - 20	30	18	18
VAS-37 Flow Rate	(scfm)	TBD	TBD	9.2	9.7
VAS-37 Pressure	(psig)	10 - 20	30	10	10
VAS-38 Flow Rate	(scfm)	TBD	TBD	3.3	3.2
VAS-38 Pressure	(psig)	10 - 20	30	5	5
VAS-39 Flow Rate	(scfm)	TBD	TBD	6.2	7.2
VAS-39 Pressure	(psig)	10 - 20	30	19	18
VAS-40 Flow Rate	(scfm)	TBD	TBD	6.6	8.8
VAS-40 Pressure	(psig)	10 - 20	30	22	20
VAS-41 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-41 Pressure	(psig)	10 - 20	30	~~18~~	15
VAS-42A Flow Rate	(scfm)	TBD	TBD	12.3	12.3
VAS-42A Pressure	(psig)	10 - 20	30	15	15
VAS-43A Flow Rate	(scfm)	TBD	TBD		1.4
VAS-43A Pressure	(psig)	10 - 20	30		30
VAS-44A Flow Rate	(scfm)	TBD	TBD		0.7
VAS-44A Pressure	(psig)	10 - 20	30		27
VAS-45 Flow Rate	(scfm)	TBD	TBD		
VAS-45 Pressure	(psig)	10 - 20	30		
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	6.3	6.3
VAS-47 Pressure	(psig)	10 - 20	30	8	8
VAS-48 Flow Rate	(scfm)	TBD	TBD	7.8	7.7
VAS-48 Pressure	(psig)	10 - 20	30	10	10
VAS-49 Flow Rate	(scfm)	TBD	TBD	8.0	7.8
VAS-49 Pressure	(psig)	10 - 20	30	10	10
VAS-50 Flow Rate	(scfm)	TBD	TBD	8.3	8.6
VAS-50 Pressure	(psig)	10 - 20	30	8	8
VAS-51 Flow Rate	(scfm)	TBD	TBD	7.5	7.3
VAS-51 Pressure	(psig)	10 - 20	30	4	4

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7-3-19/1200	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	7.6	7.5
VAS-52 Pressure	(psig)	10 - 20	30	10	10
VAS-53 Flow Rate	(scfm)	TBD	TBD	8.1	8.0
VAS-53 Pressure	(psig)	10 - 20	30	5	5
VAS-54 Flow Rate	(scfm)	TBD	TBD	9.6	9.6
VAS-54 Pressure	(psig)	10 - 20	30	7	7
VAS-55 Flow Rate	(scfm)	TBD	TBD	7.7	7.7
VAS-55 Pressure	(psig)	10 - 20	30	4	4
VAS-56 Flow Rate	(scfm)	TBD	TBD	7.5	7.4
VAS-56 Pressure	(psig)	10 - 20	30	0	0
VAS-57 Flow Rate	(scfm)	TBD	TBD	7.3	7.1
VAS-57 Pressure	(psig)	10 - 20	30	5	5
VAS-58 Flow Rate	(scfm)	TBD	TBD	7.4	7.3
VAS-58 Pressure	(psig)	10 - 20	30	8	8
VAS-59 Flow Rate	(scfm)	TBD	TBD	7.5	7.4
VAS-59 Pressure	(psig)	10 - 20	30	5	5
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.4	14.3
BCA-01 Pressure	(psig)	0 - 5	5	18	18
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.1	14.1
BCA-02 Pressure	(psig)	0 - 5	5	18	18
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintanance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
7-19-20	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / (No)		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / (No)		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / (No)		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7.11.19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	17,651:01	17.653:56
Air Compressor 1 Temp	(F)	60 - 100	110	196	203
Air Compressor 1 Pressure	(psig)	90 - 110	100	103	102
Air Compressor 2 Run Time	(hours)	NA	NA	15,628:25	15,631:19
Air Compressor 2 Temp	(F)	60 - 100	110	186	185
Air Compressor 2 Pressure	(psig)	90 - 110	100	103	102
Receiver Tank Pressure	(psig)	90 - 110	100	116	115
Receiver Tank Temperature	(F)	60 - 100	110	—	—
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	102	102
Manifold Temperature	(F)	60 - 100	110	106	110
Manifold Flow Rate	(scfm)	TBD	TBD	1837	1948
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	527.5	523.9
HAS-1 Valve Position	(%)	TBD	TBD	69.2	69.9
HAS-1 Pressure	(psig)	10 - 20	30	26	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502	502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	502.2	502.5
HAS-2 Valve Position	(%)	TBD	TBD	44.1	44.1
HAS-2 Pressure	(psig)	10 - 20	30	28	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	263.6	262.3
HAS-3 Valve Position	(%)	TBD	TBD	28.3	28.3
HAS-3 Pressure	(psig)	10 - 20	30	20	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7.11.19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		
VAS-01 Pressure	(psig)	10 - 20	30		
VAS-02 Flow Rate	(scfm)	TBD	TBD		
VAS-02 Pressure	(psig)	10 - 20	30		
VAS-03 Flow Rate	(scfm)	TBD	TBD		
VAS-03 Pressure	(psig)	10 - 20	30		
VAS-04 Flow Rate	(scfm)	TBD	TBD		
VAS-04 Pressure	(psig)	10 - 20	30		
VAS-05 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-05 Pressure	(psig)	10 - 20	30	8	
VAS-06 Flow Rate	(scfm)	TBD	TBD	7.1	
VAS-06 Pressure	(psig)	10 - 20	30	10	
VAS-07 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-07 Pressure	(psig)	10 - 20	30	8	
VAS-08 Flow Rate	(scfm)	TBD	TBD	11.4	
VAS-08 Pressure	(psig)	10 - 20	30	15	
VAS-09 Flow Rate	(scfm)	TBD	TBD	3.7	
VAS-09 Pressure	(psig)	10 - 20	30	6	
VAS-10 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-10 Pressure	(psig)	10 - 20	30	10	
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-13 Pressure	(psig)	10 - 20	30		18
VAS-14 Flow Rate	(scfm)	TBD	TBD		8.5
VAS-14 Pressure	(psig)	10 - 20	30		15
VAS-15 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-15 Pressure	(psig)	10 - 20	30		15
VAS-16 Flow Rate	(scfm)	TBD	TBD		10.7
VAS-16 Pressure	(psig)	10 - 20	30		18
VAS-17 Flow Rate	(scfm)	TBD	TBD		4.9
VAS-17 Pressure	(psig)	10 - 20	30		5

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7/11/19 0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		7.0
VAS-18 Pressure	(psig)	10 - 20	30		0
VAS-19 Flow Rate	(scfm)	TBD	TBD		4.8
VAS-19 Pressure	(psig)	10 - 20	30		15
VAS-20 Flow Rate	(scfm)	TBD	TBD		10.8
VAS-20 Pressure	(psig)	10 - 20	30		28
VAS-21 Flow Rate	(scfm)	TBD	TBD		7.7
VAS-21 Pressure	(psig)	10 - 20	30		25
VAS-22 Flow Rate	(scfm)	TBD	TBD	9.0	8.8
VAS-22 Pressure	(psig)	10 - 20	30	22	22
VAS-23 Flow Rate	(scfm)	TBD	TBD	7.2	7.0
VAS-23 Pressure	(psig)	10 - 20	30	24	24
VAS-24 Flow Rate	(scfm)	TBD	TBD	5.3	5.2
VAS-24 Pressure	(psig)	10 - 20	30	22	22
VAS-25 Flow Rate	(scfm)	TBD	TBD		9.9
VAS-25 Pressure	(psig)	10 - 20	30		22
VAS-26 Flow Rate	(scfm)	TBD	TBD		3.8
VAS-26 Pressure	(psig)	10 - 20	30		28
VAS-27 Flow Rate	(scfm)	TBD	TBD		5.5
VAS-27 Pressure	(psig)	10 - 20	30		26
VAS-28 Flow Rate	(scfm)	TBD	TBD		6.2
VAS-28 Pressure	(psig)	10 - 20	30		18
VAS-29 Flow Rate	(scfm)	TBD	TBD		8.6
VAS-29 Pressure	(psig)	10 - 20	30		15
VAS-30 Flow Rate	(scfm)	TBD	TBD		8.9
VAS-30 Pressure	(psig)	10 - 20	30		7
VAS-31 Flow Rate	(scfm)	TBD	TBD		8.3
VAS-31 Pressure	(psig)	10 - 20	30		29
VAS-32 Flow Rate	(scfm)	TBD	TBD	6.5	6.3
VAS-32 Pressure	(psig)	10 - 20	30	20	18
VAS-33 Flow Rate	(scfm)	TBD	TBD	6.6	6.5
VAS-33 Pressure	(psig)	10 - 20	30	20	20
VAS-34 Flow Rate	(scfm)	TBD	TBD	7.9	7.9
VAS-34 Pressure	(psig)	10 - 20	30	22	22

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7.11.19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	|	7.9
VAS-35 Pressure	(psig)	10 - 20	30	|	28
VAS-36 Flow Rate	(scfm)	TBD	TBD	|	7.4
VAS-36 Pressure	(psig)	10 - 20	30	|	18
VAS-37 Flow Rate	(scfm)	TBD	TBD	|	9.6
VAS-37 Pressure	(psig)	10 - 20	30	|	10
VAS-38 Flow Rate	(scfm)	TBD	TBD	|	3.4
VAS-38 Pressure	(psig)	10 - 20	30	|	8
VAS-39 Flow Rate	(scfm)	TBD	TBD	|	5.9
VAS-39 Pressure	(psig)	10 - 20	30	|	20
VAS-40 Flow Rate	(scfm)	TBD	TBD	|	7.9
VAS-40 Pressure	(psig)	10 - 20	30	|	22
VAS-41 Flow Rate	(scfm)	TBD	TBD	4.3	|
VAS-41 Pressure	(psig)	10 - 20	30	10	|
VAS-42A Flow Rate	(scfm)	TBD	TBD	11.9	12.0
VAS-42A Pressure	(psig)	10 - 20	30	18	18
VAS-43A Flow Rate	(scfm)	TBD	TBD	|	|
VAS-43A Pressure	(psig)	10 - 20	30	|	|
VAS-44A Flow Rate	(scfm)	TBD	TBD	|	|
VAS-44A Pressure	(psig)	10 - 20	30	|	|
VAS-45 Flow Rate	(scfm)	TBD	TBD	|	7.5
VAS-45 Pressure	(psig)	10 - 20	30	|	24
VAS-46 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-46 Pressure	(psig)	10 - 20	30	|	|
VAS-47 Flow Rate	(scfm)	TBD	TBD	5.5	7.5
VAS-47 Pressure	(psig)	10 - 20	30	8	10
VAS-48 Flow Rate	(scfm)	TBD	TBD	8.0	7.9
VAS-48 Pressure	(psig)	10 - 20	30	12	12
VAS-49 Flow Rate	(scfm)	TBD	TBD	7.6	7.6
VAS-49 Pressure	(psig)	10 - 20	30	12	12
VAS-50 Flow Rate	(scfm)	TBD	TBD	8.3	8.4
VAS-50 Pressure	(psig)	10 - 20	30	10	8
VAS-51 Flow Rate	(scfm)	TBD	TBD	7.4	7.4
VAS-51 Pressure	(psig)	10 - 20	30	8	8

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7.11.19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	7.3	7.2
VAS-52 Pressure	(psig)	10 - 20	30	10	10
VAS-53 Flow Rate	(scfm)	TBD	TBD	8.0	7.9
VAS-53 Pressure	(psig)	10 - 20	30	8	8
VAS-54 Flow Rate	(scfm)	TBD	TBD	9.5	9.6
VAS-54 Pressure	(psig)	10 - 20	30	10	10
VAS-55 Flow Rate	(scfm)	TBD	TBD	7.7	7.6
VAS-55 Pressure	(psig)	10 - 20	30	10	10
VAS-56 Flow Rate	(scfm)	TBD	TBD	7.5	7.5
VAS-56 Pressure	(psig)	10 - 20	30	0	0
VAS-57 Flow Rate	(scfm)	TBD	TBD	6.8	7.3
VAS-57 Pressure	(psig)	10 - 20	30	8	8
VAS-58 Flow Rate	(scfm)	TBD	TBD	7.6	7.5
VAS-58 Pressure	(psig)	10 - 20	30	10	10
VAS-59 Flow Rate	(scfm)	TBD	TBD	7.3	7.4
VAS-59 Pressure	(psig)	10 - 20	30	10	10
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.0	14.0
BCA-01 Pressure	(psig)	0 - 5	5	20	20
BCA-02 Flow Rate	(scfm)	TBD	TBD	13.9	13.8
BCA-02 Pressure	(psig)	0 - 5	5	20	20
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
7.11.19/0800	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		TREE STILL DOWN
Perform air monitoring near Cupboard Creek.	Each visit	~~Yes / No~~	Yes / No		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	~~Yes / No~~	~~Yes / No~~		
Inspect condensate system components. Drain and clean as needed.	Monthly	~~Yes / No~~	~~Yes / No~~		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / (No)		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: VAS - 01, 12, 29 STUCK OPEN UPON ARRIVAL LIQUID SEPERATOR HAD OIL INSIDE. S. SMIDA TO ORDER NEW FILTERS

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7/17/19 0900 1445	SCOTT SMITH	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time / LOAD HRS	(hours)	NA	NA	17795:06 / 14551:57	17800:27 / 14557:18
Air Compressor 1 Temp	(F)	60 - 100	110	196	212
Air Compressor 1 Pressure	(psig)	90 - 110	100	103	103
Air Compressor 2 Run Time / LOAD	(hours)	NA	NA	15772:31 / 14364:31	15778:02 / 14390:02
Air Compressor 2 Temp	(F)	60 - 100	110	189	203
Air Compressor 2 Pressure	(psig)	90 - 110	100	103	103
Receiver Tank Pressure	(psig)	90 - 110	100	115	115
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	100	100
Manifold Temperature	(F)	60 - 100	110	110	114
Manifold Flow Rate	(scfm)	TBD	TBD	1950	1940
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	525.6	522.6
HAS-1 Valve Position	(%)	TBD	TBD	69.1	69.6
HAS-1 Pressure	(psig)	10 - 20	30	26	26
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	501.2	501.6
HAS-2 Valve Position	(%)	TBD	TBD	42.6	40.7
HAS-2 Pressure	(psig)	10 - 20	30	28	28
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	266.4	260.5
HAS-3 Valve Position	(%)	TBD	TBD	28.3	29.6
HAS-3 Pressure	(psig)	10 - 20	30	20	20

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

→ after data collection, and when able, adjust well flows to target set points.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7/17 1419 1445	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		
VAS-01 Pressure	(psig)	10 - 20	30		
VAS-02 Flow Rate	(scfm)	TBD	TBD		
VAS-02 Pressure	(psig)	10 - 20	30		
VAS-03 Flow Rate	(scfm)	TBD	TBD		8
VAS-03 Pressure	(psig)	10 - 20	30		24
VAS-04 Flow Rate	(scfm)	TBD	TBD		
VAS-04 Pressure	(psig)	10 - 20	30		
VAS-05 Flow Rate	(scfm)	TBD	TBD		
VAS-05 Pressure	(psig)	10 - 20	30		
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD		
VAS-07 Pressure	(psig)	10 - 20	30		
VAS-08 Flow Rate	(scfm)	TBD	TBD		
VAS-08 Pressure	(psig)	10 - 20	30		
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD		8.8
VAS-13 Pressure	(psig)	10 - 20	30		16
VAS-14 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-14 Pressure	(psig)	10 - 20	30		12
VAS-15 Flow Rate	(scfm)	TBD	TBD		7.6
VAS-15 Pressure	(psig)	10 - 20	30		12
VAS-16 Flow Rate	(scfm)	TBD	TBD		9.5
VAS-16 Pressure	(psig)	10 - 20	30		18
VAS-17 Flow Rate	(scfm)	TBD	TBD		6.0
VAS-17 Pressure	(psig)	10 - 20	30		2

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7/17/19 1445	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		7.4
VAS-18 Pressure	(psig)	10 - 20	30		1
VAS-19 Flow Rate	(scfm)	TBD	TBD		5.6
VAS-19 Pressure	(psig)	10 - 20	30		13
VAS-20 Flow Rate	(scfm)	TBD	TBD		7.3
VAS-20 Pressure	(psig)	10 - 20	30		27
VAS-21 Flow Rate	(scfm)	TBD	TBD		6.2
VAS-21 Pressure	(psig)	10 - 20	30		24
VAS-22 Flow Rate	(scfm)	TBD	TBD		9.1
VAS-22 Pressure	(psig)	10 - 20	30		20
VAS-23 Flow Rate	(scfm)	TBD	TBD		7.4
VAS-23 Pressure	(psig)	10 - 20	30		23
VAS-24 Flow Rate	(scfm)	TBD	TBD		5.2
VAS-24 Pressure	(psig)	10 - 20	30		23
VAS-25 Flow Rate	(scfm)	TBD	TBD		8.5
VAS-25 Pressure	(psig)	10 - 20	30		17
VAS-26 Flow Rate	(scfm)	TBD	TBD		3.6
VAS-26 Pressure	(psig)	10 - 20	30		28
VAS-27 Flow Rate	(scfm)	TBD	TBD		4.5
VAS-27 Pressure	(psig)	10 - 20	30		24
VAS-28 Flow Rate	(scfm)	TBD	TBD		5.7
VAS-28 Pressure	(psig)	10 - 20	30		17
VAS-29 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-29 Pressure	(psig)	10 - 20	30		13
VAS-30 Flow Rate	(scfm)	TBD	TBD		8.9
VAS-30 Pressure	(psig)	10 - 20	30		6
VAS-31 Flow Rate	(scfm)	TBD	TBD		9.0
VAS-31 Pressure	(psig)	10 - 20	30		28
VAS-32 Flow Rate	(scfm)	TBD	TBD		6.5
VAS-32 Pressure	(psig)	10 - 20	30		19
VAS-33 Flow Rate	(scfm)	TBD	TBD		6.9
VAS-33 Pressure	(psig)	10 - 20	30		19
VAS-34 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-34 Pressure	(psig)	10 - 20	30		21

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7/11/19 1445	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-35 Pressure	(psig)	10 - 20	30		26
VAS-36 Flow Rate	(scfm)	TBD	TBD		7.3
VAS-36 Pressure	(psig)	10 - 20	30		14
VAS-37 Flow Rate	(scfm)	TBD	TBD		9.7
VAS-37 Pressure	(psig)	10 - 20	30		10
VAS-38 Flow Rate	(scfm)	TBD	TBD		3.4
VAS-38 Pressure	(psig)	10 - 20	30		6
VAS-39 Flow Rate	(scfm)	TBD	TBD		5.2
VAS-39 Pressure	(psig)	10 - 20	30		20
VAS-40 Flow Rate	(scfm)	TBD	TBD		7.4
VAS-40 Pressure	(psig)	10 - 20	30		22
VAS-41 Flow Rate	(scfm)	TBD	TBD		—
VAS-41 Pressure	(psig)	10 - 20	30		—
VAS-42A Flow Rate	(scfm)	TBD	TBD		7.4
VAS-42A Pressure	(psig)	10 - 20	30		13
VAS-43A Flow Rate	(scfm)	TBD	TBD		—
VAS-43A Pressure	(psig)	10 - 20	30		
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD		
VAS-45 Pressure	(psig)	10 - 20	30		
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-47 Pressure	(psig)	10 - 20	30		9
VAS-48 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-48 Pressure	(psig)	10 - 20	30		10
VAS-49 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-49 Pressure	(psig)	10 - 20	30		11
VAS-50 Flow Rate	(scfm)	TBD	TBD		7.3
VAS-50 Pressure	(psig)	10 - 20	30		8
VAS-51 Flow Rate	(scfm)	TBD	TBD		7.7
VAS-51 Pressure	(psig)	10 - 20	30		5

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7/17/2019 1445	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD		8.0
VAS-52 Pressure	(psig)	10 - 20	30		1
VAS-53 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-53 Pressure	(psig)	10 - 20	30		6
VAS-54 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-54 Pressure	(psig)	10 - 20	30		6
VAS-55 Flow Rate	(scfm)	TBD	TBD		8.8
VAS-55 Pressure	(psig)	10 - 20	30		3
VAS-56 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-56 Pressure	(psig)	10 - 20	30		1
VAS-57 Flow Rate	(scfm)	TBD	TBD		7.6
VAS-57 Pressure	(psig)	10 - 20	30		3
VAS-58 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-58 Pressure	(psig)	10 - 20	30		4
VAS-59 Flow Rate	(scfm)	TBD	TBD		7.7
VAS-59 Pressure	(psig)	10 - 20	30		4
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.0	shut off @ 0930 for sampling event — OFF / sampling
BCA-01 Pressure	(psig)	0 - 5	5	18	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.0	
BCA-02 Pressure	(psig)	0 - 5	5	18	
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
7/17/2019 0900	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				
Equipment Maintenance	**Frequency**	**Conditions Good?**	**Repaired / Replaced?**	**Scheduled**	**Comment**
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / (No)	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / (No)	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

- Wash compressor cabinet air intake filters
- 0" Pain gauge
- Drain inline filters
- Inspect OWS (BEKO) water for oil
- Replace 3 Solenoids on Group 1 (wells 1, 6 & 8)

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7/23/2019 1115	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	yes	
Air Compressor 1 Run Time /LOAD	(hours)	NA	NA	17853:12 / 14616:02	
Air Compressor 1 Temp	(F)	60 - 100	110	199	
Air Compressor 1 Pressure	(psig)	90 - 110	100	102	
Air Compressor 2 Run Time /LOAD	(hours)	NA	NA	15874:54 / 14466:55	
Air Compressor 2 Temp	(F)	60 - 100	110	191	
Air Compressor 2 Pressure	(psig)	90 - 110	100	102	
Receiver Tank Pressure	(psig)	90 - 110	100	115	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	100	
Manifold Temperature	(F)	60 - 100	110	106	
Manifold Flow Rate	(scfm)	TBD	TBD	1975	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	524.6	
HAS-1 Valve Position	(%)	TBD	TBD	69.3	
HAS-1 Pressure	(psig)	10 - 20	30	27	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	501.7	
HAS-2 Valve Position	(%)	TBD	TBD	35.4	
HAS-2 Pressure	(psig)	10 - 20	30	28	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	263.3	
HAS-3 Valve Position	(%)	TBD	TBD	27.7	
HAS-3 Pressure	(psig)	10 - 20	30	22	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

→ AC#1, AC#2 Compressor run fail alarms received on 7/19 @ 1705. Reset AC#2 remotely on 7/21 @ 1245, unable to restart or clear run fail on AC#1 remotely. Find 300 amp breaker tripped, no other fault found on local Sullair controller. Restart AC#1 @ 0900.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7/23/2019 1115	Scott Shivers	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	6.4	
VAS-01 Pressure	(psig)	10 - 20	30	22	
VAS-02 Flow Rate	(scfm)	TBD	TBD	0.2	
VAS-02 Pressure	(psig)	10 - 20	30	21	
VAS-03 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-03 Pressure	(psig)	10 - 20	30	22	
VAS-04 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-04 Pressure	(psig)	10 - 20	30	2	
VAS-05 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-05 Pressure	(psig)	10 - 20	30	9	
VAS-06 Flow Rate	(scfm)	TBD	TBD	7.3	
VAS-06 Pressure	(psig)	10 - 20	30	11	
VAS-07 Flow Rate	(scfm)	TBD	TBD	7.9	
VAS-07 Pressure	(psig)	10 - 20	30	9	
VAS-08 Flow Rate	(scfm)	TBD	TBD	10.3	
VAS-08 Pressure	(psig)	10 - 20	30	20	
VAS-09 Flow Rate	(scfm)	TBD	TBD	7.1	
VAS-09 Pressure	(psig)	10 - 20	30	10	
VAS-10 Flow Rate	(scfm)	TBD	TBD	7.5	
VAS-10 Pressure	(psig)	10 - 20	30	11	
VAS-11 Flow Rate	(scfm)	TBD	TBD	11.5	
VAS-11 Pressure	(psig)	10 - 20	30	15	
VAS-12 Flow Rate	(scfm)	TBD	TBD	7.6	
VAS-12 Pressure	(psig)	10 - 20	30	8	
VAS-13 Flow Rate	(scfm)	TBD	TBD		
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD		
VAS-16 Pressure	(psig)	10 - 20	30		
VAS-17 Flow Rate	(scfm)	TBD	TBD		
VAS-17 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7/23/2019 1115	Scott Shilda	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD		
VAS-20 Pressure	(psig)	10 - 20	30		
VAS-21 Flow Rate	(scfm)	TBD	TBD		
VAS-21 Pressure	(psig)	10 - 20	30		
VAS-22 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-22 Pressure	(psig)	10 - 20	30	22	
VAS-23 Flow Rate	(scfm)	TBD	TBD	5.5	
VAS-23 Pressure	(psig)	10 - 20	30	26	
VAS-24 Flow Rate	(scfm)	TBD	TBD	4.6	
VAS-24 Pressure	(psig)	10 - 20	30	24	
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD	7.3	
VAS-32 Pressure	(psig)	10 - 20	30	19	
VAS-33 Flow Rate	(scfm)	TBD	TBD	5.9	
VAS-33 Pressure	(psig)	10 - 20	30	20	
VAS-34 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-34 Pressure	(psig)	10 - 20	30	22	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7/23/2019 1115	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-35 Pressure	(psig)	10 - 20	30	11	
VAS-36 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-36 Pressure	(psig)	10 - 20	30	18	
VAS-37 Flow Rate	(scfm)	TBD	TBD	10.4	
VAS-37 Pressure	(psig)	10 - 20	30	11	
VAS-38 Flow Rate	(scfm)	TBD	TBD	6.2	
VAS-38 Pressure	(psig)	10 - 20	30	8	
VAS-39 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-39 Pressure	(psig)	10 - 20	30	20	
VAS-40 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-40 Pressure	(psig)	10 - 20	30	22	
VAS-41 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-41 Pressure	(psig)	10 - 20	30	15	
VAS-42A Flow Rate	(scfm)	TBD	TBD	7.6	
VAS-42A Pressure	(psig)	10 - 20	30	13	
VAS-43A Flow Rate	(scfm)	TBD	TBD	1.3	
VAS-43A Pressure	(psig)	10 - 20	30	33	
VAS-44A Flow Rate	(scfm)	TBD	TBD	0.4	
VAS-44A Pressure	(psig)	10 - 20	30	29	
VAS-45 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-45 Pressure	(psig)	10 - 20	30	25	
VAS-46 Flow Rate	(scfm)	TBD	TBD	—	
VAS-46 Pressure	(psig)	10 - 20	30	—	
VAS-47 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-47 Pressure	(psig)	10 - 20	30	10	
VAS-48 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-48 Pressure	(psig)	10 - 20	30	11	
VAS-49 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-49 Pressure	(psig)	10 - 20	30	13	
VAS-50 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-50 Pressure	(psig)	10 - 20	30	8	
VAS-51 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-51 Pressure	(psig)	10 - 20	30	8	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7/23/2019 1115	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-52 Pressure	(psig)	10 - 20	30	12	
VAS-53 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-53 Pressure	(psig)	10 - 20	30	7	
VAS-54 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-54 Pressure	(psig)	10 - 20	30	8	
VAS-55 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-55 Pressure	(psig)	10 - 20	30	5	
VAS-56 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-56 Pressure	(psig)	10 - 20	30	2	
VAS-57 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-57 Pressure	(psig)	10 - 20	30	3	
VAS-58 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-58 Pressure	(psig)	10 - 20	30	4	
VAS-59 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-59 Pressure	(psig)	10 - 20	30	5	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	15.0	
BCA-01 Pressure	(psig)	0 - 5	5	19	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.3	
BCA-02 Pressure	(psig)	0 - 5	5	18	
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
7/23/2019 11:15	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / (No)	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / (No)	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	Yes / (No)	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

- cleaned compressor inlet air filters
- drained in-line filter sumps
- inspect Beko OWS water, found ok.
- replace solenoids VAS 12, 13, 15 & 16
- reset hour meters after shutting off for SW Sampling on 7/17/19.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8-1-14/0900	T. HALL/KVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	16,090:45	16,094:19
Air Compressor 1 Temp	(F)	60 - 100	110	196	193
Air Compressor 1 Pressure	(psig)	90 - 110	100	103	102
Air Compressor 2 Run Time	(hours)	NA	NA	18,069:02	18,072:35
Air Compressor 2 Temp	(F)	60 - 100	110	207	201
Air Compressor 2 Pressure	(psig)	90 - 110	100	103	103
Receiver Tank Pressure	(psig)	90 - 110	100	116	116
Receiver Tank Temperature	(F)	60 - 100	110	—	—
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	102	102
Manifold Temperature	(F)	60 - 100	110	108	108
Manifold Flow Rate	(scfm)	TBD	TBD	1948	1955
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	523.2	525.4
HAS-1 Valve Position	(%)	TBD	TBD	69.3	69.1
HAS-1 Pressure	(psig)	10 - 20	30	25	25
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	501.6	502.8
HAS-2 Valve Position	(%)	TBD	TBD	42.7	41.3
HAS-2 Pressure	(psig)	10 - 20	30	28	28
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	262.0	262.8
HAS-3 Valve Position	(%)	TBD	TBD	27.8	29.8
HAS-3 Pressure	(psig)	10 - 20	30	20	20

Parts Needed:	
Parts Installed:	

Notes (Include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8.1.19/0900	T. HALL/GM		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		
VAS-01 Pressure	(psig)	10 - 20	30		
VAS-02 Flow Rate	(scfm)	TBD	TBD		
VAS-02 Pressure	(psig)	10 - 20	30		
VAS-03 Flow Rate	(scfm)	TBD	TBD		
VAS-03 Pressure	(psig)	10 - 20	30		
VAS-04 Flow Rate	(scfm)	TBD	TBD		
VAS-04 Pressure	(psig)	10 - 20	30		
VAS-05 Flow Rate	(scfm)	TBD	TBD		
VAS-05 Pressure	(psig)	10 - 20	30		
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD		
VAS-07 Pressure	(psig)	10 - 20	30		
VAS-08 Flow Rate	(scfm)	TBD	TBD		
VAS-08 Pressure	(psig)	10 - 20	30		
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD	9.1	8.7
VAS-13 Pressure	(psig)	10 - 20	30	18	17
VAS-14 Flow Rate	(scfm)	TBD	TBD	8.5	8.6
VAS-14 Pressure	(psig)	10 - 20	30	15	15
VAS-15 Flow Rate	(scfm)	TBD	TBD	8.7	8.5
VAS-15 Pressure	(psig)	10 - 20	30	11	10
VAS-16 Flow Rate	(scfm)	TBD	TBD	9.0	8.8
VAS-16 Pressure	(psig)	10 - 20	30	20	18
VAS-17 Flow Rate	(scfm)	TBD	TBD	5.1	4.6
VAS-17 Pressure	(psig)	10 - 20	30	5	0

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 Lewis Drive, Belton, South Carolina
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8.1.19/0900	T. Hoa/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCH603720469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	7.2	7.2
VAS-18 Pressure	(psig)	10 - 20	30	0	0
VAS-19 Flow Rate	(scfm)	TBD	TBD	6.8	6.9
VAS-19 Pressure	(psig)	10 - 20	30	15	15
VAS-20 Flow Rate	(scfm)	TBD	TBD	7.7	8.3
VAS-20 Pressure	(psig)	10 - 20	30	28	28
VAS-21 Flow Rate	(scfm)	TBD	TBD	8.0	7.8
VAS-21 Pressure	(psig)	10 - 20	30	25	25
VAS-22 Flow Rate	(scfm)	TBD	TBD	9.5	9.5
VAS-22 Pressure	(psig)	10 - 20	30	20	20
VAS-23 Flow Rate	(scfm)	TBD	TBD	8.9	8.9
VAS-23 Pressure	(psig)	10 - 20	30	24	24
VAS-24 Flow Rate	(scfm)	TBD	TBD	6.6	6.4
VAS-24 Pressure	(psig)	10 - 20	30	22	22
VAS-25 Flow Rate	(scfm)	TBD	TBD	8.1	8.2
VAS-25 Pressure	(psig)	10 - 20	30	20	20
VAS-26 Flow Rate	(scfm)	TBD	TBD	2.9	2.8
VAS-26 Pressure	(psig)	10 - 20	30	29	29
VAS-27 Flow Rate	(scfm)	TBD	TBD	6.0	5.8
VAS-27 Pressure	(psig)	10 - 20	30	25	25
VAS-28 Flow Rate	(scfm)	TBD	TBD	9.5	9.7
VAS-28 Pressure	(psig)	10 - 20	30	15	15
VAS-29 Flow Rate	(scfm)	TBD	TBD	8.6	8.5
VAS-29 Pressure	(psig)	10 - 20	30	15	15
VAS-30 Flow Rate	(scfm)	TBD	TBD	8.7	8.8
VAS-30 Pressure	(psig)	10 - 20	30	5	5
VAS-31 Flow Rate	(scfm)	TBD	TBD	7.3	7.2
VAS-31 Pressure	(psig)	10 - 20	30	29	28
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.0	8.7
VAS-32 Pressure	(psig)	10 - 20	30	17	17
VAS-33 Flow Rate	(scfm)	TBD	TBD	8.6	9.5
VAS-33 Pressure	(psig)	10 - 20	30	18	18
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.1	9.1
VAS-34 Pressure	(psig)	10 - 20	30	22	21

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8.1.19/0800	J. HALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	8.8	8.4
VAS-35 Pressure	(psig)	10 - 20	30	25	25
VAS-36 Flow Rate	(scfm)	TBD	TBD	8.0	7.8
VAS-36 Pressure	(psig)	10 - 20	30	18	18
VAS-37 Flow Rate	(scfm)	TBD	TBD	10.2	10.2
VAS-37 Pressure	(psig)	10 - 20	30	10	10
VAS-38 Flow Rate	(scfm)	TBD	TBD	6.5	6.6
VAS-38 Pressure	(psig)	10 - 20	30	8	8
VAS-39 Flow Rate	(scfm)	TBD	TBD	10.5	10.3
VAS-39 Pressure	(psig)	10 - 20	30	20	20
VAS-40 Flow Rate	(scfm)	TBD	TBD	8.7	7.9
VAS-40 Pressure	(psig)	10 - 20	30	22	22
VAS-41 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-41 Pressure	(psig)	10 - 20	30		
VAS-42A Flow Rate	(scfm)	TBD	TBD	7.1	7.1
VAS-42A Pressure	(psig)	10 - 20	30	12	12
VAS-43A Flow Rate	(scfm)	TBD	TBD	|	|
VAS-43A Pressure	(psig)	10 - 20	30	|	|
VAS-44A Flow Rate	(scfm)	TBD	TBD	|	|
VAS-44A Pressure	(psig)	10 - 20	30	|	|
VAS-45 Flow Rate	(scfm)	TBD	TBD	9.6	|
VAS-45 Pressure	(psig)	10 - 20	30	22	|
VAS-46 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-46 Pressure	(psig)	10 - 20	30	|	|
VAS-47 Flow Rate	(scfm)	TBD	TBD	8.5	8.5
VAS-47 Pressure	(psig)	10 - 20	30	10	10
VAS-48 Flow Rate	(scfm)	TBD	TBD	8.2	8.5
VAS-48 Pressure	(psig)	10 - 20	30	10	10
VAS-49 Flow Rate	(scfm)	TBD	TBD	8.1	8.2
VAS-49 Pressure	(psig)	10 - 20	30	12	12
VAS-50 Flow Rate	(scfm)	TBD	TBD	6.8	6.6
VAS-50 Pressure	(psig)	10 - 20	30	8	8
VAS-51 Flow Rate	(scfm)	TBD	TBD	7.9	7.8
VAS-51 Pressure	(psig)	10 - 20	30	5	5

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8.1.19/800	T. HALLMAN		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCH803020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	8.7	8.7
VAS-52 Pressure	(psig)	10 - 20	30	10	10
VAS-53 Flow Rate	(scfm)	TBD	TBD	8.0	8.0
VAS-53 Pressure	(psig)	10 - 20	30	8	8
VAS-54 Flow Rate	(scfm)	TBD	TBD	8.8	9.4
VAS-54 Pressure	(psig)	10 - 20	30	10	8
VAS-55 Flow Rate	(scfm)	TBD	TBD	7.3	7.3
VAS-55 Pressure	(psig)	10 - 20	30	10	10
VAS-56 Flow Rate	(scfm)	TBD	TBD	7.5	7.4
VAS-56 Pressure	(psig)	10 - 20	30	0	0
VAS-57 Flow Rate	(scfm)	TBD	TBD	7.1	7.1
VAS-57 Pressure	(psig)	10 - 20	30	10	10
VAS-58 Flow Rate	(scfm)	TBD	TBD	7.9	7.8
VAS-58 Pressure	(psig)	10 - 20	30	10	10
VAS-59 Flow Rate	(scfm)	TBD	TBD	7.9	7.8
VAS-59 Pressure	(psig)	10 - 20	30	10	10
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	13.9	13.9
BCA-01 Pressure	(psig)	0 - 5	5	18	18
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.3	14.3
BCA-02 Pressure	(psig)	0 - 5	5	18	18
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
8/1/19 / 0720	T. HALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020460 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek.	Each visit	~~Yes / No~~	~~Yes / No~~		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
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Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8/7/2019 1345	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	Yes	
Air Compressor 1 Run Time / LOAD	(hours)	NA	NA	18215:26 / 14972:16	
Air Compressor 1 Temp	(F)	60 - 100	110	211 - ambient 91°F Bldg Temp 102°F	
Air Compressor 1 Pressure	(psig)	90 - 110	100	162	
Air Compressor 2 Run Time / LOAD	(hours)	NA	NA	16237:09 / 14829:09	
Air Compressor 2 Temp	(F)	60 - 100	110	204	
Air Compressor 2 Pressure	(psig)	90 - 110	100	102	
Receiver Tank Pressure	(psig)	90 - 110	100	115	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	100	
Manifold Temperature	(F)	60 - 100	110	110	
Manifold Flow Rate	(scfm)	TBD	TBD	1962	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Valve Position	(%)	TBD	TBD	68.9	
HAS-1 Pressure	(psig)	10 - 20	30	25	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	500.1	
HAS-2 Valve Position	(%)	TBD	TBD	40.9	
HAS-2 Pressure	(psig)	10 - 20	30	27	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	263.8	
HAS-3 Valve Position	(%)	TBD	TBD	28.3	
HAS-3 Pressure	(psig)	10 - 20	30	19	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8/7/2019 1345	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-01 Pressure	(psig)	10 - 20	30	21	
VAS-02 Flow Rate	(scfm)	TBD	TBD	0.1	
VAS-02 Pressure	(psig)	10 - 20	30	24	
VAS-03 Flow Rate	(scfm)	TBD	TBD	—	
VAS-03 Pressure	(psig)	10 - 20	30	—	
VAS-04 Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-04 Pressure	(psig)	10 - 20	30	1	
VAS-05 Flow Rate	(scfm)	TBD	TBD	—	
VAS-05 Pressure	(psig)	10 - 20	30		
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD		
VAS-07 Pressure	(psig)	10 - 20	30		
VAS-08 Flow Rate	(scfm)	TBD	TBD		
VAS-08 Pressure	(psig)	10 - 20	30		
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD	7.9	
VAS-11 Pressure	(psig)	10 - 20	30	15	
VAS-12 Flow Rate	(scfm)	TBD	TBD	10.6	
VAS-12 Pressure	(psig)	10 - 20	30	15	
VAS-13 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-13 Pressure	(psig)	10 - 20	30	18	
VAS-14 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-14 Pressure	(psig)	10 - 20	30	13	
VAS-15 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-15 Pressure	(psig)	10 - 20	30	11	
VAS-16 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-16 Pressure	(psig)	10 - 20	30	18	
VAS-17 Flow Rate	(scfm)	TBD	TBD	6.3	
VAS-17 Pressure	(psig)	10 - 20	30	7	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8/7/2019 1345	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-18 Pressure	(psig)	10 - 20	30	1	
VAS-19 Flow Rate	(scfm)	TBD	TBD	6.4	
VAS-19 Pressure	(psig)	10 - 20	30	15	
VAS-20 Flow Rate	(scfm)	TBD	TBD	6.8	
VAS-20 Pressure	(psig)	10 - 20	30	27	
VAS-21 Flow Rate	(scfm)	TBD	TBD	7.5	
VAS-21 Pressure	(psig)	10 - 20	30	24	
VAS-22 Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-22 Pressure	(psig)	10 - 20	30	20	
VAS-23 Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-23 Pressure	(psig)	10 - 20	30	23	
VAS-24 Flow Rate	(scfm)	TBD	TBD	6.6	
VAS-24 Pressure	(psig)	10 - 20	30	22	
VAS-25 Flow Rate	(scfm)	TBD	TBD	7.0	
VAS-25 Pressure	(psig)	10 - 20	30	19	
VAS-26 Flow Rate	(scfm)	TBD	TBD	2.4	
VAS-26 Pressure	(psig)	10 - 20	30	30	
VAS-27 Flow Rate	(scfm)	TBD	TBD	5.8	
VAS-27 Pressure	(psig)	10 - 20	30	24	
VAS-28 Flow Rate	(scfm)	TBD	TBD	9.3	
VAS-28 Pressure	(psig)	10 - 20	30	14	
VAS-29 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-29 Pressure	(psig)	10 - 20	30	13	
VAS-30 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-30 Pressure	(psig)	10 - 20	30	6	
VAS-31 Flow Rate	(scfm)	TBD	TBD	6.6	
VAS-31 Pressure	(psig)	10 - 20	30	30	
VAS-32 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-32 Pressure	(psig)	10 - 20	30	18	
VAS-33 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-33 Pressure	(psig)	10 - 20	30	19	
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.7	
VAS-34 Pressure	(psig)	10 - 20	30	21	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8/7/2019 1345	Scott Shiok	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD		
VAS-41 Pressure	(psig)	10 - 20	30		
VAS-42A Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-42A Pressure	(psig)	10 - 20	30	13	
VAS-43A Flow Rate	(scfm)	TBD	TBD		
VAS-43A Pressure	(psig)	10 - 20	30		
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-45 Pressure	(psig)	10 - 20	30	22	
VAS-46 Flow Rate	(scfm)	TBD	TBD	—	
VAS-46 Pressure	(psig)	10 - 20	30	—	
VAS-47 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-47 Pressure	(psig)	10 - 20	30	8	
VAS-48 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-48 Pressure	(psig)	10 - 20	30	9	
VAS-49 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-49 Pressure	(psig)	10 - 20	30	11	
VAS-50 Flow Rate	(scfm)	TBD	TBD	10.0	
VAS-50 Pressure	(psig)	10 - 20	30	9	
VAS-51 Flow Rate	(scfm)	TBD	TBD	7.5	
VAS-51 Pressure	(psig)	10 - 20	30	8	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8/7/2019 1245	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-52 Pressure	(psig)	10 - 20	30	10	
VAS-53 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-53 Pressure	(psig)	10 - 20	30	5	
VAS-54 Flow Rate	(scfm)	TBD	TBD	7.0	
VAS-54 Pressure	(psig)	10 - 20	30	5	
VAS-55 Flow Rate	(scfm)	TBD	TBD	9.6	
VAS-55 Pressure	(psig)	10 - 20	30	3	
VAS-56 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-56 Pressure	(psig)	10 - 20	30	1	
VAS-57 Flow Rate	(scfm)	TBD	TBD	7.2	
VAS-57 Pressure	(psig)	10 - 20	30	3	
VAS-58 Flow Rate	(scfm)	TBD	TBD	6.4	
VAS-58 Pressure	(psig)	10 - 20	30	4	
VAS-59 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-59 Pressure	(psig)	10 - 20	30	4	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.2	
BCA-01 Pressure	(psig)	0 - 5	5	18	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.5	
BCA-02 Pressure	(psig)	0 - 5	5	18	
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
8/7/2019 1345	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				
Equipment Maintenance	**Frequency**	**Conditions Good?**	**Repaired / Replaced?**	**Scheduled**	**Comment**
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / (No)	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / (No)	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	Yes / (No)	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: Test VAS 29 and VAS 45 solenoids, which both have been identified as sticking open in past. Both functioning properly w/ out issue. Will replace when becomes necessary.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAI	Jhenny Buice/ATL	Lewis Drive, Belton, South Carolina

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8-15-19/0930	TH/CC/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Reko Qwik Pure 350	UIC Permit To Operate SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES *	YES
Air Compressor 1 Run Time	(hours)	NA	NA	18,279:47	16,281:16
Air Compressor 1 TEmp	(F)	60 - 100	110	184	193
Air Compressor 1 Pressure	(psig)	90 - 110	100	104	103
Air Compressor 2 Run Time	(hours)	NA	NA	16,425:48	16,427:16
Air Compressor 2 Temp	(F)	60 - 100	110	181	193
Air Compressor 2 Pressure	(psig)	90 - 110	100	104	103
Receiver Tank Pressure	(psig)	90 - 110	100	118	118
Receiver Tank Temperature	(F)	60 - 100	110	—	—
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	103	104
Manifold Temperature	(F)	60 - 100	110	98	104
Manifold Flow Rate	(scfm)	TBD	TBD	1749	1777
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	524.3	525.9
HAS-1 Valve Position	(%)	TBD	TBD	63.0	65.5
HAS-1 Pressure	(psig)	10 - 20	30	24	24
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	402.0	402.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	401.1	400.1
HAS-2 Valve Position	(%)	TBD	TBD	19.8	20.8
HAS-2 Pressure	(psig)	10 - 20	30	22	22
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	262.1	275.9
HAS-3 Valve Position	(%)	TBD	TBD	27.6	27.4
HAS-3 Pressure	(psig)	10 - 20	30	18	18

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

* ACH1 NOT OPERATING UPON ARRIVAL

Site Name	Site Location	Project Manager	Project Engineer
Lewis Drive	Belton, SC	Bill Waldron/RAI	JHenry Rutce/ATL

Biosparging Operation and Maintenance System Data Log 2 of 5
Lewis Drive, Belton, South Carolina

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8.15.19/0936	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHP03020459 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		5.8
VAS-01 Pressure	(psig)	10 - 20	30		28
VAS-02 Flow Rate	(scfm)	TBD	TBD		0.1
VAS-02 Pressure	(psig)	10 - 20	30		25
VAS-03 Flow Rate	(scfm)	TBD	TBD		7.2
~~VAS-03 Pressure~~	(psig)	10 - 20	30		25
VAS-04 Flow Rate	(scfm)	TBD	TBD		9.8
VAS-04 Pressure	(psig)	10 - 20	30		2
VAS-05 Flow Rate	(scfm)	TBD	TBD		9.2
VAS-05 Pressure	(psig)	10 - 20	30		10
VAS-06 Flow Rate	(scfm)	TBD	TBD		8.2
~~VAS-06 Pressure~~	(psig)	10 - 20	30		10
VAS-07 Flow Rate	(scfm)	TBD	TBD		8.5
VAS-07 Pressure	(psig)	10 - 20	30		10
VAS-08 Flow Rate	(scfm)	TBD	TBD		10.6
VAS-08 Pressure	(psig)	10 - 20	30		20
VAS-09 Flow Rate	(scfm)	TBD	TBD		7.0
~~VAS-09 Pressure~~	(psig)	10 - 20	30		10
VAS-10 Flow Rate	(scfm)	TBD	TBD		6.7
VAS-10 Pressure	(psig)	10 - 20	30		15
VAS-11 Flow Rate	(scfm)	TBD	TBD		5.8
VAS-11 Pressure	(psig)	10 - 20	30		17
VAS-12 Flow Rate	(scfm)	TBD	TBD		8.7
~~VAS-12 Pressure~~	(psig)	10 - 20	30		15
VAS-13 Flow Rate	(scfm)	TBD	TBD	9.9	
VAS-13 Pressure	(psig)	10 - 20	30	20	
VAS-14 Flow Rate	(scfm)	TBD	TBD	9.6	
VAS-14 Pressure	(psig)	10 - 20	30	15	
VAS-15 Flow Rate	(scfm)	TBD	TBD	9.3	
~~VAS-15 Pressure~~	(psig)	10 - 20	30	14	
VAS-16 Flow Rate	(scfm)	TBD	TBD	10.5	
VAS-16 Pressure	(psig)	10 - 20	30	20	
VAS-17 Flow Rate	(scfm)	TBD	TBD	10.9	
VAS-17 Pressure	(psig)	10 - 20	30	12	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	Lewis Drive, Belton, South Carolina

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8.15.19/0936	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-18 Pressure	(psig)	10 - 20	30	0	
VAS-19 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-19 Pressure	(psig)	10 - 20	30	18	
VAS-20 Flow Rate	(scfm)	TBD	TBD	6.2	
VAS-20 Pressure	(psig)	10 - 20	30	30	
VAS-21 Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-21 Pressure	(psig)	10 - 20	30	25	8.0
VAS-22 Flow Rate	(scfm)	TBD	TBD	7.2	24
VAS-22 Pressure	(psig)	10 - 20	30	25	4.3
VAS-23 Flow Rate	(scfm)	TBD	TBD	3.6	25
VAS-23 Pressure	(psig)	10 - 20	30	28	3.7
VAS-24 Flow Rate	(scfm)	TBD	TBD	3.5	25
VAS-24 Pressure	(psig)	10 - 20	30	26	
VAS-25 Flow Rate	(scfm)	TBD	TBD	6.3	
VAS-25 Pressure	(psig)	10 - 20	30	22	
VAS-26 Flow Rate	(scfm)	TBD	TBD	1.6	
VAS-26 Pressure	(psig)	10 - 20	30	29	
VAS-27 Flow Rate	(scfm)	TBD	TBD	5.7	
VAS-27 Pressure	(psig)	10 - 20	30	27	
VAS-28 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-28 Pressure	(psig)	10 - 20	30	18	
VAS-29 Flow Rate	(scfm)	TBD	TBD	9.3	
VAS-29 Pressure	(psig)	10 - 20	30	15	
VAS-30 Flow Rate	(scfm)	TBD	TBD	9.9	
VAS-30 Pressure	(psig)	10 - 20	30	5	
VAS-31 Flow Rate	(scfm)	TBD	TBD	4.2	
VAS-31 Pressure	(psig)	10 - 20	30	30	
VAS-32 Flow Rate	(scfm)	TBD	TBD	6.6	6.1
VAS-32 Pressure	(psig)	10 - 20	30	20	20
VAS-33 Flow Rate	(scfm)	TBD	TBD	5.9	6.1
VAS-33 Pressure	(psig)	10 - 20	30	20	20
VAS-34 Flow Rate	(scfm)	TBD	TBD	5.9	6.7
VAS-34 Pressure	(psig)	10 - 20	30	24	24

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 Lewis Drive, Belton, South Carolina	
Lewis Drive	Belton, SC	Bill Waldron/RAI	JBenny Bupe/ATI		
Date & Time	**O&M Technician #1**	**O&M Technician #2**	**Equipment Type**	**Equipment Model**	**Permits**
8-15-19/0930	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHS03220469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	7.0	8.6
VAS-35 Pressure	(psig)	10 - 20	30	28	28
VAS-36 Flow Rate	(scfm)	TBD	TBD	7.3	9.1
VAS-36 Pressure	(psig)	10 - 20	30	20	18
VAS-37 Flow Rate	(scfm)	TBD	TBD	10.4	11.1
VAS-37 Pressure	(psig)	10 - 20	30	12	10
VAS-38 Flow Rate	(scfm)	TBD	TBD	6.6	6.6
VAS-38 Pressure	(psig)	10 - 20	30	10	8
VAS-39 Flow Rate	(scfm)	TBD	TBD	8.0	9.3
VAS-39 Pressure	(psig)	10 - 20	30	22	20
VAS-40 Flow Rate	(scfm)	TBD	TBD	8.4	10.9
VAS-40 Pressure	(psig)	10 - 20	30	25	22
VAS-41 Flow Rate	(scfm)	TBD	TBD	|	10.1
VAS-41 Pressure	(psig)	10 - 20	30	|	12
VAS-42A Flow Rate	(scfm)	TBD	TBD	8.6	7.8
VAS-42A Pressure	(psig)	10 - 20	30	12	12
VAS-43A Flow Rate	(scfm)	TBD	TBD	|	1.6
VAS-43A Pressure	(psig)	10 - 20	30	|	32
VAS-44A Flow Rate	(scfm)	TBD	TBD	|	0.8
VAS-44A Pressure	(psig)	10 - 20	30	|	29
VAS-45 Flow Rate	(scfm)	TBD	TBD	9.9	10.2
VAS-45 Pressure	(psig)	10 - 20	30	25	25
VAS-46 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-46 Pressure	(psig)	10 - 20	30	|	|
VAS-47 Flow Rate	(scfm)	TBD	TBD	2.0	1.7
VAS-47 Pressure	(psig)	10 - 20	30	4	4
VAS-48 Flow Rate	(scfm)	TBD	TBD	9.5	9.4
VAS-48 Pressure	(psig)	10 - 20	30	10	10
VAS-49 Flow Rate	(scfm)	TBD	TBD	9.0	9.0
VAS-49 Pressure	(psig)	10 - 20	30	12	12
VAS-50 Flow Rate	(scfm)	TBD	TBD	9.0	8.8
VAS-50 Pressure	(psig)	10 - 20	30	10	10
VAS-51 Flow Rate	(scfm)	TBD	TBD	9.6	9.4
VAS-51 Pressure	(psig)	10 - 20	30	10	8

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8.15.19/0430	T. Hall		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	9.6	9.5
VAS-52 Pressure	(psig)	10 - 20	30	12	12
VAS-53 Flow Rate	(scfm)	TBD	TBD	2.4	2.1
VAS-53 Pressure	(psig)	10 - 20	30	6	6
VAS-54 Flow Rate	(scfm)	TBD	TBD	7.9	7.8
VAS-54 Pressure	(psig)	10 - 20	30	6	6
VAS-55 Flow Rate	(scfm)	TBD	TBD	10.3	10.2
VAS-55 Pressure	(psig)	10 - 20	30	10	10
VAS-56 Flow Rate	(scfm)	TBD	TBD	7.9	7.8
VAS-56 Pressure	(psig)	10 - 20	30	0	0
VAS-57 Flow Rate	(scfm)	TBD	TBD	8.0	7.8
VAS-57 Pressure	(psig)	10 - 20	30	5	5
VAS-58 Flow Rate	(scfm)	TBD	TBD	5.3	5.2
VAS-58 Pressure	(psig)	10 - 20	30	8	8
VAS-59 Flow Rate	(scfm)	TBD	TBD	9.0	8.8
VAS-59 Pressure	(psig)	10 - 20	30	10	10
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.7	14.5
BCA-01 Pressure	(psig)	0 - 5	5	18	18
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.8	14.7
BCA-02 Pressure	(psig)	0 - 5	5	20	20
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD	|	|
BRS-01 Pressure	(psig)	10 - 20	30	|	|
BRS-02 Flow Rate	(scfm)	TBD	TBD	|	|
BRS-02 Pressure	(psig)	10 - 20	30	|	|
BRS-03 Flow Rate	(scfm)	TBD	TBD	|	|
BRS-03 Pressure	(psig)	10 - 20	30	|	|

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAI	JBenny Buice/ATI	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
8-15-19 / 0930	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Petro Qwik Pure 350	UIC Permit To Operate- SCHF01070469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek	Each visit	Yes / No	Yes / No		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: AC #1 SHUTDOWN UPON ARRIVAL. BREAKER RESET AND AC #1 RESTARTED @ 0940
VAS-29 STUCK OPEN

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8/19/2019 0830 1350	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	NO - Restart @ 0830	YES
Air Compressor 1 Run Time /LOAD TIME	(hours)	NA	NA	18287:40 / 15044:27	18292:21 / 15048:23
Air Compressor 1 Temp	(F)	60 - 100	110	—	192
Air Compressor 1 Pressure	(psig)	90 - 110	100	—	104
Air Compressor 2 Run Time /LOAD	(hours)	NA	NA	16470:23 / 15062:22	16475:05 / 15066:34
Air Compressor 2 Temp	(F)	60 - 100	110	—	190
Air Compressor 2 Pressure	(psig)	90 - 110	100	—	104
Receiver Tank Pressure	(psig)	90 - 110	100	—	115
Receiver Tank Temperature	(F)	60 - 100	110	—	N/A
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	102	
Manifold Temperature	(F)	60 - 100	110	108	
Manifold Flow Rate	(scfm)	TBD	TBD	1750	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	524.9	
HAS-1 Valve Position	(%)	TBD	TBD	70.8	
HAS-1 Pressure	(psig)	10 - 20	30	28	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	365.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	363.5	
HAS-2 Valve Position	(%)	TBD	TBD	18.5	
HAS-2 Pressure	(psig)	10 - 20	30	18	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	264.5	
HAS-3 Valve Position	(%)	TBD	TBD	29.7	
HAS-3 Pressure	(psig)	10 - 20	30	23	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

- AC#1, down/breaker tripped 8/15 @ 1813
- AC#2, down/breaker tripped 8/17 @ 0658 - see log book for specific details.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8/19/19 1330	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		5.8
VAS-01 Pressure	(psig)	10 - 20	30		21
VAS-02 Flow Rate	(scfm)	TBD	TBD		0.2
VAS-02 Pressure	(psig)	10 - 20	30		21
VAS-03 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-03 Pressure	(psig)	10 - 20	30		20
VAS-04 Flow Rate	(scfm)	TBD	TBD		9.8
VAS-04 Pressure	(psig)	10 - 20	30		1
VAS-05 Flow Rate	(scfm)	TBD	TBD		
VAS-05 Pressure	(psig)	10 - 20	30		
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD		
VAS-07 Pressure	(psig)	10 - 20	30		
VAS-08 Flow Rate	(scfm)	TBD	TBD		
VAS-08 Pressure	(psig)	10 - 20	30		
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-11 Pressure	(psig)	10 - 20	30		16
VAS-12 Flow Rate	(scfm)	TBD	TBD		8.5
VAS-12 Pressure	(psig)	10 - 20	30		12
VAS-13 Flow Rate	(scfm)	TBD	TBD		7.3
VAS-13 Pressure	(psig)	10 - 20	30		17
VAS-14 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-14 Pressure	(psig)	10 - 20	30		12
VAS-15 Flow Rate	(scfm)	TBD	TBD		7.6
VAS-15 Pressure	(psig)	10 - 20	30		12
VAS-16 Flow Rate	(scfm)	TBD	TBD		8.8
VAS-16 Pressure	(psig)	10 - 20	30		18
VAS-17 Flow Rate	(scfm)	TBD	TBD		4.6
VAS-17 Pressure	(psig)	10 - 20	30		6

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8/19/19 1330	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-18 Pressure	(psig)	10 - 20	30		1
VAS-19 Flow Rate	(scfm)	TBD	TBD		7.0
VAS-19 Pressure	(psig)	10 - 20	30		12
VAS-20 Flow Rate	(scfm)	TBD	TBD		11.3
VAS-20 Pressure	(psig)	10 - 20	30		6
VAS-21 Flow Rate	(scfm)	TBD	TBD		7.0
VAS-21 Pressure	(psig)	10 - 20	30		23
VAS-22 Flow Rate	(scfm)	TBD	TBD		8.6
VAS-22 Pressure	(psig)	10 - 20	30		20
VAS-23 Flow Rate	(scfm)	TBD	TBD		7.0
VAS-23 Pressure	(psig)	10 - 20	30		23
VAS-24 Flow Rate	(scfm)	TBD	TBD		4.4
VAS-24 Pressure	(psig)	10 - 20	30		24
VAS-25 Flow Rate	(scfm)	TBD	TBD		4.5
VAS-25 Pressure	(psig)	10 - 20	30		17
VAS-26 Flow Rate	(scfm)	TBD	TBD		2.4
VAS-26 Pressure	(psig)	10 - 20	30		27
VAS-27 Flow Rate	(scfm)	TBD	TBD		5.6
VAS-27 Pressure	(psig)	10 - 20	30		24
VAS-28 Flow Rate	(scfm)	TBD	TBD		7.6
VAS-28 Pressure	(psig)	10 - 20	30		17
VAS-29 Flow Rate	(scfm)	TBD	TBD		9.1
VAS-29 Pressure	(psig)	10 - 20	30		13
VAS-30 Flow Rate	(scfm)	TBD	TBD		8.9
VAS-30 Pressure	(psig)	10 - 20	30		4
VAS-31 Flow Rate	(scfm)	TBD	TBD		5.5
VAS-31 Pressure	(psig)	10 - 20	30		27
VAS-32 Flow Rate	(scfm)	TBD	TBD		6.7
VAS-32 Pressure	(psig)	10 - 20	30		18
VAS-33 Flow Rate	(scfm)	TBD	TBD		5.1
VAS-33 Pressure	(psig)	10 - 20	30		18
VAS-34 Flow Rate	(scfm)	TBD	TBD		6.9
VAS-34 Pressure	(psig)	10 - 20	30		21

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8/19/19 1330	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD		
VAS-41 Pressure	(psig)	10 - 20	30		
VAS-42A Flow Rate	(scfm)	TBD	TBD		10.3
VAS-42A Pressure	(psig)	10 - 20	30		14
VAS-43A Flow Rate	(scfm)	TBD	TBD		—
VAS-43A Pressure	(psig)	10 - 20	30		—
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD		9.8
VAS-45 Pressure	(psig)	10 - 20	30		22
VAS-46 Flow Rate	(scfm)	TBD	TBD		—
VAS-46 Pressure	(psig)	10 - 20	30		—
VAS-47 Flow Rate	(scfm)	TBD	TBD		7.2
VAS-47 Pressure	(psig)	10 - 20	30		11
VAS-48 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-48 Pressure	(psig)	10 - 20	30		8
VAS-49 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-49 Pressure	(psig)	10 - 20	30		11
VAS-50 Flow Rate	(scfm)	TBD	TBD		7.7
VAS-50 Pressure	(psig)	10 - 20	30		9
VAS-51 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-51 Pressure	(psig)	10 - 20	30		5

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8/19/19 1330	Scott Swilley		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-52 Pressure	(psig)	10 - 20	30		10
VAS-53 Flow Rate	(scfm)	TBD	TBD		7.6
VAS-53 Pressure	(psig)	10 - 20	30		4
VAS-54 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-54 Pressure	(psig)	10 - 20	30		5
VAS-55 Flow Rate	(scfm)	TBD	TBD		8.3
VAS-55 Pressure	(psig)	10 - 20	30		2
VAS-56 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-56 Pressure	(psig)	10 - 20	30		1
VAS-57 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-57 Pressure	(psig)	10 - 20	30		2
VAS-58 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-58 Pressure	(psig)	10 - 20	30		3
VAS-59 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-59 Pressure	(psig)	10 - 20	30		2
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD		NOT operating - SW Sampling
BCA-01 Pressure	(psig)	0 - 5	5		
BCA-02 Flow Rate	(scfm)	TBD	TBD		
BCA-02 Pressure	(psig)	0 - 5	5		
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
8/19/2019 1330	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	(Yes) / No	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / (No)	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / (No)	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	Yes / (No)	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:
- cleaned compressor inlet filters
- manually activated auto drain, found ok
- drained inline air filter sumps
- emptied rain gauge and recorded 1.30" in onsite logger

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8.28.19 / 1500	T. HAM		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020459 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	18,509:43	18,512:17
Air Compressor 1 Temp	(F)	60 - 100	110	188	188
Air Compressor 1 Pressure	(psig)	90 - 110	100	104	104
Air Compressor 2 Run Time	(hours)	NA	NA	16,683:27	16,686:01
Air Compressor 2 Temp	(F)	60 - 100	110	187	190
Air Compressor 2 Pressure	(psig)	90 - 110	100	104	104
Receiver Tank Pressure	(psig)	90 - 110	100	116	118
Receiver Tank Temperature	(F)	60 - 100	110	—	—
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	102	103
Manifold Temperature	(F)	60 - 100	110	102	104
Manifold Flow Rate	(scfm)	TBD	TBD	1773	1734
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	526.4	525.3
HAS-1 Valve Position	(%)	TBD	TBD	67.3	67.5
HAS-1 Pressure	(psig)	10 - 20	30	25	25
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	350.0	350.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	349.8	349.4
HAS-2 Valve Position	(%)	TBD	TBD	19.0	19.0
HAS-2 Pressure	(psig)	10 - 20	30	22	22
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	260.0	259.6
HAS-3 Valve Position	(%)	TBD	TBD	27.6	27.3
HAS-3 Pressure	(psig)	10 - 20	30	18	18

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAI	JRenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
08-23-19/1300	T. Hall/GH		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		6.8
VAS-01 Pressure	(psig)	10 - 20	30		22
VAS-02 Flow Rate	(scfm)	TBD	TBD		0.5
VAS-02 Pressure	(psig)	10 - 20	30		30
VAS-03 Flow Rate	(scfm)	TBD	TBD	7.5	7.7
VAS-03 Pressure	(psig)	10 - 20	30	25	22
VAS-04 Flow Rate	(scfm)	TBD	TBD		9.8
VAS-04 Pressure	(psig)	10 - 20	30		10
VAS-05 Flow Rate	(scfm)	TBD	TBD		"
VAS-05 Pressure	(psig)	10 - 20	30		"
VAS-06 Flow Rate	(scfm)	TBD	TBD		"
VAS-06 Pressure	(psig)	10 - 20	30		"
VAS-07 Flow Rate	(scfm)	TBD	TBD		"
VAS-07 Pressure	(psig)	10 - 20	30		"
VAS-08 Flow Rate	(scfm)	TBD	TBD		"
VAS-08 Pressure	(psig)	10 - 20	30		"
VAS-09 Flow Rate	(scfm)	TBD	TBD		"
VAS-09 Pressure	(psig)	10 - 20	30		"
VAS-10 Flow Rate	(scfm)	TBD	TBD		"
VAS-10 Pressure	(psig)	10 - 20	30		"
VAS-11 Flow Rate	(scfm)	TBD	TBD		6.0
VAS-11 Pressure	(psig)	10 - 20	30		18
VAS-12 Flow Rate	(scfm)	TBD	TBD		6.3
VAS-12 Pressure	(psig)	10 - 20	30		12
VAS-13 Flow Rate	(scfm)	TBD	TBD	9.2	7.2
VAS-13 Pressure	(psig)	10 - 20	30	18	18
VAS-14 Flow Rate	(scfm)	TBD	TBD	9.4	"
VAS-14 Pressure	(psig)	10 - 20	30	14	"
VAS-15 Flow Rate	(scfm)	TBD	TBD	8.6	8.4
VAS-15 Pressure	(psig)	10 - 20	30	16	10
VAS-16 Flow Rate	(scfm)	TBD	TBD	9.9	8.8
VAS-16 Pressure	(psig)	10 - 20	30	18	18
VAS-17 Flow Rate	(scfm)	TBD	TBD	9.8	7.3
VAS-17 Pressure	(psig)	10 - 20	30	5	8

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8.28 1940	T. HALL/GW		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE0102469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	8.0	8.0
VAS-18 Pressure	(psig)	10 - 20	30	0	6
VAS-19 Flow Rate	(scfm)	TBD	TBD	6.1	2.6
VAS-19 Pressure	(psig)	10 - 20	30	15	15
VAS-20 Flow Rate	(scfm)	TBD	TBD	10.5	10.6
VAS-20 Pressure	(psig)	10 - 20	30	5	5
VAS-21 Flow Rate	(scfm)	TBD	TBD	8.1	6.6
VAS-21 Pressure	(psig)	10 - 20	30	22	22
VAS-22 Flow Rate	(scfm)	TBD	TBD	9.8	9.8
VAS-22 Pressure	(psig)	10 - 20	30	20	20
VAS-23 Flow Rate	(scfm)	TBD	TBD	9.0	9.0
VAS-23 Pressure	(psig)	10 - 20	30	24	24
VAS-24 Flow Rate	(scfm)	TBD	TBD	7.2	7.3
VAS-24 Pressure	(psig)	10 - 20	30	24	24
VAS-25 Flow Rate	(scfm)	TBD	TBD	10.4	9.3
VAS-25 Pressure	(psig)	10 - 20	30	18	18
VAS-26 Flow Rate	(scfm)	TBD	TBD	3.4	1.3
VAS-26 Pressure	(psig)	10 - 20	30	28	28
VAS-27 Flow Rate	(scfm)	TBD	TBD	6.5	3.4
VAS-27 Pressure	(psig)	10 - 20	30	24	24
VAS-28 Flow Rate	(scfm)	TBD	TBD	9.0	8.9
VAS-28 Pressure	(psig)	10 - 20	30	15	15
VAS-29 Flow Rate	(scfm)	TBD	TBD	9.0	9.1
VAS-29 Pressure	(psig)	10 - 20	30	12	12
VAS-30 Flow Rate	(scfm)	TBD	TBD	9.0	9.1
VAS-30 Pressure	(psig)	10 - 20	30	4	4
VAS-31 Flow Rate	(scfm)	TBD	TBD	9.0	9.0
VAS-31 Pressure	(psig)	10 - 20	30	28	28
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.7	9.6
VAS-32 Pressure	(psig)	10 - 20	30	18	18
VAS-33 Flow Rate	(scfm)	TBD	TBD	8.9	8.8
VAS-33 Pressure	(psig)	10 - 20	30	18	18
VAS-34 Flow Rate	(scfm)	TBD	TBD	10.4	10.3
VAS-34 Pressure	(psig)	10 - 20	30	20	20

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAI	JBenny Bulce/ATI	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8.28.19/1500	T.Hill		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	10.3	
VAS-35 Pressure	(psig)	10 - 20	30	25	
VAS-36 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-36 Pressure	(psig)	10 - 20	30	18	
VAS-37 Flow Rate	(scfm)	TBD	TBD	10.5	
VAS-37 Pressure	(psig)	10 - 20	30	10	
VAS-38 Flow Rate	(scfm)	TBD	TBD	6.5	
VAS-38 Pressure	(psig)	10 - 20	30	8	
VAS-39 Flow Rate	(scfm)	TBD	TBD	10.7	
VAS-39 Pressure	(psig)	10 - 20	30	18	
VAS-40 Flow Rate	(scfm)	TBD	TBD	9.7	
VAS-40 Pressure	(psig)	10 - 20	30	22	
VAS-41 Flow Rate	(scfm)	TBD	TBD	|	
VAS-41 Pressure	(psig)	10 - 20	30	|	|
VAS-42A Flow Rate	(scfm)	TBD	TBD	| 8.1	8.1
VAS-42A Pressure	(psig)	10 - 20	30	~~||||~~ 12	12
VAS-43A Flow Rate	(scfm)	TBD	TBD	~~||||~~	|
VAS-43A Pressure	(psig)	10 - 20	30	|	|
VAS-44A Flow Rate	(scfm)	TBD	TBD	|	|
VAS-44A Pressure	(psig)	10 - 20	30	|	|
VAS-45 Flow Rate	(scfm)	TBD	TBD	11.2	11.3
VAS-45 Pressure	(psig)	10 - 20	30	22	22
VAS-46 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-46 Pressure	(psig)	10 - 20	30	|	|
VAS-47 Flow Rate	(scfm)	TBD	TBD	9.3	9.4
VAS-47 Pressure	(psig)	10 - 20	30	10	10
VAS-48 Flow Rate	(scfm)	TBD	TBD	6.5	7.2
VAS-48 Pressure	(psig)	10 - 20	30	8	8
VAS-49 Flow Rate	(scfm)	TBD	TBD	9.3	9.5
VAS-49 Pressure	(psig)	10 - 20	30	10	10
VAS-50 Flow Rate	(scfm)	TBD	TBD	6.6	6.4
VAS-50 Pressure	(psig)	10 - 20	30	8	8
VAS-51 Flow Rate	(scfm)	TBD	TBD	8.2	7.9
VAS-51 Pressure	(psig)	10 - 20	30	5	5

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
8.28.19/1500	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	8.3	8.7
VAS-52 Pressure	(psig)	10 - 20	30	10	10
VAS-53 Flow Rate	(scfm)	TBD	TBD	5.2	4.9
VAS-53 Pressure	(psig)	10 - 20	30	0	0
VAS-54 Flow Rate	(scfm)	TBD	TBD	5.9	5.8
VAS-54 Pressure	(psig)	10 - 20	30	0	0
VAS-55 Flow Rate	(scfm)	TBD	TBD	8.8	8.8
VAS-55 Pressure	(psig)	10 - 20	30	5	5
VAS-56 Flow Rate	(scfm)	TBD	TBD	8.8	8.8
VAS-56 Pressure	(psig)	10 - 20	30	0	0
VAS-57 Flow Rate	(scfm)	TBD	TBD	9.7	9.8
VAS-57 Pressure	(psig)	10 - 20	30	6	6
VAS-58 Flow Rate	(scfm)	TBD	TBD	8.7	8.7
VAS-58 Pressure	(psig)	10 - 20	30	8	8
VAS-59 Flow Rate	(scfm)	TBD	TBD	8.8	8.8
VAS-59 Pressure	(psig)	10 - 20	30	2	2
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.6	14.7
BCA-01 Pressure	(psig)	0 - 5	5	18	18
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.5	14.6
BCA-02 Pressure	(psig)	0 - 5	5	18	18
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JRenny Bulce/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
8.28.19/1500	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9/3/2019 1650	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	AIR COMPRESSOR	Yes
Air Compressor 1 Run Time /LOAD	(hours)	NA	NA	#1 only —	18652:42/15467:36
Air Compressor 1 Temp	(F)	60 - 100	110	See field book	191
Air Compressor 1 Pressure	(psig)	90 - 110	100		103
Air Compressor 2 Run Time /LOAD	(hours)	NA	NA		16703:25/15293:38
Air Compressor 2 Temp	(F)	60 - 100	110		199
Air Compressor 2 Pressure	(psig)	90 - 110	100		103
Receiver Tank Pressure	(psig)	90 - 110	100		115
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100		110
Manifold Temperature	(F)	60 - 100	110		112
Manifold Flow Rate	(scfm)	TBD	TBD		1665
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD		525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD		526.1
HAS-1 Valve Position	(%)	TBD	TBD		68.8
HAS-1 Pressure	(psig)	10 - 20	30		26
HAS-2 Target Flow Rate	(scfm)	TBD	TBD		365.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD		361.0
HAS-2 Valve Position	(%)	TBD	TBD		19.4
HAS-2 Pressure	(psig)	10 - 20	30		20
HAS-3 Target Flow Rate	(scfm)	TBD	TBD		262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD		259.6
HAS-3 Valve Position	(%)	TBD	TBD		27.6
HAS-3 Pressure	(psig)	10 - 20	30		20

Parts Needed:	
Parts Installed:	BEKO condensate drain filters, Inline Coalescing filters

Notes (include alarms since previous visit):

→ AC#2 shutdown 8/29/19 @ 1610. Breaker tripped. Found portable breaker panel fans down. Outlet GFCI tripped. Reset / Restart & all w/out issue.

→ Air Link onsite. Semi Annual Service.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9/3/2019 1650	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		
VAS-01 Pressure	(psig)	10 - 20	30		
VAS-02 Flow Rate	(scfm)	TBD	TBD		
VAS-02 Pressure	(psig)	10 - 20	30		
VAS-03 Flow Rate	(scfm)	TBD	TBD		
VAS-03 Pressure	(psig)	10 - 20	30		
VAS-04 Flow Rate	(scfm)	TBD	TBD		
VAS-04 Pressure	(psig)	10 - 20	30		
VAS-05 Flow Rate	(scfm)	TBD	TBD		8.5
VAS-05 Pressure	(psig)	10 - 20	30		5
VAS-06 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-06 Pressure	(psig)	10 - 20	30		7
VAS-07 Flow Rate	(scfm)	TBD	TBD		8.6
VAS-07 Pressure	(psig)	10 - 20	30		6
VAS-08 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-08 Pressure	(psig)	10 - 20	30		14
VAS-09 Flow Rate	(scfm)	TBD	TBD		7.0
VAS-09 Pressure	(psig)	10 - 20	30		5
VAS-10 Flow Rate	(scfm)	TBD	TBD		5.2
VAS-10 Pressure	(psig)	10 - 20	30		13
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD		
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD		
VAS-16 Pressure	(psig)	10 - 20	30		
VAS-17 Flow Rate	(scfm)	TBD	TBD		
VAS-17 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9/3/2019 1650	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD		
VAS-20 Pressure	(psig)	10 - 20	30		
VAS-21 Flow Rate	(scfm)	TBD	TBD		
VAS-21 Pressure	(psig)	10 - 20	30		
VAS-22 Flow Rate	(scfm)	TBD	TBD		9.6
VAS-22 Pressure	(psig)	10 - 20	30		19
VAS-23 Flow Rate	(scfm)	TBD	TBD		9.0
VAS-23 Pressure	(psig)	10 - 20	30		22
VAS-24 Flow Rate	(scfm)	TBD	TBD		6.5
VAS-24 Pressure	(psig)	10 - 20	30		22
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD		7.3
VAS-32 Pressure	(psig)	10 - 20	30		17
VAS-33 Flow Rate	(scfm)	TBD	TBD		5.5
VAS-33 Pressure	(psig)	10 - 20	30		18
VAS-34 Flow Rate	(scfm)	TBD	TBD		5.8
VAS-34 Pressure	(psig)	10 - 20	30		22

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9/3/2019 1650	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		6.3
VAS-38 Pressure	(psig)	10 - 20	30		6
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD		9.1
VAS-41 Pressure	(psig)	10 - 20	30		11
VAS-42A Flow Rate	(scfm)	TBD	TBD		6.8
VAS-42A Pressure	(psig)	10 - 20	30		11
VAS-43A Flow Rate	(scfm)	TBD	TBD		1.6
VAS-43A Pressure	(psig)	10 - 20	30		27
VAS-44A Flow Rate	(scfm)	TBD	TBD		2.2
VAS-44A Pressure	(psig)	10 - 20	30		24
VAS-45 Flow Rate	(scfm)	TBD	TBD		10.7
VAS-45 Pressure	(psig)	10 - 20	30		21
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD		7.2
VAS-47 Pressure	(psig)	10 - 20	30		7
VAS-48 Flow Rate	(scfm)	TBD	TBD		6.8
VAS-48 Pressure	(psig)	10 - 20	30		5
VAS-49 Flow Rate	(scfm)	TBD	TBD		7.3
VAS-49 Pressure	(psig)	10 - 20	30		8
VAS-50 Flow Rate	(scfm)	TBD	TBD		7.3
VAS-50 Pressure	(psig)	10 - 20	30		3
VAS-51 Flow Rate	(scfm)	TBD	TBD		7.2
VAS-51 Pressure	(psig)	10 - 20	30		2

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9/3/2019 1650	Scott Sh.	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD		7.1
VAS-52 Pressure	(psig)	10 - 20	30		7
VAS-53 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-53 Pressure	(psig)	10 - 20	30		3
VAS-54 Flow Rate	(scfm)	TBD	TBD		7.5
VAS-54 Pressure	(psig)	10 - 20	30		3
VAS-55 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-55 Pressure	(psig)	10 - 20	30		3
VAS-56 Flow Rate	(scfm)	TBD	TBD		6.8
VAS-56 Pressure	(psig)	10 - 20	30		0
VAS-57 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-57 Pressure	(psig)	10 - 20	30		2
VAS-58 Flow Rate	(scfm)	TBD	TBD		7.4
VAS-58 Pressure	(psig)	10 - 20	30		3
VAS-59 Flow Rate	(scfm)	TBD	TBD		8.9
VAS-59 Pressure	(psig)	10 - 20	30		2
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD		14.9
BCA-01 Pressure	(psig)	0 - 5	5		17
BCA-02 Flow Rate	(scfm)	TBD	TBD		14.8
BCA-02 Pressure	(psig)	0 - 5	5		17
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	**Biosparging Operation and Maintenance Maintenance Log** *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
9/3/2019 1650	Scott Swira	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	**Yes** / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / **No**	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	**Yes** / No	Yes / No		
...	...				
...	...				
Equipment Maintenance	**Frequency**	**Conditions Good?**	**Repaired / Replaced?**	**Scheduled**	**Comment**
Inspect receiver tank and discharge lines.	Monthly	**Yes** / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	**Yes** / No	**Yes** / No	New Filters	Beko OWS and inline coalescing
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	**Yes** / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	**Yes** / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / **No**	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / **No**	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / **No**	Yes / No		
Calibrate EAD	Annually	**Yes** / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: → set both compressor to 270 Amp lineside at max load.

→ clean air intake filters

→ clean building

→ change out OWS filters and in-line coalescing filters, Airite removed for disposal

→ Flows adjusted to intended targets, if able, prior to departing site.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9/16/2019 1330	SCOTT SMITH		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	yes, AC#1 only, wash't AC#2	
Air Compressor 1 Run Time /LOAD	(hours)	NA	NA	1887:36 / 15572:02	
Air Compressor 1 Temp	(F)	60 - 100	110	197	
Air Compressor 1 Pressure	(psig)	90 - 110	100	101	
Air Compressor 2 Run Time /LOAD	(hours)	NA	NA	16743:17 / 15333:08	
Air Compressor 2 Temp	(F)	60 - 100	110	197	
Air Compressor 2 Pressure	(psig)	90 - 110	100	101	
Receiver Tank Pressure	(psig)	90 - 110	100	115	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	102	
Manifold Temperature	(F)	60 - 100	110	108	
Manifold Flow Rate	(scfm)	TBD	TBD	1766	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	523.6	
HAS-1 Valve Position	(%)	TBD	TBD	69.8	
HAS-1 Pressure	(psig)	10 - 20	30	26	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	360.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	362.2	
HAS-2 Valve Position	(%)	TBD	TBD	20.0	
HAS-2 Pressure	(psig)	10 - 20	30	23	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	262.8	
HAS-3 Valve Position	(%)	TBD	TBD	27.1	
HAS-3 Pressure	(psig)	10 - 20	30	17	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

- ACT2 ran fail shutdown occurred 9/5/19 @ 0401 AM. Breaker reset, ACT2 restarted at 0900 Today.
- adjusted all vertical flow rates to targets following data collection and made slight adjustment of HAS1 from 525.0 SCFM to 515.0 SCFM

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9/10/2019 1330	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-01 Pressure	(psig)	10 - 20	30	22	
VAS-02 Flow Rate	(scfm)	TBD	TBD	0.7	
VAS-02 Pressure	(psig)	10 - 20	30	32	
VAS-03 Flow Rate	(scfm)	TBD	TBD	7.2	
VAS-03 Pressure	(psig)	10 - 20	30	23	
VAS-04 Flow Rate	(scfm)	TBD	TBD	9.7	
VAS-04 Pressure	(psig)	10 - 20	30	1	
VAS-05 Flow Rate	(scfm)	TBD	TBD		
VAS-05 Pressure	(psig)	10 - 20	30		
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD		
VAS-07 Pressure	(psig)	10 - 20	30		
VAS-08 Flow Rate	(scfm)	TBD	TBD		
VAS-08 Pressure	(psig)	10 - 20	30		
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD	5.2	
VAS-11 Pressure	(psig)	10 - 20	30	17	
VAS-12 Flow Rate	(scfm)	TBD	TBD	6.7	
VAS-12 Pressure	(psig)	10 - 20	30	11	
VAS-13 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-13 Pressure	(psig)	10 - 20	30	17	
VAS-14 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-14 Pressure	(psig)	10 - 20	30	13	
VAS-15 Flow Rate	(scfm)	TBD	TBD	9.3	
VAS-15 Pressure	(psig)	10 - 20	30	7	
VAS-16 Flow Rate	(scfm)	TBD	TBD	10.5	
VAS-16 Pressure	(psig)	10 - 20	30	17	
VAS-17 Flow Rate	(scfm)	TBD	TBD	6.2	
VAS-17 Pressure	(psig)	10 - 20	30	5	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9/10/2019 1330	Scott Smida	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-18 Pressure	(psig)	10 - 20	30	1	
VAS-19 Flow Rate	(scfm)	TBD	TBD	7.4	
VAS-19 Pressure	(psig)	10 - 20	30	13	
VAS-20 Flow Rate	(scfm)	TBD	TBD	10.4	
VAS-20 Pressure	(psig)	10 - 20	30	6	
VAS-21 Flow Rate	(scfm)	TBD	TBD	7.9	
VAS-21 Pressure	(psig)	10 - 20	30	23	
VAS-22 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-22 Pressure	(psig)	10 - 20	30	20	
VAS-23 Flow Rate	(scfm)	TBD	TBD	10.0	
VAS-23 Pressure	(psig)	10 - 20	30	23	
VAS-24 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-24 Pressure	(psig)	10 - 20	30	22	
VAS-25 Flow Rate	(scfm)	TBD	TBD	13.2	
VAS-25 Pressure	(psig)	10 - 20	30	14	
VAS-26 Flow Rate	(scfm)	TBD	TBD	2.7	
VAS-26 Pressure	(psig)	10 - 20	30	28	
VAS-27 Flow Rate	(scfm)	TBD	TBD	4.5	
VAS-27 Pressure	(psig)	10 - 20	30	26	
VAS-28 Flow Rate	(scfm)	TBD	TBD	9.3	
VAS-28 Pressure	(psig)	10 - 20	30	14	
VAS-29 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-29 Pressure	(psig)	10 - 20	30	13	
VAS-30 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-30 Pressure	(psig)	10 - 20	30	4	
VAS-31 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-31 Pressure	(psig)	10 - 20	30	27	
VAS-32 Flow Rate	(scfm)	TBD	TBD	10.0	
VAS-32 Pressure	(psig)	10 - 20	30	17	
VAS-33 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-33 Pressure	(psig)	10 - 20	30	17	
VAS-34 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-34 Pressure	(psig)	10 - 20	30	21	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9/10/2019 1336	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD		
VAS-41 Pressure	(psig)	10 - 20	30		
VAS-42A Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-42A Pressure	(psig)	10 - 20	30	11	
VAS-43A Flow Rate	(scfm)	TBD	TBD		
VAS-43A Pressure	(psig)	10 - 20	30		
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-45 Pressure	(psig)	10 - 20	30	19	
VAS-46 Flow Rate	(scfm)	TBD	TBD	—	
VAS-46 Pressure	(psig)	10 - 20	30	—	
VAS-47 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-47 Pressure	(psig)	10 - 20	30	8	
VAS-48 Flow Rate	(scfm)	TBD	TBD	7.0	
VAS-48 Pressure	(psig)	10 - 20	30	7	
VAS-49 Flow Rate	(scfm)	TBD	TBD	8.9	
VAS-49 Pressure	(psig)	10 - 20	30	11	
VAS-50 Flow Rate	(scfm)	TBD	TBD	6.8	
VAS-50 Pressure	(psig)	10 - 20	30	6	
VAS-51 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-51 Pressure	(psig)	10 - 20	30	5	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9/10/2019 1330	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	7.5	
VAS-52 Pressure	(psig)	10 - 20	30	8	
VAS-53 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-53 Pressure	(psig)	10 - 20	30	5	
VAS-54 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-54 Pressure	(psig)	10 - 20	30	5	
VAS-55 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-55 Pressure	(psig)	10 - 20	30	3	
VAS-56 Flow Rate	(scfm)	TBD	TBD	7.9	
VAS-56 Pressure	(psig)	10 - 20	30	0	
VAS-57 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-57 Pressure	(psig)	10 - 20	30	2	
VAS-58 Flow Rate	(scfm)	TBD	TBD	7.9	
VAS-58 Pressure	(psig)	10 - 20	30	3	
VAS-59 Flow Rate	(scfm)	TBD	TBD	9.9	
VAS-59 Pressure	(psig)	10 - 20	30	2	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.4	
BCA-01 Pressure	(psig)	0 - 5	5	18	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.6	
BCA-02 Pressure	(psig)	0 - 5	5	18	
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
9/10/2019 1331	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				
Equipment Maintenance	**Frequency**	**Conditions Good?**	**Repaired / Replaced?**	**Scheduled**	**Comment**
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / (No)	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / (No)	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / (No)	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	Yes / (No)	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9-19-19/1000	T. Hyatt/GW		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA		YES
Air Compressor 1 Run Time	(hours)	NA	NA		19,053:58
Air Compressor 1 Temp	(F)	60 - 100	110		182
Air Compressor 1 Pressure	(psig)	90 - 110	100		111
Air Compressor 2 Run Time	(hours)	NA	NA		16,911:35
Air Compressor 2 Temp	(F)	60 - 100	110		188
Air Compressor 2 Pressure	(psig)	90 - 110	100		98
Receiver Tank Pressure	(psig)	90 - 110	100		120
Receiver Tank Temperature	(F)	60 - 100	110		—
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100		100
Manifold Temperature	(F)	60 - 100	110		88
Manifold Flow Rate	(scfm)	TBD	TBD		1355
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD		400
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD		397.9
HAS-1 Valve Position	(%)	TBD	TBD		57.0
HAS-1 Pressure	(psig)	10 - 20	30		24
HAS-2 Target Flow Rate	(scfm)	TBD	TBD		250
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD		252.9
HAS-2 Valve Position	(%)	TBD	TBD		12.8
HAS-2 Pressure	(psig)	10 - 20	30		20
HAS-3 Target Flow Rate	(scfm)	TBD	TBD		225.0
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD		202.0
HAS-3 Valve Position	(%)	TBD	TBD		24.9
HAS-3 Pressure	(psig)	10 - 20	30		17

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

AC #2 BREAKER TRIPPED @ 1859 ON 9/17. RESET AND RESTARTED @ 1305 ON 9/18

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulen/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9-19-19/1500	T. Hall/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		9.6
VAS-01 Pressure	(psig)	10 - 20	30		22
VAS-02 Flow Rate	(scfm)	TBD	TBD		0.5
VAS-02 Pressure	(psig)	10 - 20	30		34
VAS-03 Flow Rate	(scfm)	TBD	TBD		7.7
VAS-03 Pressure	(psig)	10 - 20	30		25
VAS-04 Flow Rate	(scfm)	TBD	TBD		12.4
VAS-04 Pressure	(psig)	10 - 20	30		4
VAS-05 Flow Rate	(scfm)	TBD	TBD		4.0
VAS-05 Pressure	(psig)	10 - 20	30		8
VAS-06 Flow Rate	(scfm)	TBD	TBD		8.3
VAS-06 Pressure	(psig)	10 - 20	30		10
VAS-07 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-07 Pressure	(psig)	10 - 20	30		10
VAS-08 Flow Rate	(scfm)	TBD	TBD		9.6
VAS-08 Pressure	(psig)	10 - 20	30		12
VAS-09 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-09 Pressure	(psig)	10 - 20	30		8
VAS-10 Flow Rate	(scfm)	TBD	TBD		5.9
VAS-10 Pressure	(psig)	10 - 20	30		15
VAS-11 Flow Rate	(scfm)	TBD	TBD		6.2
VAS-11 Pressure	(psig)	10 - 20	30		20
VAS-12 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-12 Pressure	(psig)	10 - 20	30		13
VAS-13 Flow Rate	(scfm)	TBD	TBD		
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD		
VAS-16 Pressure	(psig)	10 - 20	30		
VAS-17 Flow Rate	(scfm)	TBD	TBD		
VAS-17 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9-19-19/1600	T. Hooker		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD		
VAS-20 Pressure	(psig)	10 - 20	30		
VAS-21 Flow Rate	(scfm)	TBD	TBD		
VAS-21 Pressure	(psig)	10 - 20	30		
VAS-22 Flow Rate	(scfm)	TBD	TBD		8.5
VAS-22 Pressure	(psig)	10 - 20	30		20
VAS-23 Flow Rate	(scfm)	TBD	TBD		F.3
VAS-23 Pressure	(psig)	10 - 20	30		22
VAS-24 Flow Rate	(scfm)	TBD	TBD		1.1
VAS-24 Pressure	(psig)	10 - 20	30		20
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD		
VAS-32 Pressure	(psig)	10 - 20	30		
VAS-33 Flow Rate	(scfm)	TBD	TBD		
VAS-33 Pressure	(psig)	10 - 20	30		
VAS-34 Flow Rate	(scfm)	TBD	TBD		
VAS-34 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*	
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL		
Date & Time	**O&M Technician #1**	**O&M Technician #2**	**Equipment Type**	**Equipment Model**	**Permits**
9-19-19/16:00	[illegible]		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD		9.4
VAS-41 Pressure	(psig)	10 - 20	30		12
VAS-42A Flow Rate	(scfm)	TBD	TBD		7.9
VAS-42A Pressure	(psig)	10 - 20	30		12
VAS-43A Flow Rate	(scfm)	TBD	TBD		3.0
VAS-43A Pressure	(psig)	10 - 20	30		30
VAS-44A Flow Rate	(scfm)	TBD	TBD		2.5
VAS-44A Pressure	(psig)	10 - 20	30		28
VAS-45 Flow Rate	(scfm)	TBD	TBD		9.2
VAS-45 Pressure	(psig)	10 - 20	30		20
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-47 Pressure	(psig)	10 - 20	30		8
VAS-48 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-48 Pressure	(psig)	10 - 20	30		10
VAS-49 Flow Rate	(scfm)	TBD	TBD		8.6
VAS-49 Pressure	(psig)	10 - 20	30		10
VAS-50 Flow Rate	(scfm)	TBD	TBD		7.6
VAS-50 Pressure	(psig)	10 - 20	30		10
VAS-51 Flow Rate	(scfm)	TBD	TBD		8.3
VAS-51 Pressure	(psig)	10 - 20	30		8

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Bulce/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9-19-19/1600	T. Hall/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCME03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-S2 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-S2 Pressure	(psig)	10 - 20	30		10
VAS-S3 Flow Rate	(scfm)	TBD	TBD		8.3
VAS-S3 Pressure	(psig)	10 - 20	30		5
VAS-S4 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-S4 Pressure	(psig)	10 - 20	30		5
VAS-S5 Flow Rate	(scfm)	TBD	TBD		9.7
VAS-S5 Pressure	(psig)	10 - 20	30		7
VAS-S6 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-S6 Pressure	(psig)	10 - 20	30		0
VAS-S7 Flow Rate	(scfm)	TBD	TBD		9.0
VAS-S7 Pressure	(psig)	10 - 20	30		8
VAS-S8 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-S8 Pressure	(psig)	10 - 20	30		8
VAS-S9 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-S9 Pressure	(psig)	10 - 20	30		2
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD		14.8
BCA-01 Pressure	(psig)	0 - 5	5		18
BCA-02 Flow Rate	(scfm)	TBD	TBD		14.8
BCA-02 Pressure	(psig)	0 - 5	5		18
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintanance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buka/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
9-19-19/1600	T. HAW/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
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Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / (No)		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / (No)		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / (No)		
Coordinate with Airtte to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: FLOW DECREASED @ VAS-24 TO 3SCFM B/C OF DAYLIGHTING AT RW-14. WATER BUBBLING AROUND WELL PAD. FILLED HOLE WITH GRAVEL.
BCA-01 + BCA-02 DOWN FROM 9/17@ 1600 TO 9/18@ 1800

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9/25/2019 1045	SCOTT SMITH	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	yes - AC#1 ONLY	
Air Compressor 1 Run Time / LOAD	(hours)	NA	NA	19174:47 / 1593:11	
Air Compressor 1 Temp	(F)	60 - 100	110	187	
Air Compressor 1 Pressure	(psig)	90 - 110	100	96	
Air Compressor 2 Run Time / LOAD	(hours)	NA	NA	16946:21 / 1552:47	
Air Compressor 2 Temp	(F)	60 - 100	110	— Not Operating	
Air Compressor 2 Pressure	(psig)	90 - 110	100	— Not Operating	
Receiver Tank Pressure	(psig)	90 - 110	100	110	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	95	
Manifold Temperature	(F)	60 - 100	110	90	
Manifold Flow Rate	(scfm)	TBD	TBD	1056	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	250.0 - reduced	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	251.1	
HAS-1 Valve Position	(%)	TBD	TBD	49.2	
HAS-1 Pressure	(psig)	10 - 20	30	16	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	180.0 - reduced	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	192.5	
HAS-2 Valve Position	(%)	TBD	TBD	9.5	
HAS-2 Pressure	(psig)	10 - 20	30	15	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	150.0 - reduced	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	142.2	
HAS-3 Valve Position	(%)	TBD	TBD	21.0	
HAS-3 Pressure	(psig)	10 - 20	30	14	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

- AC#2 run fail, 9/21/19 @ 0236 AM. Will leave down, breaker replacement is being scheduled
- adjust all well flows that can be adjusted to targets if they have drifted.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9/25/2019 1045	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		
VAS-01 Pressure	(psig)	10 - 20	30		
VAS-02 Flow Rate	(scfm)	TBD	TBD		
VAS-02 Pressure	(psig)	10 - 20	30		
VAS-03 Flow Rate	(scfm)	TBD	TBD		
VAS-03 Pressure	(psig)	10 - 20	30		
VAS-04 Flow Rate	(scfm)	TBD	TBD		
VAS-04 Pressure	(psig)	10 - 20	30		
VAS-05 Flow Rate	(scfm)	TBD	TBD		
VAS-05 Pressure	(psig)	10 - 20	30		
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD		
VAS-07 Pressure	(psig)	10 - 20	30		
VAS-08 Flow Rate	(scfm)	TBD	TBD		
VAS-08 Pressure	(psig)	10 - 20	30		
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-13 Pressure	(psig)	10 - 20	30	16	
VAS-14 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-14 Pressure	(psig)	10 - 20	30	11	
VAS-15 Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-15 Pressure	(psig)	10 - 20	30	6	
VAS-16 Flow Rate	(scfm)	TBD	TBD	8.9	
VAS-16 Pressure	(psig)	10 - 20	30	15	
VAS-17 Flow Rate	(scfm)	TBD	TBD	7.0	
VAS-17 Pressure	(psig)	10 - 20	30	8	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9/25/2019 1045	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-18 Pressure	(psig)	10 - 20	30	1	
VAS-19 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-19 Pressure	(psig)	10 - 20	30	14	
VAS-20 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-20 Pressure	(psig)	10 - 20	30	4	
VAS-21 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-21 Pressure	(psig)	10 - 20	30	22	
VAS-22 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-22 Pressure	(psig)	10 - 20	30	19	
VAS-23 Flow Rate	(scfm)	TBD	TBD	7.3	
VAS-23 Pressure	(psig)	10 - 20	30	22	
VAS-24 Flow Rate	(scfm)	TBD	TBD	3.4	
VAS-24 Pressure	(psig)	10 - 20	30	22	
VAS-25 Flow Rate	(scfm)	TBD	TBD	7.6	
VAS-25 Pressure	(psig)	10 - 20	30	14	
VAS-26 Flow Rate	(scfm)	TBD	TBD	3.6	
VAS-26 Pressure	(psig)	10 - 20	30	28	
VAS-27 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-27 Pressure	(psig)	10 - 20	30	23	
VAS-28 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-28 Pressure	(psig)	10 - 20	30	15	
VAS-29 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-29 Pressure	(psig)	10 - 20	30	14	
VAS-30 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-30 Pressure	(psig)	10 - 20	30	6	
VAS-31 Flow Rate	(scfm)	TBD	TBD	3.0	
VAS-31 Pressure	(psig)	10 - 20	30	30	
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-32 Pressure	(psig)	10 - 20	30	17	
VAS-33 Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-33 Pressure	(psig)	10 - 20	30	17	
VAS-34 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-34 Pressure	(psig)	10 - 20	30	19	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9/25/2019 1045	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	9.9	
VAS-35 Pressure	(psig)	10 - 20	30	24	
VAS-36 Flow Rate	(scfm)	TBD	TBD	8.9	
VAS-36 Pressure	(psig)	10 - 20	30	17	
VAS-37 Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-37 Pressure	(psig)	10 - 20	30	7	
VAS-38 Flow Rate	(scfm)	TBD	TBD	7.0	
VAS-38 Pressure	(psig)	10 - 20	30	7	
VAS-39 Flow Rate	(scfm)	TBD	TBD	11.6	
VAS-39 Pressure	(psig)	10 - 20	30	17	
VAS-40 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-40 Pressure	(psig)	10 - 20	30	21	
VAS-41 Flow Rate	(scfm)	TBD	TBD	—	
VAS-41 Pressure	(psig)	10 - 20	30	—	
VAS-42A Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-42A Pressure	(psig)	10 - 20	30	12	
VAS-43A Flow Rate	(scfm)	TBD	TBD		
VAS-43A Pressure	(psig)	10 - 20	30		
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-45 Pressure	(psig)	10 - 20	30	19	
VAS-46 Flow Rate	(scfm)	TBD	TBD	—	
VAS-46 Pressure	(psig)	10 - 20	30	—	
VAS-47 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-47 Pressure	(psig)	10 - 20	30	8	
VAS-48 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-48 Pressure	(psig)	10 - 20	30	9	
VAS-49 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-49 Pressure	(psig)	10 - 20	30	11	
VAS-50 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-50 Pressure	(psig)	10 - 20	30	10	
VAS-51 Flow Rate	(scfm)	TBD	TBD	7.1	
VAS-51 Pressure	(psig)	10 - 20	30	6	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
9/25/2019 1045	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	5.3	
VAS-52 Pressure	(psig)	10 - 20	30	6	
VAS-53 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-53 Pressure	(psig)	10 - 20	30	6	
VAS-54 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-54 Pressure	(psig)	10 - 20	30	6	
VAS-55 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-55 Pressure	(psig)	10 - 20	30	3	
VAS-56 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-56 Pressure	(psig)	10 - 20	30	0	
VAS-57 Flow Rate	(scfm)	TBD	TBD	9.3	
VAS-57 Pressure	(psig)	10 - 20	30	3	
VAS-58 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-58 Pressure	(psig)	10 - 20	30	3	
VAS-59 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-59 Pressure	(psig)	10 - 20	30	2	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.1	
BCA-01 Pressure	(psig)	0 - 5	5	18	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.3	
BCA-02 Pressure	(psig)	0 - 5	5	18	
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
9/25/2019 1045	SITE SHOP	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No	not performed	
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / (No)	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / (No)	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	Yes / (No)	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10/2/2019 1000 1420	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	yes	yes
Air Compressor 1 Run Time LOAD	(hours)	NA	NA	19342:03 / 16080:27	19342:20 / 16680:43
Air Compressor 1 Temp	(F)	60 - 100	110	198	—
Air Compressor 1 Pressure	(psig)	90 - 110	100	98	—
Air Compressor 2 Run Time	(hours)	NA	NA	16946:27 / 15521:52	16950:15 / 15525:41
Air Compressor 2 Temp	(F)	60 - 100	110	—	215
Air Compressor 2 Pressure	(psig)	90 - 110	100	—	96
Receiver Tank Pressure	(psig)	90 - 110	100	110	110
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	98	96
Manifold Temperature	(F)	60 - 100	110	106	110
Manifold Flow Rate	(scfm)	TBD	TBD	1038	1051
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	250.0	not collected
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	248.6	
HAS-1 Valve Position	(%)	TBD	TBD	49.5	
HAS-1 Pressure	(psig)	10 - 20	30	17	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	180.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	179.1	
HAS-2 Valve Position	(%)	TBD	TBD	10.2	
HAS-2 Pressure	(psig)	10 - 20	30	16	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	150.0	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	138.7	
HAS-3 Valve Position	(%)	TBD	TBD	20.5	
HAS-3 Pressure	(psig)	10 - 20	30	13	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10/2/2019 1000	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-01 Pressure	(psig)	10 - 20	30	Not Operating	
VAS-02 Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-02 Pressure	(psig)	10 - 20	30	Not Operating	
VAS-03 Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-03 Pressure	(psig)	10 - 20	30	Not Operating	
VAS-04 Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-04 Pressure	(psig)	10 - 20	30	Not Operating	
VAS-05 Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-05 Pressure	(psig)	10 - 20	30	Not Operating	
VAS-06 Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-06 Pressure	(psig)	10 - 20	30	Not Operating	
VAS-07 Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-07 Pressure	(psig)	10 - 20	30	Not Operating	
VAS-08 Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-08 Pressure	(psig)	10 - 20	30	Not Operating	
VAS-09 Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-09 Pressure	(psig)	10 - 20	30	Not Operating	
VAS-10 Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-10 Pressure	(psig)	10 - 20	30	Not Operating	
VAS-11 Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-11 Pressure	(psig)	10 - 20	30	Not Operating	
VAS-12 Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-12 Pressure	(psig)	10 - 20	30	Not Operating	
VAS-13 Flow Rate	(scfm)	TBD	TBD	7.3	
VAS-13 Pressure	(psig)	10 - 20	30	15	
VAS-14 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-14 Pressure	(psig)	10 - 20	30	10	
VAS-15 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-15 Pressure	(psig)	10 - 20	30	6	
VAS-16 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-16 Pressure	(psig)	10 - 20	30	14	
VAS-17 Flow Rate	(scfm)	TBD	TBD	5.5	
VAS-17 Pressure	(psig)	10 - 20	30	8	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10/2/2019 1000	Scott Snider		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-18 Pressure	(psig)	10 - 20	30	1	
VAS-19 Flow Rate	(scfm)	TBD	TBD	7.2	
VAS-19 Pressure	(psig)	10 - 20	30	16	
VAS-20 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-20 Pressure	(psig)	10 - 20	30	3	
VAS-21 Flow Rate	(scfm)	TBD	TBD	6.9	
VAS-21 Pressure	(psig)	10 - 20	30	23	
VAS-22 Flow Rate	(scfm)	TBD	TBD	6.9	
VAS-22 Pressure	(psig)	10 - 20	30	20	
VAS-23 Flow Rate	(scfm)	TBD	TBD	7.1	
VAS-23 Pressure	(psig)	10 - 20	30	22	
VAS-24 Flow Rate	(scfm)	TBD	TBD	3.4	
VAS-24 Pressure	(psig)	10 - 20	30	22	
VAS-25 Flow Rate	(scfm)	TBD	TBD	6.1	
VAS-25 Pressure	(psig)	10 - 20	30	14	
VAS-26 Flow Rate	(scfm)	TBD	TBD	3.2	
VAS-26 Pressure	(psig)	10 - 20	30	29	
VAS-27 Flow Rate	(scfm)	TBD	TBD	6.4	
VAS-27 Pressure	(psig)	10 - 20	30	24	
VAS-28 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-28 Pressure	(psig)	10 - 20	30	14	
VAS-29 Flow Rate	(scfm)	TBD	TBD	7.2	
VAS-29 Pressure	(psig)	10 - 20	30	13	
VAS-30 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-30 Pressure	(psig)	10 - 20	30	4	
VAS-31 Flow Rate	(scfm)	TBD	TBD	2.9	
VAS-31 Pressure	(psig)	10 - 20	30	31	
VAS-32 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-32 Pressure	(psig)	10 - 20	30	17	
VAS-33 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-33 Pressure	(psig)	10 - 20	30	18	
VAS-34 Flow Rate	(scfm)	TBD	TBD	7.6	
VAS-34 Pressure	(psig)	10 - 20	30	19	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10/2/2019 1000	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	8.9	
VAS-35 Pressure	(psig)	10 - 20	30	27	
VAS-36 Flow Rate	(scfm)	TBD	TBD	6.2	
VAS-36 Pressure	(psig)	10 - 20	30	20	
VAS-37 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-37 Pressure	(psig)	10 - 20	30	8	
VAS-38 Flow Rate	(scfm)	TBD	TBD	6.2	
VAS-38 Pressure	(psig)	10 - 20	30	8	
VAS-39 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-39 Pressure	(psig)	10 - 20	30	20	
VAS-40 Flow Rate	(scfm)	TBD	TBD	5.7	
VAS-40 Pressure	(psig)	10 - 20	30	22	
VAS-41 Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-41 Pressure	(psig)	10 - 20	30	Not Operating	
VAS-42A Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-42A Pressure	(psig)	10 - 20	30	12	
VAS-43A Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-43A Pressure	(psig)	10 - 20	30	Not Operating	
VAS-44A Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-44A Pressure	(psig)	10 - 20	30	Not Operating	
VAS-45 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-45 Pressure	(psig)	10 - 20	30	19	
VAS-46 Flow Rate	(scfm)	TBD	TBD	Not Operating	
VAS-46 Pressure	(psig)	10 - 20	30	Not Operating	
VAS-47 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-47 Pressure	(psig)	10 - 20	30	7	
VAS-48 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-48 Pressure	(psig)	10 - 20	30	9	
VAS-49 Flow Rate	(scfm)	TBD	TBD	7.9	
VAS-49 Pressure	(psig)	10 - 20	30	10	
VAS-50 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-50 Pressure	(psig)	10 - 20	30	9	
VAS-51 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-51 Pressure	(psig)	10 - 20	30	6	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10/2/2019 1000	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	7.9	
VAS-52 Pressure	(psig)	10 - 20	30	9	
VAS-53 Flow Rate	(scfm)	TBD	TBD	7.9	
VAS-53 Pressure	(psig)	10 - 20	30	5	
VAS-54 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-54 Pressure	(psig)	10 - 20	30	5	
VAS-55 Flow Rate	(scfm)	TBD	TBD	7.9	
VAS-55 Pressure	(psig)	10 - 20	30	3	
VAS-56 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-56 Pressure	(psig)	10 - 20	30	1	
VAS-57 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-57 Pressure	(psig)	10 - 20	30	2	
VAS-58 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-58 Pressure	(psig)	10 - 20	30	2	
VAS-59 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-59 Pressure	(psig)	10 - 20	30	2	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	13.7	
BCA-01 Pressure	(psig)	0 - 5	5	18	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.4	
BCA-02 Pressure	(psig)	0 - 5	5	19	
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
10/2/2019 1000	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				
Equipment Maintenance	**Frequency**	**Conditions Good?**	**Repaired / Replaced?**	**Scheduled**	**Comment**
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / (No)	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / (No)	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	Yes / (No)	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: → record 0" rainfall in stormwater permit book
→ re-attach oil reservoir heating element on AC#1

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10/8/2019 1445	Scott Smith	✓	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	Yes	
Air Compressor 1 Run Time / LOAD	(hours)	NA	NA	19467:22 / 16 205:20	
Air Compressor 1 Temp	(F)	60 - 100	110	184	
Air Compressor 1 Pressure	(psig)	90 - 110	100	101	
Air Compressor 2 Run Time	(hours)	NA	NA	16963:38/15538:41	
Air Compressor 2 Temp	(F)	60 - 100	110	186	
Air Compressor 2 Pressure	(psig)	90 - 110	100	100	
Receiver Tank Pressure	(psig)	90 - 110	100	115	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	102	
Manifold Temperature	(F)	60 - 100	110	90	
Manifold Flow Rate	(scfm)	TBD	TBD	1871	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	523.1	
HAS-1 Valve Position	(%)	TBD	TBD	67.5	
HAS-1 Pressure	(psig)	10 - 20	30	27	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	498.2	
HAS-2 Valve Position	(%)	TBD	TBD	88.7	
HAS-2 Pressure	(psig)	10 - 20	30	30	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	264.1	
HAS-3 Valve Position	(%)	TBD	TBD	25.2	
HAS-3 Pressure	(psig)	10 - 20	30	22	

Parts Needed:	
Parts Installed:	350 A breaker upgrade / AC#1 and AC#2. MDP ventilation fan.

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10/8/19 1445	SCOTT Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		
VAS-01 Pressure	(psig)	10 - 20	30		
VAS-02 Flow Rate	(scfm)	TBD	TBD		
VAS-02 Pressure	(psig)	10 - 20	30		
VAS-03 Flow Rate	(scfm)	TBD	TBD		
VAS-03 Pressure	(psig)	10 - 20	30		
VAS-04 Flow Rate	(scfm)	TBD	TBD		
VAS-04 Pressure	(psig)	10 - 20	30		
VAS-05 Flow Rate	(scfm)	TBD	TBD		
VAS-05 Pressure	(psig)	10 - 20	30		
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD		
VAS-07 Pressure	(psig)	10 - 20	30		
VAS-08 Flow Rate	(scfm)	TBD	TBD		
VAS-08 Pressure	(psig)	10 - 20	30		
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-13 Pressure	(psig)	10 - 20	30	18	
VAS-14 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-14 Pressure	(psig)	10 - 20	30	11	
VAS-15 Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-15 Pressure	(psig)	10 - 20	30	6	
VAS-16 Flow Rate	(scfm)	TBD	TBD	9.6	
VAS-16 Pressure	(psig)	10 - 20	30	15	
VAS-17 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-17 Pressure	(psig)	10 - 20	30	8	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10/8/2019 1445	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-18 Pressure	(psig)	10 - 20	30	1	
VAS-19 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-19 Pressure	(psig)	10 - 20	30	17	
VAS-20 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-20 Pressure	(psig)	10 - 20	30	4	
VAS-21 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-21 Pressure	(psig)	10 - 20	30	23	
VAS-22 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-22 Pressure	(psig)	10 - 20	30	20	
VAS-23 Flow Rate	(scfm)	TBD	TBD	6.6	
VAS-23 Pressure	(psig)	10 - 20	30	22	
VAS-24 Flow Rate	(scfm)	TBD	TBD	4.4	
VAS-24 Pressure	(psig)	10 - 20	30	22	
VAS-25 Flow Rate	(scfm)	TBD	TBD	7.0	
VAS-25 Pressure	(psig)	10 - 20	30	16	
VAS-26 Flow Rate	(scfm)	TBD	TBD	3.4	
VAS-26 Pressure	(psig)	10 - 20	30	29	
VAS-27 Flow Rate	(scfm)	TBD	TBD	4.0	
VAS-27 Pressure	(psig)	10 - 20	30	26	
VAS-28 Flow Rate	(scfm)	TBD	TBD	7.4	
VAS-28 Pressure	(psig)	10 - 20	30	16	
VAS-29 Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-29 Pressure	(psig)	10 - 20	30	14	
VAS-30 Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-30 Pressure	(psig)	10 - 20	30	6	
VAS-31 Flow Rate	(scfm)	TBD	TBD	3.3	
VAS-31 Pressure	(psig)	10 - 20	30	30	
VAS-32 Flow Rate	(scfm)	TBD	TBD	7.0	
VAS-32 Pressure	(psig)	10 - 20	30	17	
VAS-33 Flow Rate	(scfm)	TBD	TBD	6.1	
VAS-33 Pressure	(psig)	10 - 20	30	20	
VAS-34 Flow Rate	(scfm)	TBD	TBD	6.0	
VAS-34 Pressure	(psig)	10 - 20	30	20	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10/10/2019 1445	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	105	
VAS-35 Pressure	(psig)	10 - 20	30	25	
VAS-36 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-36 Pressure	(psig)	10 - 20	30	18	
VAS-37 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-37 Pressure	(psig)	10 - 20	30	8	
VAS-38 Flow Rate	(scfm)	TBD	TBD	6.7	
VAS-38 Pressure	(psig)	10 - 20	30	8	
VAS-39 Flow Rate	(scfm)	TBD	TBD	11.0	
VAS-39 Pressure	(psig)	10 - 20	30	18	
VAS-40 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-40 Pressure	(psig)	10 - 20	30	18	
VAS-41 Flow Rate	(scfm)	TBD	TBD	—	
VAS-41 Pressure	(psig)	10 - 20	30	—	
VAS-42A Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-42A Pressure	(psig)	10 - 20	30	13	
VAS-43A Flow Rate	(scfm)	TBD	TBD	—	
VAS-43A Pressure	(psig)	10 - 20	30		
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD		
VAS-45 Pressure	(psig)	10 - 20	30		
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-47 Pressure	(psig)	10 - 20	30	8	
VAS-48 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-48 Pressure	(psig)	10 - 20	30	9	
VAS-49 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-49 Pressure	(psig)	10 - 20	30	11	
VAS-50 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-50 Pressure	(psig)	10 - 20	30	11	
VAS-51 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-51 Pressure	(psig)	10 - 20	30	6	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10/8/2019 1445	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-52 Pressure	(psig)	10 - 20	30	9	
VAS-53 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-53 Pressure	(psig)	10 - 20	30	6	
VAS-54 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-54 Pressure	(psig)	10 - 20	30	6	
VAS-55 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-55 Pressure	(psig)	10 - 20	30	3	
VAS-56 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-56 Pressure	(psig)	10 - 20	30	1	
VAS-57 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-57 Pressure	(psig)	10 - 20	30	3	
VAS-58 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-58 Pressure	(psig)	10 - 20	30	4	
VAS-59 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-59 Pressure	(psig)	10 - 20	30	2	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.4	
BCA-01 Pressure	(psig)	0 - 5	5	18	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.7	
BCA-02 Pressure	(psig)	0 - 5	5	20	
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
10/8/2019 1445	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / (No)	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / (No)	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	Yes / (No)	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10/14/2019 0845	SCOTT SMILEY	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	Yes	
Air Compressor 1 Run Time	(hours)	NA	NA	19606:13/16344:10	
Air Compressor 1 Temp	(F)	60 - 100	110	180	
Air Compressor 1 Pressure	(psig)	90 - 110	100	101	
Air Compressor 2 Run Time	(hours)	NA	NA	17162:29/19677:31	
Air Compressor 2 Temp	(F)	60 - 100	110	179	
Air Compressor 2 Pressure	(psig)	90 - 110	100	101	
Receiver Tank Pressure	(psig)	90 - 110	100	115	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	102	
Manifold Temperature	(F)	60 - 100	110	74	
Manifold Flow Rate	(scfm)	TBD	TBD	1850	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	527.5	
HAS-1 Valve Position	(%)	TBD	TBD	65.1	
HAS-1 Pressure	(psig)	10 - 20	30	26	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	503.5	
HAS-2 Valve Position	(%)	TBD	TBD	71.3	
HAS-2 Pressure	(psig)	10 - 20	30	31	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	263.4	
HAS-3 Valve Position	(%)	TBD	TBD	24.3	
HAS-3 Pressure	(psig)	10 - 20	30	20	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10/14/2019 0845	SCOTT SHIELDS	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-01 Pressure	(psig)	10 - 20	30	21	
VAS-02 Flow Rate	(scfm)	TBD	TBD	0.2	
VAS-02 Pressure	(psig)	10 - 20	30	34	
VAS-03 Flow Rate	(scfm)	TBD	TBD	5.6	
VAS-03 Pressure	(psig)	10 - 20	30	24	
VAS-04 Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-04 Pressure	(psig)	10 - 20	30	3	
VAS-05 Flow Rate	(scfm)	TBD	TBD		
VAS-05 Pressure	(psig)	10 - 20	30		
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD		
VAS-07 Pressure	(psig)	10 - 20	30		
VAS-08 Flow Rate	(scfm)	TBD	TBD		
VAS-08 Pressure	(psig)	10 - 20	30		
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-11 Pressure	(psig)	10 - 20	30	22	
VAS-12 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-12 Pressure	(psig)	10 - 20	30	14	
VAS-13 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-13 Pressure	(psig)	10 - 20	30	20	
VAS-14 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-14 Pressure	(psig)	10 - 20	30	12	
VAS-15 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-15 Pressure	(psig)	10 - 20	30	9	
VAS-16 Flow Rate	(scfm)	TBD	TBD	9.7	
VAS-16 Pressure	(psig)	10 - 20	30	19	
VAS-17 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-17 Pressure	(psig)	10 - 20	30	16	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10/14/2019 0845	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-18 Pressure	(psig)	10 - 20	30	2	
VAS-19 Flow Rate	(scfm)	TBD	TBD	6.0	
VAS-19 Pressure	(psig)	10 - 20	30	20	
VAS-20 Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-20 Pressure	(psig)	10 - 20	30	4	
VAS-21 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-21 Pressure	(psig)	10 - 20	30	27	
VAS-22 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-22 Pressure	(psig)	10 - 20	30	20	
VAS-23 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-23 Pressure	(psig)	10 - 20	30	22	
VAS-24 Flow Rate	(scfm)	TBD	TBD	5.0	
VAS-24 Pressure	(psig)	10 - 20	30	22	
VAS-25 Flow Rate	(scfm)	TBD	TBD	5.9	
VAS-25 Pressure	(psig)	10 - 20	30	23	
VAS-26 Flow Rate	(scfm)	TBD	TBD	1.9	
VAS-26 Pressure	(psig)	10 - 20	30	32	
VAS-27 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-27 Pressure	(psig)	10 - 20	30	26	
VAS-28 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-28 Pressure	(psig)	10 - 20	30	17	
VAS-29 Flow Rate	(scfm)	TBD	TBD	10.2	
VAS-29 Pressure	(psig)	10 - 20	30	15	
VAS-30 Flow Rate	(scfm)	TBD	TBD	10.3	
VAS-30 Pressure	(psig)	10 - 20	30	8	
VAS-31 Flow Rate	(scfm)	TBD	TBD	3.8	
VAS-31 Pressure	(psig)	10 - 20	30	32	
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.8	
VAS-32 Pressure	(psig)	10 - 20	30	17	
VAS-33 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-33 Pressure	(psig)	10 - 20	30	19	
VAS-34 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-34 Pressure	(psig)	10 - 20	30	20	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10/14/2019 0845	SCOTT SMALLEY	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD		
VAS-41 Pressure	(psig)	10 - 20	30		
VAS-42A Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-42A Pressure	(psig)	10 - 20	30	14	
VAS-43A Flow Rate	(scfm)	TBD	TBD		
VAS-43A Pressure	(psig)	10 - 20	30		
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD	9.7	
VAS-45 Pressure	(psig)	10 - 20	30	21	
VAS-46 Flow Rate	(scfm)	TBD	TBD	—	
VAS-46 Pressure	(psig)	10 - 20	30	—	
VAS-47 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-47 Pressure	(psig)	10 - 20	30	8	
VAS-48 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-48 Pressure	(psig)	10 - 20	30	10	
VAS-49 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-49 Pressure	(psig)	10 - 20	30	12	
VAS-50 Flow Rate	(scfm)	TBD	TBD	7.1	
VAS-50 Pressure	(psig)	10 - 20	30	10	
VAS-51 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-51 Pressure	(psig)	10 - 20	30	8	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10/14/2019 0845	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-52 Pressure	(psig)	10 - 20	30	9	
VAS-53 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-53 Pressure	(psig)	10 - 20	30	5	
VAS-54 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-54 Pressure	(psig)	10 - 20	30	6	
VAS-55 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-55 Pressure	(psig)	10 - 20	30	4	
VAS-56 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-56 Pressure	(psig)	10 - 20	30	2	
VAS-57 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-57 Pressure	(psig)	10 - 20	30	2	
VAS-58 Flow Rate	(scfm)	TBD	TBD	8.4	
VAS-58 Pressure	(psig)	10 - 20	30	4	
VAS-59 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-59 Pressure	(psig)	10 - 20	30	3	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.5	
BCA-01 Pressure	(psig)	0 - 5	5	19	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.8	
BCA-02 Pressure	(psig)	0 - 5	5	20	
Bedrock Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BRS-01 Flow Rate	(scfm)	TBD	TBD		
BRS-01 Pressure	(psig)	10 - 20	30		
BRS-02 Flow Rate	(scfm)	TBD	TBD		
BRS-02 Pressure	(psig)	10 - 20	30		
BRS-03 Flow Rate	(scfm)	TBD	TBD		
BRS-03 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	JBenny Buice/ATL	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
10/19/2019 0845	Scott Shipp	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / (No)	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / (No)	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	Yes / (No)	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10.24.19/1500	T. HALL/GVC		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA		YES
Air Compressor 1 Run Time	(hours)	NA	NA		19,805:09
Air Compressor 1 Temp	(F)	60 - 100	110		182
Air Compressor 1 Pressure	(psig)	90 - 110	100		102
Air Compressor 2 Run Time	(hours)	NA	NA		17,301:24
Air Compressor 2 Temp	(F)	60 - 100	110		188
Air Compressor 2 Pressure	(psig)	90 - 110	100		102
Receiver Tank Pressure	(psig)	90 - 110	100		115
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100		102
Manifold Temperature	(F)	60 - 100	110		88
Manifold Flow Rate	(scfm)	TBD	TBD		1737
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD		525
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD		524.7
HAS-1 Valve Position	(%)	TBD	TBD		66.0
HAS-1 Pressure	(psig)	10 - 20	30		24
HAS-2 Target Flow Rate	(scfm)	TBD	TBD		502
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD		502.3 ~~43.0~~ (24)
HAS-2 Valve Position	(%)	TBD	TBD		(24) ~~28~~ 43
HAS-2 Pressure	(psig)	10 - 20	30		28
HAS-3 Target Flow Rate	(scfm)	TBD	TBD		262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD		264.5
HAS-3 Valve Position	(%)	TBD	TBD		24.9
HAS-3 Pressure	(psig)	10 - 20	30		18

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10.24.19/1500	T. HALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	IJIC Permit To Operate: SCME03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		
VAS-01 Pressure	(psig)	10 - 20	30		
VAS-02 Flow Rate	(scfm)	TBD	TBD		
VAS-02 Pressure	(psig)	10 - 20	30		
VAS-03 Flow Rate	(scfm)	TBD	TBD		
VAS-03 Pressure	(psig)	10 - 20	30		
VAS-04 Flow Rate	(scfm)	TBD	TBD		8.8
VAS-04 Pressure	(psig)	10 - 20	30		5
VAS-05 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-05 Pressure	(psig)	10 - 20	30		7
VAS-06 Flow Rate	(scfm)	TBD	TBD		9.4
VAS-06 Pressure	(psig)	10 - 20	30		5
VAS-07 Flow Rate	(scfm)	TBD	TBD		9.9
VAS-07 Pressure	(psig)	10 - 20	30		12
VAS-08 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-08 Pressure	(psig)	10 - 20	30		4
VAS-09 Flow Rate	(scfm)	TBD	TBD		5.7
VAS-09 Pressure	(psig)	10 - 20	30		15
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD		
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD		
VAS-16 Pressure	(psig)	10 - 20	30		
VAS-17 Flow Rate	(scfm)	TBD	TBD		
VAS-17 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10.24.19/1500	T. Hall/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCME03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD		
VAS-20 Pressure	(psig)	10 - 20	30		
VAS-21 Flow Rate	(scfm)	TBD	TBD		
VAS-21 Pressure	(psig)	10 - 20	30		
VAS-22 Flow Rate	(scfm)	TBD	TBD		
VAS-22 Pressure	(psig)	10 - 20	30		
VAS-23 Flow Rate	(scfm)	TBD	TBD		8.3
VAS-23 Pressure	(psig)	10 - 20	30		20
VAS-24 Flow Rate	(scfm)	TBD	TBD		7.3
VAS-24 Pressure	(psig)	10 - 20	30		22
VAS-25 Flow Rate	(scfm)	TBD	TBD		4.4
VAS-25 Pressure	(psig)	10 - 20	30		20
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD		9.2
VAS-32 Pressure	(psig)	10 - 20	30		17
VAS-33 Flow Rate	(scfm)	TBD	TBD		10.3
VAS-33 Pressure	(psig)	10 - 20	30		17
VAS-34 Flow Rate	(scfm)	TBD	TBD		8.0
VAS-34 Pressure	(psig)	10 - 20	30		21

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10 24-19/1500	T. HALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		6.9
VAS-38 Pressure	(psig)	10 - 20	30		5
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD		9.6
VAS-41 Pressure	(psig)	10 - 20	30		11
VAS-42A Flow Rate	(scfm)	TBD	TBD		8.2
VAS-42A Pressure	(psig)	10 - 20	30		12
VAS-43A Flow Rate	(scfm)	TBD	TBD		3.4
VAS-43A Pressure	(psig)	10 - 20	30		30
VAS-44A Flow Rate	(scfm)	TBD	TBD		1.4
VAS-44A Pressure	(psig)	10 - 20	30		29
VAS-45 Flow Rate	(scfm)	TBD	TBD		9.4
VAS-45 Pressure	(psig)	10 - 20	30		20
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD		7.9
VAS-47 Pressure	(psig)	10 - 20	30		8
VAS-48 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-48 Pressure	(psig)	10 - 20	30		10
VAS-49 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-49 Pressure	(psig)	10 - 20	30		10
VAS-50 Flow Rate	(scfm)	TBD	TBD		7.7
VAS-50 Pressure	(psig)	10 - 20	30		10
VAS-51 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-51 Pressure	(psig)	10 - 20	30		5

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10.24.19/1500	T.HALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD		7.9
VAS-52 Pressure	(psig)	10 - 20	30		8
VAS-53 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-53 Pressure	(psig)	10 - 20	30		4
VAS-54 Flow Rate	(scfm)	TBD	TBD		6.7
VAS-54 Pressure	(psig)	10 - 20	30		4
VAS-55 Flow Rate	(scfm)	TBD	TBD		7.4
VAS-55 Pressure	(psig)	10 - 20	30		6
VAS-56 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-56 Pressure	(psig)	10 - 20	30		0
VAS-57 Flow Rate	(scfm)	TBD	TBD		7.9
VAS-57 Pressure	(psig)	10 - 20	30		4
VAS-58 Flow Rate	(scfm)	TBD	TBD		7.7
VAS-58 Pressure	(psig)	10 - 20	30		6
VAS-59 Flow Rate	(scfm)	TBD	TBD		7.7
VAS-59 Pressure	(psig)	10 - 20	30		0
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD		
BCA-01 Pressure	(psig)	0 - 5	5		
BCA-02 Flow Rate	(scfm)	TBD	TBD		
BCA-02 Pressure	(psig)	0 - 5	5		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
10-24-19/1500	T. HALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek.	Each visit	~~Yes / No~~	~~Yes / No~~		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / (No)		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / (No)		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: BCA-01 + BCA-02 OFF FOR SW SAMPLING

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10-31-19/0900	T. HALL/AVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCME03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	
Air Compressor 1 Run Time	(hours)	NA	NA	20,016:50	
Air Compressor 1 Temp	(F)	60 - 100	110	187	
Air Compressor 1 Pressure	(psig)	90 - 110	100	100	
Air Compressor 2 Run Time	(hours)	NA	NA	17,513:06	
Air Compressor 2 Temp	(F)	60 - 100	110	194	
Air Compressor 2 Pressure	(psig)	90 - 110	100	101	
Receiver Tank Pressure	(psig)	90 - 110	100	114	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	100	
Manifold Temperature	(F)	60 - 100	110	98	
Manifold Flow Rate	(scfm)	TBD	TBD	1860	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	525.2	
HAS-1 Valve Position	(%)	TBD	TBD	66.5	
HAS-1 Pressure	(psig)	10 - 20	30	24	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	501.2	
HAS-2 Valve Position	(%)	TBD	TBD	40.6	
HAS-2 Pressure	(psig)	10 - 20	30	26	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	263.9	
HAS-3 Valve Position	(%)	TBD	TBD	25.4	
HAS-3 Pressure	(psig)	10 - 20	30	18	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10-31-19/0900	T. HALL/GW		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	9.7	
VAS-01 Pressure	(psig)	10 - 20	30	22	
VAS-02 Flow Rate	(scfm)	TBD	TBD	0.7	
VAS-02 Pressure	(psig)	10 - 20	30	36	
VAS-03 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-03 Pressure	(psig)	10 - 20	30	24	
VAS-04 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-04 Pressure	(psig)	10 - 20	30	0	
VAS-05 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-05 Pressure	(psig)	10 - 20	30	4	
VAS-06 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-06 Pressure	(psig)	10 - 20	30	5	
VAS-07 Flow Rate	(scfm)	TBD	TBD	4.9	
VAS-07 Pressure	(psig)	10 - 20	30	5	
VAS-08 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-08 Pressure	(psig)	10 - 20	30	12	
VAS-09 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-09 Pressure	(psig)	10 - 20	30	5	
VAS-10 Flow Rate	(scfm)	TBD	TBD	4.7	
VAS-10 Pressure	(psig)	10 - 20	30	15	
VAS-11 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-11 Pressure	(psig)	10 - 20	30	20	
VAS-12 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-12 Pressure	(psig)	10 - 20	30	12	
VAS-13 Flow Rate	(scfm)	TBD	TBD		
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD		
VAS-16 Pressure	(psig)	10 - 20	30		
VAS-17 Flow Rate	(scfm)	TBD	TBD		
VAS-17 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10 31-19/0900	T. HALL/CVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD		
VAS-20 Pressure	(psig)	10 - 20	30		
VAS-21 Flow Rate	(scfm)	TBD	TBD		
VAS-21 Pressure	(psig)	10 - 20	30		
VAS-22 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-22 Pressure	(psig)	10 - 20	30	20	
VAS-23 Flow Rate	(scfm)	TBD	TBD	7.0	
VAS-23 Pressure	(psig)	10 - 20	30	21	
VAS-24 Flow Rate	(scfm)	TBD	TBD	3.9	
VAS-24 Pressure	(psig)	10 - 20	30	20	
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-32 Pressure	(psig)	10 - 20	30	16	
VAS-33 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-33 Pressure	(psig)	10 - 20	30	18	
VAS-34 Flow Rate	(scfm)	TBD	TBD	7.6	
VAS-34 Pressure	(psig)	10 - 20	30	18	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10.31.19/0900	T. HALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	12.0	
VAS-35 Pressure	(psig)	10 - 20	30	24	
VAS-36 Flow Rate	(scfm)	TBD	TBD	9.6	
VAS-36 Pressure	(psig)	10 - 20	30	15	
VAS-37 Flow Rate	(scfm)	TBD	TBD	8.9	
VAS-37 Pressure	(psig)	10 - 20	30	7	
VAS-38 Flow Rate	(scfm)	TBD	TBD	6.6	
VAS-38 Pressure	(psig)	10 - 20	30	5	
VAS-39 Flow Rate	(scfm)	TBD	TBD	11.0	
VAS-39 Pressure	(psig)	10 - 20	30	17	
VAS-40 Flow Rate	(scfm)	TBD	TBD	10.0	
VAS-40 Pressure	(psig)	10 - 20	30	20	
VAS-41 Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-41 Pressure	(psig)	10 - 20	30	12	
VAS-42A Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-42A Pressure	(psig)	10 - 20	30	12	
VAS-43A Flow Rate	(scfm)	TBD	TBD	6.5	
VAS-43A Pressure	(psig)	10 - 20	30	35	
VAS-44A Flow Rate	(scfm)	TBD	TBD	~~8.6~~ 8.4	
VAS-44A Pressure	(psig)	10 - 20	30	35	
VAS-45 Flow Rate	(scfm)	TBD	TBD		
VAS-45 Pressure	(psig)	10 - 20	30		
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-47 Pressure	(psig)	10 - 20	30	10	
VAS-48 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-48 Pressure	(psig)	10 - 20	30	10	
VAS-49 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-49 Pressure	(psig)	10 - 20	30	10	
VAS-50 Flow Rate	(scfm)	TBD	TBD	7.4	
VAS-50 Pressure	(psig)	10 - 20	30	10	
VAS-51 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-51 Pressure	(psig)	10 - 20	30	8	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10.31.19/0900	T. Hall/GH		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-52 Pressure	(psig)	10 - 20	30	10	
VAS-53 Flow Rate	(scfm)	TBD	TBD	5.6	
VAS-53 Pressure	(psig)	10 - 20	30	2	
VAS-54 Flow Rate	(scfm)	TBD	TBD	6.7	
VAS-54 Pressure	(psig)	10 - 20	30	4	
VAS-55 Flow Rate	(scfm)	TBD	TBD	6.9	
VAS-55 Pressure	(psig)	10 - 20	30	4	
VAS-56 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-56 Pressure	(psig)	10 - 20	30	0	
VAS-57 Flow Rate	(scfm)	TBD	TBD	7.2	
VAS-57 Pressure	(psig)	10 - 20	30	4	
VAS-58 Flow Rate	(scfm)	TBD	TBD	7.3	
VAS-58 Pressure	(psig)	10 - 20	30	4	
VAS-59 Flow Rate	(scfm)	TBD	TBD	7.2	
VAS-59 Pressure	(psig)	10 - 20	30	0	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.8	
BCA-01 Pressure	(psig)	0 - 5	5	18	
BCA-02 Flow Rate	(scfm)	TBD	TBD	15.0	
BCA-02 Pressure	(psig)	0 - 5	5	19	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
10-31-14/0900	T. HALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		REMOVED SECTION OF SILT FENCE
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / (No)		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
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Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: WELLS INCREASED PRESSURE AT: VAS-2, 43, 44 PER MARK STRONG/CLT REQUEST

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11-7-19/1500	T.HALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA		YES
Air Compressor 1 Run Time	(hours)	NA	NA		20,188:16
Air Compressor 1 Temp	(F)	60 - 100	110		181
Air Compressor 1 Pressure	(psig)	90 - 110	100		101
Air Compressor 2 Run Time	(hours)	NA	NA		17,684:32
Air Compressor 2 Temp	(F)	60 - 100	110		180
Air Compressor 2 Pressure	(psig)	90 - 110	100		101
Receiver Tank Pressure	(psig)	90 - 110	100		
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100		100
Manifold Temperature	(F)	60 - 100	110		79
Manifold Flow Rate	(scfm)	TBD	TBD		1876
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD		525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD		527.8
HAS-1 Valve Position	(%)	TBD	TBD		64.7
HAS-1 Pressure	(psig)	10 - 20	30		24
HAS-2 Target Flow Rate	(scfm)	TBD	TBD		502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD		500.8
HAS-2 Valve Position	(%)	TBD	TBD		37.9
HAS-2 Pressure	(psig)	10 - 20	30		27
HAS-3 Target Flow Rate	(scfm)	TBD	TBD		262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD		261.7
HAS-3 Valve Position	(%)	TBD	TBD		24.3
HAS-3 Pressure	(psig)	10 - 20	30		18

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11-7-19/1500	TJHALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		9.5
VAS-01 Pressure	(psig)	10 - 20	30		22
VAS-02 Flow Rate	(scfm)	TBD	TBD		1.0
VAS-02 Pressure	(psig)	10 - 20	30		38
VAS-03 Flow Rate	(scfm)	TBD	TBD		9.4
VAS-03 Pressure	(psig)	10 - 20	30		23
VAS-04 Flow Rate	(scfm)	TBD	TBD		9.3
VAS-04 Pressure	(psig)	10 - 20	30		0
VAS-05 Flow Rate	(scfm)	TBD	TBD		9.5
VAS-05 Pressure	(psig)	10 - 20	30		4
VAS-06 Flow Rate	(scfm)	TBD	TBD		9.1
VAS-06 Pressure	(psig)	10 - 20	30		5
VAS-07 Flow Rate	(scfm)	TBD	TBD		9.3
VAS-07 Pressure	(psig)	10 - 20	30		7
VAS-08 Flow Rate	(scfm)	TBD	TBD		9.8
VAS-08 Pressure	(psig)	10 - 20	30		14
VAS-09 Flow Rate	(scfm)	TBD	TBD		9.0
VAS-09 Pressure	(psig)	10 - 20	30		4
VAS-10 Flow Rate	(scfm)	TBD	TBD		9.2
VAS-10 Pressure	(psig)	10 - 20	30		11
VAS-11 Flow Rate	(scfm)	TBD	TBD		8.8
VAS-11 Pressure	(psig)	10 - 20	30		21
VAS-12 Flow Rate	(scfm)	TBD	TBD		7.9
VAS-12 Pressure	(psig)	10 - 20	30		12
VAS-13 Flow Rate	(scfm)	TBD	TBD		
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD		
VAS-16 Pressure	(psig)	10 - 20	30		
VAS-17 Flow Rate	(scfm)	TBD	TBD		
VAS-17 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11.7.19/1500	T.HAL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD		
VAS-20 Pressure	(psig)	10 - 20	30		
VAS-21 Flow Rate	(scfm)	TBD	TBD		
VAS-21 Pressure	(psig)	10 - 20	30		
VAS-22 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-22 Pressure	(psig)	10 - 20	30		20
VAS-23 Flow Rate	(scfm)	TBD	TBD		7.4
VAS-23 Pressure	(psig)	10 - 20	30		22
VAS-24 Flow Rate	(scfm)	TBD	TBD		4.2
VAS-24 Pressure	(psig)	10 - 20	30		22
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD		9.5
VAS-32 Pressure	(psig)	10 - 20	30		16
VAS-33 Flow Rate	(scfm)	TBD	TBD		10.6
VAS-33 Pressure	(psig)	10 - 20	30		18
VAS-34 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-34 Pressure	(psig)	10 - 20	30		19

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11.7.19 / 1500	T. HALL/GH		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		9.0
VAS-35 Pressure	(psig)	10 - 20	30		28
VAS-36 Flow Rate	(scfm)	TBD	TBD		9.8
VAS-36 Pressure	(psig)	10 - 20	30		17
VAS-37 Flow Rate	(scfm)	TBD	TBD		9.5
VAS-37 Pressure	(psig)	10 - 20	30		8
VAS-38 Flow Rate	(scfm)	TBD	TBD		7.4
VAS-38 Pressure	(psig)	10 - 20	30		5
VAS-39 Flow Rate	(scfm)	TBD	TBD		12.1
VAS-39 Pressure	(psig)	10 - 20	30		17
VAS-40 Flow Rate	(scfm)	TBD	TBD		10.3
VAS-40 Pressure	(psig)	10 - 20	30		21
VAS-41 Flow Rate	(scfm)	TBD	TBD		9.4
VAS-41 Pressure	(psig)	10 - 20	30		14
VAS-42A Flow Rate	(scfm)	TBD	TBD		8.3
VAS-42A Pressure	(psig)	10 - 20	30		14
VAS-43A Flow Rate	(scfm)	TBD	TBD		11.9
VAS-43A Pressure	(psig)	10 - 20	30		35
VAS-44A Flow Rate	(scfm)	TBD	TBD		11.7
VAS-44A Pressure	(psig)	10 - 20	30		38
VAS-45 Flow Rate	(scfm)	TBD	TBD		
VAS-45 Pressure	(psig)	10 - 20	30		
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-47 Pressure	(psig)	10 - 20	30		10
VAS-48 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-48 Pressure	(psig)	10 - 20	30		1.0
VAS-49 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-49 Pressure	(psig)	10 - 20	30		10
VAS-50 Flow Rate	(scfm)	TBD	TBD		8.0
VAS-50 Pressure	(psig)	10 - 20	30		10
VAS-51 Flow Rate	(scfm)	TBD	TBD		7.9
VAS-51 Pressure	(psig)	10 - 20	30		5

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11-7-19/1300	T. Hall/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-52 Pressure	(psig)	10 - 20	30		9
VAS-53 Flow Rate	(scfm)	TBD	TBD		6.6
VAS-53 Pressure	(psig)	10 - 20	30		5
VAS-54 Flow Rate	(scfm)	TBD	TBD		6.8
VAS-54 Pressure	(psig)	10 - 20	30		5
VAS-55 Flow Rate	(scfm)	TBD	TBD		7.0
VAS-55 Pressure	(psig)	10 - 20	30		8
VAS-56 Flow Rate	(scfm)	TBD	TBD		8.3
VAS-56 Pressure	(psig)	10 - 20	30		0
VAS-57 Flow Rate	(scfm)	TBD	TBD		7.5
VAS-57 Pressure	(psig)	10 - 20	30		6
VAS-58 Flow Rate	(scfm)	TBD	TBD		7.6
VAS-58 Pressure	(psig)	10 - 20	30		8
VAS-59 Flow Rate	(scfm)	TBD	TBD		5.9
VAS-59 Pressure	(psig)	10 - 20	30		0
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD		16.1
BCA-01 Pressure	(psig)	0 - 5	5		20
BCA-02 Flow Rate	(scfm)	TBD	TBD		14.9
BCA-02 Pressure	(psig)	0 - 5	5		20

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAI	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
11-7 19/1500	T.HALL/GVL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCH0302040 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		WTL HIGHER THAN NORMAL
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / (No)		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
–	–				
–	–				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / (No)		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / (No)		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / (No)		TAGS PUNCHED
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: WATER DRAINED FROM CITY WATER CONNECTION AND HOSE DISCONNECTED. TEMP FOR HEAT TRACE ON COMPRESSORS INCREASED FOR WINTER.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
11/12/2019 1104	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / (No)	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / (No)	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	Yes / (No)	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: Make some thermostat adjustments to compressor exhaust heaters.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11/12/2019 1100	Scott Sullivan	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	yes	
Air Compressor 1 Run Time / LOAD	(hours)	NA	NA	20304:59 / 17042:56	
Air Compressor 1 Temp	(F)	60 - 100	110	180	
Air Compressor 1 Pressure	(psig)	90 - 110	100	102	
Air Compressor 2 Run Time / LOAD	(hours)	NA	NA	17801:16 / 14376:18	
Air Compressor 2 Temp	(F)	60 - 100	110	177	
Air Compressor 2 Pressure	(psig)	90 - 110	100	102	
Receiver Tank Pressure	(psig)	90 - 110	100	115	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	102	
Manifold Temperature	(F)	60 - 100	110	56	
Manifold Flow Rate	(scfm)	TBD	TBD	1845	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	523.0	
HAS-1 Valve Position	(%)	TBD	TBD	62.4	
HAS-1 Pressure	(psig)	10 - 20	30	24	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	501.8	
HAS-2 Valve Position	(%)	TBD	TBD	35.1	
HAS-2 Pressure	(psig)	10 - 20	30	28	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	261.4	
HAS-3 Valve Position	(%)	TBD	TBD	23.4	
HAS-3 Pressure	(psig)	10 - 20	30	18	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

- Adjust new expansion wells VAS 47-57 to 9 SCFM

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11/12/2019 1100	Scott Sinclair	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	11.0	
VAS-01 Pressure	(psig)	10 - 20	30	23	
VAS-02 Flow Rate	(scfm)	TBD	TBD	1.4 > Add 2 psi to 46, Flow increases to 2.5 SCFM then falls back to 1.4	
VAS-02 Pressure	(psig)	10 - 20	30	44 >	
VAS-03 Flow Rate	(scfm)	TBD	TBD	11.0	
VAS-03 Pressure	(psig)	10 - 20	30	23	
VAS-04 Flow Rate	(scfm)	TBD	TBD	9.6	
VAS-04 Pressure	(psig)	10 - 20	30	3	
VAS-05 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-05 Pressure	(psig)	10 - 20	30	5	
VAS-06 Flow Rate	(scfm)	TBD	TBD	9.8	
VAS-06 Pressure	(psig)	10 - 20	30	6	
VAS-07 Flow Rate	(scfm)	TBD	TBD	10.2	
VAS-07 Pressure	(psig)	10 - 20	30	6	
VAS-08 Flow Rate	(scfm)	TBD	TBD	10.3	
VAS-08 Pressure	(psig)	10 - 20	30	13	
VAS-09 Flow Rate	(scfm)	TBD	TBD	9.2 > Increase to	
VAS-09 Pressure	(psig)	10 - 20	30	5 10 SCFM, 7 psi	
VAS-10 Flow Rate	(scfm)	TBD	TBD	10.6	
VAS-10 Pressure	(psig)	10 - 20	30	11	
VAS-11 Flow Rate	(scfm)	TBD	TBD	8.7 > ~~Increase to 10SCFM,~~	VAS 22
VAS-11 Pressure	(psig)	10 - 20	30	19 ~~21 psi~~	
VAS-12 Flow Rate	(scfm)	TBD	TBD	8.1 > ~~increase to 9.7 SCFM~~,	VAS 23
VAS-12 Pressure	(psig)	10 - 20	30	27 ~~25 psi~~	
VAS-13 Flow Rate	(scfm)	TBD	TBD	4.5 > ~~Add 3 psi to 26,~~	VAS 24
VAS-13 Pressure	(psig)	10 - 20	30	25 Flow to 5.7 SCFM	
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD		
VAS-16 Pressure	(psig)	10 - 20	30		
VAS-17 Flow Rate	(scfm)	TBD	TBD		
VAS-17 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11/12/19 1500	Scott Swab	←	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD		
VAS-20 Pressure	(psig)	10 - 20	30		
VAS-21 Flow Rate	(scfm)	TBD	TBD		
VAS-21 Pressure	(psig)	10 - 20	30		
VAS-22 Flow Rate	(scfm)	TBD	TBD	8.7 > increase to 10 scfm,	
VAS-22 Pressure	(psig)	10 - 20	30	19 > 21 psi	
VAS-23 Flow Rate	(scfm)	TBD	TBD	8.1 > increase to 10 scfm,	
VAS-23 Pressure	(psig)	10 - 20	30	22 > 25 psi	
VAS-24 Flow Rate	(scfm)	TBD	TBD	4.5 > Add 3 psi to 26	
VAS-24 Pressure	(psig)	10 - 20	30	23 > Flow to 5.7 SCFM	
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-32 Pressure	(psig)	10 - 20	30	17	
VAS-33 Flow Rate	(scfm)	TBD	TBD	11.0	
VAS-33 Pressure	(psig)	10 - 20	30	19	
VAS-34 Flow Rate	(scfm)	TBD	TBD	8.5 >	increase 9.5 SCFM
VAS-34 Pressure	(psig)	10 - 20	30	20	22 psi

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11/12/2019 1100	SCOTT SMITH	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD	10.0	
VAS-41 Pressure	(psig)	10 - 20	30	13	
VAS-42A Flow Rate	(scfm)	TBD	TBD	8.2 > increase 10.1 scfm,	
VAS-42A Pressure	(psig)	10 - 20	30	13	15 psi
VAS-43A Flow Rate	(scfm)	TBD	TBD	10.4	
VAS-43A Pressure	(psig)	10 - 20	30	37	
VAS-44A Flow Rate	(scfm)	TBD	TBD	12.9 > decrease 10.35 scfm,	
VAS-44A Pressure	(psig)	10 - 20	30	39	37 psi
VAS-45 Flow Rate	(scfm)	TBD	TBD		
VAS-45 Pressure	(psig)	10 - 20	30		
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-47 Pressure	(psig)	10 - 20	30	8	
VAS-48 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-48 Pressure	(psig)	10 - 20	30	10	
VAS-49 Flow Rate	(scfm)	TBD	TBD	8.9	
VAS-49 Pressure	(psig)	10 - 20	30	11	
VAS-50 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-50 Pressure	(psig)	10 - 20	30	10	
VAS-51 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-51 Pressure	(psig)	10 - 20	30	7	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11/12/2019 1100	Scott Shipp	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-52 Pressure	(psig)	10 - 20	30	9	
VAS-53 Flow Rate	(scfm)	TBD	TBD	7.0	
VAS-53 Pressure	(psig)	10 - 20	30	5	
VAS-54 Flow Rate	(scfm)	TBD	TBD	7.0	
VAS-54 Pressure	(psig)	10 - 20	30	5	
VAS-55 Flow Rate	(scfm)	TBD	TBD	7.3	
VAS-55 Pressure	(psig)	10 - 20	30	4	
VAS-56 Flow Rate	(scfm)	TBD	TBD	9.7	
VAS-56 Pressure	(psig)	10 - 20	30	2	
VAS-57 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-57 Pressure	(psig)	10 - 20	30	2	
VAS-58 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-58 Pressure	(psig)	10 - 20	30	3	
VAS-59 Flow Rate	(scfm)	TBD	TBD	6.3	
VAS-59 Pressure	(psig)	10 - 20	30	1	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	15.4	
BCA-01 Pressure	(psig)	0 - 5	5	20	
BCA-02 Flow Rate	(scfm)	TBD	TBD	15.1	
BCA-02 Pressure	(psig)	0 - 5	5	20	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11-21-19/1100	T.HALL/GVL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	20,521:33	20,523:41
Air Compressor 1 Temp	(F)	60 - 100	110	180	182
Air Compressor 1 Pressure	(psig)	90 - 110	100	103	101
Air Compressor 2 Run Time	(hours)	NA	NA	18,017:49	18,019:57
Air Compressor 2 Temp	(F)	60 - 100	110	178	181
Air Compressor 2 Pressure	(psig)	90 - 110	100	102	101
Receiver Tank Pressure	(psig)	90 - 110	100	114	114
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	102	101
Manifold Temperature	(F)	60 - 100	110	72	76
Manifold Flow Rate	(scfm)	TBD	TBD	1765	1898
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	525.8	524.6
HAS-1 Valve Position	(%)	TBD	TBD	62.9	63.1
HAS-1 Pressure	(psig)	10 - 20	30	23	22
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	502
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	503.0	502.5
HAS-2 Valve Position	(%)	TBD	TBD	35.5	35.8
HAS-2 Pressure	(psig)	10 - 20	30	24	25
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	261.9	263.8
HAS-3 Valve Position	(%)	TBD	TBD	24.1	24.0
HAS-3 Pressure	(psig)	10 - 20	30	16	16

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11-21-19/1100	T. HAWLEY	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		
VAS-01 Pressure	(psig)	10 - 20	30		
VAS-02 Flow Rate	(scfm)	TBD	TBD		
VAS-02 Pressure	(psig)	10 - 20	30		
VAS-03 Flow Rate	(scfm)	TBD	TBD		
VAS-03 Pressure	(psig)	10 - 20	30		
VAS-04 Flow Rate	(scfm)	TBD	TBD	4.8	
VAS-04 Pressure	(psig)	10 - 20	30	0	
VAS-05 Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-05 Pressure	(psig)	10 - 20	30	4	
VAS-06 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-06 Pressure	(psig)	10 - 20	30	5	
VAS-07 Flow Rate	(scfm)	TBD	TBD	9.9	
VAS-07 Pressure	(psig)	10 - 20	30	4	
VAS-08 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-08 Pressure	(psig)	10 - 20	30	12	
VAS-09 Flow Rate	(scfm)	TBD	TBD	9.6	
VAS-09 Pressure	(psig)	10 - 20	30	5	
VAS-10 Flow Rate	(scfm)	TBD	TBD	10.7	
VAS-10 Pressure	(psig)	10 - 20	30	10	
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD		12.2
VAS-13 Pressure	(psig)	10 - 20	30		18
VAS-14 Flow Rate	(scfm)	TBD	TBD		9.6
VAS-14 Pressure	(psig)	10 - 20	30		10
VAS-15 Flow Rate	(scfm)	TBD	TBD		9.6
VAS-15 Pressure	(psig)	10 - 20	30		5
VAS-16 Flow Rate	(scfm)	TBD	TBD		11.9
VAS-16 Pressure	(psig)	10 - 20	30		15
VAS-17 Flow Rate	(scfm)	TBD	TBD		9.1
VAS-17 Pressure	(psig)	10 - 20	30		10

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11.21.19/1110	T. HALL/AVL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		9.9
VAS-18 Pressure	(psig)	10 - 20	30		0
VAS-19 Flow Rate	(scfm)	TBD	TBD		11.6
VAS-19 Pressure	(psig)	10 - 20	30		12
VAS-20 Flow Rate	(scfm)	TBD	TBD		9.4
VAS-20 Pressure	(psig)	10 - 20	30		5
VAS-21 Flow Rate	(scfm)	TBD	TBD		9.8
VAS-21 Pressure	(psig)	10 - 20	30		25
VAS-22 Flow Rate	(scfm)	TBD	TBD	10.4	10.2
VAS-22 Pressure	(psig)	10 - 20	30	20	20
VAS-23 Flow Rate	(scfm)	TBD	TBD	10.8	10.6
VAS-23 Pressure	(psig)	10 - 20	30	24	24
VAS-24 Flow Rate	(scfm)	TBD	TBD	9.0	8.8
VAS-24 Pressure	(psig)	10 - 20	30	22	22
VAS-25 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-25 Pressure	(psig)	10 - 20	30		18
VAS-26 Flow Rate	(scfm)	TBD	TBD		5.7
VAS-26 Pressure	(psig)	10 - 20	30		31
VAS-27 Flow Rate	(scfm)	TBD	TBD		8.1
VAS-27 Pressure	(psig)	10 - 20	30		25 [redacted]
VAS-28 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-28 Pressure	(psig)	10 - 20	30		[redacted] 14
VAS-29 Flow Rate	(scfm)	TBD	TBD		10.2
VAS-29 Pressure	(psig)	10 - 20	30		15
VAS-30 Flow Rate	(scfm)	TBD	TBD		10.5
VAS-30 Pressure	(psig)	10 - 20	30		6
VAS-31 Flow Rate	(scfm)	TBD	TBD		9.3
VAS-31 Pressure	(psig)	10 - 20	30		31
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.7	9.3
VAS-32 Pressure	(psig)	10 - 20	30	17	17
VAS-33 Flow Rate	(scfm)	TBD	TBD	11.0	11.0
VAS-33 Pressure	(psig)	10 - 20	30	18	18
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.5	9.4
VAS-34 Pressure	(psig)	10 - 20	30	20	20

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11-21-19/1100	T. Hall/LVL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	|	8.1
VAS-35 Pressure	(psig)	10 - 20	30	|	28
VAS-36 Flow Rate	(scfm)	TBD	TBD	|	9.2
VAS-36 Pressure	(psig)	10 - 20	30	|	18
VAS-37 Flow Rate	(scfm)	TBD	TBD	|	9.7
VAS-37 Pressure	(psig)	10 - 20	30	|	8
VAS-38 Flow Rate	(scfm)	TBD	TBD	|	7.7
VAS-38 Pressure	(psig)	10 - 20	30	|	8
VAS-39 Flow Rate	(scfm)	TBD	TBD	|	11.7
VAS-39 Pressure	(psig)	10 - 20	30	|	18
VAS-40 Flow Rate	(scfm)	TBD	TBD	|	9.1
VAS-40 Pressure	(psig)	10 - 20	30	|	21
VAS-41 Flow Rate	(scfm)	TBD	TBD	9.6	|
VAS-41 Pressure	(psig)	10 - 20	30	12	|
VAS-42A Flow Rate	(scfm)	TBD	TBD	10.2	10.1
VAS-42A Pressure	(psig)	10 - 20	30	13	15
VAS-43A Flow Rate	(scfm)	TBD	TBD	8.5	|
VAS-43A Pressure	(psig)	10 - 20	30	35	|
VAS-44A Flow Rate	(scfm)	TBD	TBD	6.4	|
VAS-44A Pressure	(psig)	10 - 20	30	35	|
VAS-45 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-45 Pressure	(psig)	10 - 20	30	|	|
VAS-46 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-46 Pressure	(psig)	10 - 20	30	|	|
VAS-47 Flow Rate	(scfm)	TBD	TBD	9.1	9.1
VAS-47 Pressure	(psig)	10 - 20	30	10	10
VAS-48 Flow Rate	(scfm)	TBD	TBD	8.7	8.7
VAS-48 Pressure	(psig)	10 - 20	30	10	10
VAS-49 Flow Rate	(scfm)	TBD	TBD	8.8	8.6
VAS-49 Pressure	(psig)	10 - 20	30	10	10
VAS-50 Flow Rate	(scfm)	TBD	TBD	8.6	8.4
VAS-50 Pressure	(psig)	10 - 20	30	10	10
VAS-51 Flow Rate	(scfm)	TBD	TBD	9.2	9.2
VAS-51 Pressure	(psig)	10 - 20	30	8	5

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11.21.19/1100	T.MAR/GVL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	8.5	8.5
VAS-52 Pressure	(psig)	10 - 20	30	9	9
VAS-53 Flow Rate	(scfm)	TBD	TBD	9.7	9.6
VAS-53 Pressure	(psig)	10 - 20	30	8	8
VAS-54 Flow Rate	(scfm)	TBD	TBD	9.2	9.3
VAS-54 Pressure	(psig)	10 - 20	30	8	8
VAS-55 Flow Rate	(scfm)	TBD	TBD	8.6	8.6
VAS-55 Pressure	(psig)	10 - 20	30	7	7
VAS-56 Flow Rate	(scfm)	TBD	TBD	7.6	7.5
VAS-56 Pressure	(psig)	10 - 20	30	1	2
VAS-57 Flow Rate	(scfm)	TBD	TBD	8.7	8.6
VAS-57 Pressure	(psig)	10 - 20	30	6	6
VAS-58 Flow Rate	(scfm)	TBD	TBD	8.5	8.4
VAS-58 Pressure	(psig)	10 - 20	30	8	8
VAS-59 Flow Rate	(scfm)	TBD	TBD	9.0	9.0
VAS-59 Pressure	(psig)	10 - 20	30	4	3
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.9	14.8
BCA-01 Pressure	(psig)	0 - 5	5	18	18
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.9	14.8
BCA-02 Pressure	(psig)	0 - 5	5	18	18

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Data
11/21/19	T. HALL/GVL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / (No)		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
—	—				
—	—				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / (No)		INSULATION GOOD
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: HEAT LAMPS + HEAT TRACE ON RECEIVER TANK TURNED OFF FOR MILDER TEMPS
VAS-04 STUCK OPEN UPON DEPARTURE

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11.27.19/1200	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA		YES
Air Compressor 1 Run Time	(hours)	NA	NA		20,668:34
Air Compressor 1 Temp	(F)	60 - 100	110		184
Air Compressor 1 Pressure	(psig)	90 - 110	100		101
Air Compressor 2 Run Time	(hours)	NA	NA		18,164:50
Air Compressor 2 Temp	(F)	60 - 100	110		188
Air Compressor 2 Pressure	(psig)	90 - 110	100		101
Receiver Tank Pressure	(psig)	90 - 110	100		112
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100		100
Manifold Temperature	(F)	60 - 100	110		88
Manifold Flow Rate	(scfm)	TBD	TBD		1900
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD		525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD		524.8
HAS-1 Valve Position	(%)	TBD	TBD		65.1
HAS-1 Pressure	(psig)	10 - 20	30		23
HAS-2 Target Flow Rate	(scfm)	TBD	TBD		502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD		502.2
HAS-2 Valve Position	(%)	TBD	TBD		37.4
HAS-2 Pressure	(psig)	10 - 20	30		24
HAS-3 Target Flow Rate	(scfm)	TBD	TBD		262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD		264.0
HAS-3 Valve Position	(%)	TBD	TBD		24.6
HAS-3 Pressure	(psig)	10 - 20	30		16

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11.27.19/Rev	T. Hoyle	———	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCME03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		9.6
VAS-01 Pressure	(psig)	10 - 20	30		22
VAS-02 Flow Rate	(scfm)	TBD	TBD		1.9
VAS-02 Pressure	(psig)	10 - 20	30		43
VAS-03 Flow Rate	(scfm)	TBD	TBD		1
VAS-03 Pressure	(psig)	10 - 20	30		1
VAS-04 Flow Rate	(scfm)	TBD	TBD		8.8
VAS-04 Pressure	(psig)	10 - 20	30		0
VAS-05 Flow Rate	(scfm)	TBD	TBD		9.3
VAS-05 Pressure	(psig)	10 - 20	30		5
VAS-06 Flow Rate	(scfm)	TBD	TBD		8.5
VAS-06 Pressure	(psig)	10 - 20	30		6
VAS-07 Flow Rate	(scfm)	TBD	TBD		9.2
VAS-07 Pressure	(psig)	10 - 20	30		7
VAS-08 Flow Rate	(scfm)	TBD	TBD		9.3
VAS-08 Pressure	(psig)	10 - 20	30		13
VAS-09 Flow Rate	(scfm)	TBD	TBD		9.0
VAS-09 Pressure	(psig)	10 - 20	30		5
VAS-10 Flow Rate	(scfm)	TBD	TBD		9.7
VAS-10 Pressure	(psig)	10 - 20	30		10
VAS-11 Flow Rate	(scfm)	TBD	TBD		12.4
VAS-11 Pressure	(psig)	10 - 20	30		19
VAS-12 Flow Rate	(scfm)	TBD	TBD		9.1
VAS-12 Pressure	(psig)	10 - 20	30		14
VAS-13 Flow Rate	(scfm)	TBD	TBD		
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD		
VAS-16 Pressure	(psig)	10 - 20	30		
VAS-17 Flow Rate	(scfm)	TBD	TBD		
VAS-17 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11.27.19/1200	T. HALL	———	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD		8.8
VAS-20 Pressure	(psig)	10 - 20	30		4
VAS-21 Flow Rate	(scfm)	TBD	TBD		
VAS-21 Pressure	(psig)	10 - 20	30		1
VAS-22 Flow Rate	(scfm)	TBD	TBD		9.8
VAS-22 Pressure	(psig)	10 - 20	30		20
VAS-23 Flow Rate	(scfm)	TBD	TBD		9.8
VAS-23 Pressure	(psig)	10 - 20	30		22
VAS-24 Flow Rate	(scfm)	TBD	TBD		8.5
VAS-24 Pressure	(psig)	10 - 20	30		22
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD		8.9
VAS-32 Pressure	(psig)	10 - 20	30		15
VAS-33 Flow Rate	(scfm)	TBD	TBD		10.4
VAS-33 Pressure	(psig)	10 - 20	30		17
VAS-34 Flow Rate	(scfm)	TBD	TBD		9.1
VAS-34 Pressure	(psig)	10 - 20	30		20

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11.27.19/1200	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-35 Pressure	(psig)	10 - 20	30		22
VAS-36 Flow Rate	(scfm)	TBD	TBD		9.5
VAS-36 Pressure	(psig)	10 - 20	30		15
VAS-37 Flow Rate	(scfm)	TBD	TBD		9.3
VAS-37 Pressure	(psig)	10 - 20	30		7
VAS-38 Flow Rate	(scfm)	TBD	TBD		6.6
VAS-38 Pressure	(psig)	10 - 20	30		5
VAS-39 Flow Rate	(scfm)	TBD	TBD		11.4
VAS-39 Pressure	(psig)	10 - 20	30		16
VAS-40 Flow Rate	(scfm)	TBD	TBD		9.6
VAS-40 Pressure	(psig)	10 - 20	30		20
VAS-41 Flow Rate	(scfm)	TBD	TBD		9.1
VAS-41 Pressure	(psig)	10 - 20	30		12
VAS-42A Flow Rate	(scfm)	TBD	TBD		9.9
VAS-42A Pressure	(psig)	10 - 20	30		13
VAS-43A Flow Rate	(scfm)	TBD	TBD		10.6
VAS-43A Pressure	(psig)	10 - 20	30		35
VAS-44A Flow Rate	(scfm)	TBD	TBD		6.2
VAS-44A Pressure	(psig)	10 - 20	30		34
VAS-45 Flow Rate	(scfm)	TBD	TBD		
VAS-45 Pressure	(psig)	10 - 20	30		
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD		9.0
VAS-47 Pressure	(psig)	10 - 20	30		10
VAS-48 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-48 Pressure	(psig)	10 - 20	30		9
VAS-49 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-49 Pressure	(psig)	10 - 20	30		10
VAS-50 Flow Rate	(scfm)	TBD	TBD		7.9
VAS-50 Pressure	(psig)	10 - 20	30		8
VAS-51 Flow Rate	(scfm)	TBD	TBD		8.9
VAS-51 Pressure	(psig)	10 - 20	30		5

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
11-27-19/1200	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-52 Pressure	(psig)	10 - 20	30		8
VAS-53 Flow Rate	(scfm)	TBD	TBD		7.4
VAS-53 Pressure	(psig)	10 - 20	30		4
VAS-54 Flow Rate	(scfm)	TBD	TBD		9.1
VAS-54 Pressure	(psig)	10 - 20	30		7
VAS-55 Flow Rate	(scfm)	TBD	TBD		8.0
VAS-55 Pressure	(psig)	10 - 20	30		6
VAS-56 Flow Rate	(scfm)	TBD	TBD		7.1
VAS-56 Pressure	(psig)	10 - 20	30		Ø
VAS-57 Flow Rate	(scfm)	TBD	TBD		8.2
VAS-57 Pressure	(psig)	10 - 20	30		4
VAS-58 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-58 Pressure	(psig)	10 - 20	30		8
VAS-59 Flow Rate	(scfm)	TBD	TBD		7.8
VAS-59 Pressure	(psig)	10 - 20	30		Ø
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD		14.1
BCA-01 Pressure	(psig)	0 - 5	5		18
BCA-02 Flow Rate	(scfm)	TBD	TBD		14.4
BCA-02 Pressure	(psig)	0 - 5	5		18

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Wakhor/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
11-27-19/1700	TYLER HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / (No)		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12/2/2019 1130	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	Yes	
Air Compressor 1 Run Time LOAD	(hours)	NA	NA	20785:18 / 17523:15	
Air Compressor 1 Temp	(F)	60 - 100	110	180	
Air Compressor 1 Pressure	(psig)	90 - 110	100	102	
Air Compressor 2 Run Time	(hours)	NA	NA	19281:53 / 16856:37	
Air Compressor 2 Temp	(F)	60 - 100	110	178	
Air Compressor 2 Pressure	(psig)	90 - 110	100	102	
Receiver Tank Pressure	(psig)	90 - 110	100	115	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	105	
Manifold Temperature	(F)	60 - 100	110	64	
Manifold Flow Rate	(scfm)	TBD	TBD	1756	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	524.0	
HAS-1 Valve Position	(%)	TBD	TBD	63.0	
HAS-1 Pressure	(psig)	10 - 20	30	22	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	502.5	
HAS-2 Valve Position	(%)	TBD	TBD	36.0	
HAS-2 Pressure	(psig)	10 - 20	30	26	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	261.3	
HAS-3 Valve Position	(%)	TBD	TBD	23.9	
HAS-3 Pressure	(psig)	10 - 20	30	17	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12/2/2019 1130	Scott Smida	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		
VAS-01 Pressure	(psig)	10 - 20	30		
VAS-02 Flow Rate	(scfm)	TBD	TBD		
VAS-02 Pressure	(psig)	10 - 20	30		
VAS-03 Flow Rate	(scfm)	TBD	TBD		
VAS-03 Pressure	(psig)	10 - 20	30		
VAS-04 Flow Rate	(scfm)	TBD	TBD		
VAS-04 Pressure	(psig)	10 - 20	30		
VAS-05 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-05 Pressure	(psig)	10 - 20	30	6	
VAS-06 Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-06 Pressure	(psig)	10 - 20	30	7	
VAS-07 Flow Rate	(scfm)	TBD	TBD	9.8	
VAS-07 Pressure	(psig)	10 - 20	30	8	
VAS-08 Flow Rate	(scfm)	TBD	TBD	9.7	
VAS-08 Pressure	(psig)	10 - 20	30	13	
VAS-09 Flow Rate	(scfm)	TBD	TBD	10.0	
VAS-09 Pressure	(psig)	10 - 20	30	8	
VAS-10 Flow Rate	(scfm)	TBD	TBD	10.6	
VAS-10 Pressure	(psig)	10 - 20	30	10	
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD		
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD		
VAS-16 Pressure	(psig)	10 - 20	30		
VAS-17 Flow Rate	(scfm)	TBD	TBD		
VAS-17 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12/2/2019 1130	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD		
VAS-20 Pressure	(psig)	10 - 20	30		
VAS-21 Flow Rate	(scfm)	TBD	TBD		
VAS-21 Pressure	(psig)	10 - 20	30		
VAS-22 Flow Rate	(scfm)	TBD	TBD	10.2	
VAS-22 Pressure	(psig)	10 - 20	30	21	
VAS-23 Flow Rate	(scfm)	TBD	TBD	10.3	
VAS-23 Pressure	(psig)	10 - 20	30	24	
VAS-24 Flow Rate	(scfm)	TBD	TBD	8.9	
VAS-24 Pressure	(psig)	10 - 20	30	24	
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.3	
VAS-32 Pressure	(psig)	10 - 20	30	18	
VAS-33 Flow Rate	(scfm)	TBD	TBD	10.8	
VAS-33 Pressure	(psig)	10 - 20	30	19	
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-34 Pressure	(psig)	10 - 20	30	21	

Increase 2psi, 9.4 SCFM

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12/2/2019 1130	Scott Smida	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-41 Pressure	(psig)	10 - 20	30	15	
VAS-42A Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-42A Pressure	(psig)	10 - 20	30	15	
VAS-43A Flow Rate	(scfm)	TBD	TBD	10.6 > decrease 2 psi, 10.1 SCFM	
VAS-43A Pressure	(psig)	10 - 20	30	~~30~~	
VAS-44A Flow Rate	(scfm)	TBD	TBD	7.2 > Add 2 psi 8.3 SCFM	
VAS-44A Pressure	(psig)	10 - 20	30	30	
VAS-45 Flow Rate	(scfm)	TBD	TBD	10.5	
VAS-45 Pressure	(psig)	10 - 20	30	20	
VAS-46 Flow Rate	(scfm)	TBD	TBD	—	
VAS-46 Pressure	(psig)	10 - 20	30	—	
VAS-47 Flow Rate	(scfm)	TBD	TBD	~~8.8~~	
VAS-47 Pressure	(psig)	10 - 20	30	9	
VAS-48 Flow Rate	(scfm)	TBD	TBD	~~8~~.9	
VAS-48 Pressure	(psig)	10 - 20	30	10	
VAS-49 Flow Rate	(scfm)	TBD	TBD	~~8~~.6	
VAS-49 Pressure	(psig)	10 - 20	30	11	
VAS-50 Flow Rate	(scfm)	TBD	TBD	~~8~~.7	
VAS-50 Pressure	(psig)	10 - 20	30	11	
VAS-51 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-51 Pressure	(psig)	10 - 20	30	~~8~~ 9	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12/2/2019 1130	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-52 Pressure	(psig)	10 - 20	30	9	
VAS-53 Flow Rate	(scfm)	TBD	TBD	7.6 – Adjust to 8.1 SCFM	
VAS-53 Pressure	(psig)	10 - 20	30	6	
VAS-54 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-54 Pressure	(psig)	10 - 20	30	9	
VAS-55 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-55 Pressure	(psig)	10 - 20	30	3	
VAS-56 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-56 Pressure	(psig)	10 - 20	30	2	
VAS-57 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-57 Pressure	(psig)	10 - 20	30	2	
VAS-58 Flow Rate	(scfm)	TBD	TBD	8.9	
VAS-58 Pressure	(psig)	10 - 20	30	3	
VAS-59 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-59 Pressure	(psig)	10 - 20	30	2	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.3	
BCA-01 Pressure	(psig)	0 - 5	5	20	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.8	
BCA-02 Pressure	(psig)	0 - 5	5	20	

Site Name	Site Location	Project Manager	Project Engineer	**Biosparging Operation and Maintenance Maintenance Log** *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
12/2/2019 1130	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	(Yes) / No	Yes / No	12/9/2019	
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / (No)	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	(Yes) / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12-9-19/0900	T. HALL/GVL	———	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	20,951:23	20,953:19
Air Compressor 1 Temp	(F)	60 - 100	110	181	180
Air Compressor 1 Pressure	(psig)	90 - 110	100	101	100
Air Compressor 2 Run Time	(hours)	NA	NA	18,447:39	18,449:41
Air Compressor 2 Temp	(F)	60 - 100	110	178	178
Air Compressor 2 Pressure	(psig)	90 - 110	100	101	101
Receiver Tank Pressure	(psig)	90 - 110	100	115	114
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	101	101
Manifold Temperature	(F)	60 - 100	110	58	58
Manifold Flow Rate	(scfm)	TBD	TBD	1924	1772
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525	525
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	525.3	525.7
HAS-1 Valve Position	(%)	TBD	TBD	61.6	59.2
HAS-1 Pressure	(psig)	10 - 20	30	23	18
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502	502
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	501.3	502.5
HAS-2 Valve Position	(%)	TBD	TBD	34.2	24.3
HAS-2 Pressure	(psig)	10 - 20	30	26	21
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	265.0	270.6
HAS-3 Valve Position	(%)	TBD	TBD	23.4	22.2
HAS-3 Pressure	(psig)	10 - 20	30	17	16

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

SYSTEM DOWN FOR 3.5 HOURS FOR SERVICE
RESTARTED AND RESTORED TO TARGET FLOWS

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12-9-19/0900	T. HALL/GH	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	14.0	10.1
VAS-01 Pressure	(psig)	10 - 20	30	21	28
VAS-02 Flow Rate	(scfm)	TBD	TBD	3.6	1.8
VAS-02 Pressure	(psig)	10 - 20	30	44	45
VAS-03 Flow Rate	(scfm)	TBD	TBD	11.0	7.0
VAS-03 Pressure	(psig)	10 - 20	30	22	22
VAS-04 Flow Rate	(scfm)	TBD	TBD		7.4
VAS-04 Pressure	(psig)	10 - 20	30		0
VAS-05 Flow Rate	(scfm)	TBD	TBD		9.2
VAS-05 Pressure	(psig)	10 - 20	30		5
VAS-06 Flow Rate	(scfm)	TBD	TBD		10.2
VAS-06 Pressure	(psig)	10 - 20	30		8
VAS-07 Flow Rate	(scfm)	TBD	TBD	10.5	10.3
VAS-07 Pressure	(psig)	10 - 20	30	6	7
VAS-08 Flow Rate	(scfm)	TBD	TBD	11.6	9.7
VAS-08 Pressure	(psig)	10 - 20	30	12	17
VAS-09 Flow Rate	(scfm)	TBD	TBD		10.7
VAS-09 Pressure	(psig)	10 - 20	30		8
VAS-10 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-10 Pressure	(psig)	10 - 20	30		12
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD	11.1	
VAS-13 Pressure	(psig)	10 - 20	30	20	
VAS-14 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-14 Pressure	(psig)	10 - 20	30	12	
VAS-15 Flow Rate	(scfm)	TBD	TBD	10.3	
VAS-15 Pressure	(psig)	10 - 20	30	8	
VAS-16 Flow Rate	(scfm)	TBD	TBD	14.0	12.1
VAS-16 Pressure	(psig)	10 - 20	30	13	15
VAS-17 Flow Rate	(scfm)	TBD	TBD	14.7	11.0
VAS-17 Pressure	(psig)	10 - 20	30	10	12

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12-9-19/0900	T.HALL/QVL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	10.6	
VAS-18 Pressure	(psig)	10 - 20	30	0	
VAS-19 Flow Rate	(scfm)	TBD	TBD	10.6	
VAS-19 Pressure	(psig)	10 - 20	30	14	
VAS-20 Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-20 Pressure	(psig)	10 - 20	30	5	
VAS-21 Flow Rate	(scfm)	TBD	TBD	10.7	
VAS-21 Pressure	(psig)	10 - 20	30	28	
VAS-22 Flow Rate	(scfm)	TBD	TBD	10.4	9.5
VAS-22 Pressure	(psig)	10 - 20	30	21	22
VAS-23 Flow Rate	(scfm)	TBD	TBD	10.5	7.9
VAS-23 Pressure	(psig)	10 - 20	30	24	28
VAS-24 Flow Rate	(scfm)	TBD	TBD	10.2	9.0
VAS-24 Pressure	(psig)	10 - 20	30	24	28
VAS-25 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-25 Pressure	(psig)	10 - 20	30	24	
VAS-26 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-26 Pressure	(psig)	10 - 20	30	34	
VAS-27 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-27 Pressure	(psig)	10 - 20	30	26	
VAS-28 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-28 Pressure	(psig)	10 - 20	30	16	
VAS-29 Flow Rate	(scfm)	TBD	TBD	10.5	
VAS-29 Pressure	(psig)	10 - 20	30	16	
VAS-30 Flow Rate	(scfm)	TBD	TBD	11.3	
VAS-30 Pressure	(psig)	10 - 20	30	8	
VAS-31 Flow Rate	(scfm)	TBD	TBD	10.5	
VAS-31 Pressure	(psig)	10 - 20	30	32	
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.7	9.1
VAS-32 Pressure	(psig)	10 - 20	30	18	18
VAS-33 Flow Rate	(scfm)	TBD	TBD	10.2	4.6
VAS-33 Pressure	(psig)	10 - 20	30	18	20
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.7	5.1
VAS-34 Pressure	(psig)	10 - 20	30	21	24

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12.9.19/0900	T.HALL/GVL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE0307049 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	4.2	
VAS-35 Pressure	(psig)	10 - 20	30	34	
VAS-36 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-36 Pressure	(psig)	10 - 20	30	18	
VAS-37 Flow Rate	(scfm)	TBD	TBD	10.2	
VAS-37 Pressure	(psig)	10 - 20	30	10	
VAS-38 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-38 Pressure	(psig)	10 - 20	30	10	
VAS-39 Flow Rate	(scfm)	TBD	TBD	11.1	
VAS-39 Pressure	(psig)	10 - 20	30	18	
VAS-40 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-40 Pressure	(psig)	10 - 20	30	23	
VAS-41 Flow Rate	(scfm)	TBD	TBD	|	9.7
VAS-41 Pressure	(psig)	10 - 20	30		10
VAS-42A Flow Rate	(scfm)	TBD	TBD	10.4	10.6
VAS-42A Pressure	(psig)	10 - 20	30	15	16
VAS-43A Flow Rate	(scfm)	TBD	TBD	|	5.8
VAS-43A Pressure	(psig)	10 - 20	30	|	36
VAS-44A Flow Rate	(scfm)	TBD	TBD	|	4.7
VAS-44A Pressure	(psig)	10 - 20	30	|	39
VAS-45 Flow Rate	(scfm)	TBD	TBD	11.1	10.8
VAS-45 Pressure	(psig)	10 - 20	30	20	20
VAS-46 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	9.5	9.0
VAS-47 Pressure	(psig)	10 - 20	30	10	10
VAS-48 Flow Rate	(scfm)	TBD	TBD	9.2	9.2
VAS-48 Pressure	(psig)	10 - 20	30	10	10
VAS-49 Flow Rate	(scfm)	TBD	TBD	8.7	9.0
VAS-49 Pressure	(psig)	10 - 20	30	12	12
VAS-50 Flow Rate	(scfm)	TBD	TBD	9.0	9.5
VAS-50 Pressure	(psig)	10 - 20	30	12	12
VAS-51 Flow Rate	(scfm)	TBD	TBD	9.6	10.1
VAS-51 Pressure	(psig)	10 - 20	30	8	10

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12-9-19/0900	T. HALL/AVL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	9.0	8.9
VAS-52 Pressure	(psig)	10 - 20	30	10	10
VAS-53 Flow Rate	(scfm)	TBD	TBD	8.5	8.8
VAS-53 Pressure	(psig)	10 - 20	30	7	7
VAS-54 Flow Rate	(scfm)	TBD	TBD	9.5	10.0
VAS-54 Pressure	(psig)	10 - 20	30	8	10
VAS-55 Flow Rate	(scfm)	TBD	TBD	7.9	9.5
VAS-55 Pressure	(psig)	10 - 20	30	8	10
VAS-56 Flow Rate	(scfm)	TBD	TBD	7.8	9.4
VAS-56 Pressure	(psig)	10 - 20	30	4	8
VAS-57 Flow Rate	(scfm)	TBD	TBD	8.6	9.3
VAS-57 Pressure	(psig)	10 - 20	30	6	~~10~~ 8
VAS-58 Flow Rate	(scfm)	TBD	TBD	9.0	9.3
VAS-58 Pressure	(psig)	10 - 20	30	8	10
VAS-59 Flow Rate	(scfm)	TBD	TBD	10.1	9.1
VAS-59 Pressure	(psig)	10 - 20	30	4	4
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.4	15.3
BCA-01 Pressure	(psig)	0 - 5	5	20	20
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.8	15.1
BCA-02 Pressure	(psig)	0 - 5	5	20	20

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
12-9-19/ 0900	T. HALL/GL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / No	Yes / No		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: AIRITE ONSITE TO COMPLETE COMPRESSOR PMs
5 GALCONS of OIL CHANGED IN BOTH AC#1 + AC#2. SAMPLE COLLECTED. ALL FILTERS CHANGED

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12/16/2019 1200	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	yes	
Air Compressor 1 Run Time / LOAD	(hours)	NA	NA	21117:49 / 17855:41	
Air Compressor 1 Temp	(F)	60 - 100	110	180	
Air Compressor 1 Pressure	(psig)	90 - 110	100	100	
Air Compressor 2 Run Time / LOAD	(hours)	NA	NA	18614:11 / 17189:03	
Air Compressor 2 Temp	(F)	60 - 100	110	181	
Air Compressor 2 Pressure	(psig)	90 - 110	100	101	
Receiver Tank Pressure	(psig)	90 - 110	100	110	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	100	
Manifold Temperature	(F)	60 - 100	110	82	
Manifold Flow Rate	(scfm)	TBD	TBD	1930	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	528.6	
HAS-1 Valve Position	(%)	TBD	TBD	64.7	
HAS-1 Pressure	(psig)	10 - 20	30	64	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	502.4	
HAS-2 Valve Position	(%)	TBD	TBD	37.4	
HAS-2 Pressure	(psig)	10 - 20	30	26	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	262.8	
HAS-3 Valve Position	(%)	TBD	TBD	23.8	
HAS-3 Pressure	(psig)	10 - 20	30	17	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Selected VAS wells to address LNAPL in wells MW11, MW20, and RW11. VAS wells operate 24/7 and flows will gradually be increased to 15 SCFM target flow over next several weeks.
PSI increased to 2 psi. try to increase flow

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12/16/2019 1215	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	10.7	
VAS-01 Pressure	(psig)	10 - 20	30	17	
VAS-02 Flow Rate	(scfm)	TBD	TBD	4.3	
VAS-02 Pressure	(psig)	10 - 20	30	43	
VAS-03 Flow Rate	(scfm)	TBD	TBD	10.3	
VAS-03 Pressure	(psig)	10 - 20	30	21	
VAS-04 Flow Rate	(scfm)	TBD	TBD	9.7	
VAS-04 Pressure	(psig)	10 - 20	30	1	
VAS-05 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-05 Pressure	(psig)	10 - 20	30	4	
VAS-06 Flow Rate	(scfm)	TBD	TBD	—	
VAS-06 Pressure	(psig)	10 - 20	30	—	
VAS-07 Flow Rate	(scfm)	TBD	TBD	10.8	
VAS-07 Pressure	(psig)	10 - 20	30	4	
VAS-08 Flow Rate	(scfm)	TBD	TBD	11.1	
VAS-08 Pressure	(psig)	10 - 20	30	11	
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD	10.2	
VAS-11 Pressure	(psig)	10 - 20	30	18	
VAS-12 Flow Rate	(scfm)	TBD	TBD	11.4	
VAS-12 Pressure	(psig)	10 - 20	30	17	
VAS-13 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-13 Pressure	(psig)	10 - 20	30	21	
VAS-14 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-14 Pressure	(psig)	10 - 20	30	12	
VAS-15 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-15 Pressure	(psig)	10 - 20	30	6	
VAS-16 Flow Rate	(scfm)	TBD	TBD	10.7	
VAS-16 Pressure	(psig)	10 - 20	30	11	
VAS-17 Flow Rate	(scfm)	TBD	TBD	11.2	
VAS-17 Pressure	(psig)	10 - 20	30	1	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12/16/2019 1345	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-18 Pressure	(psig)	10 - 20	30	0	
VAS-19 Flow Rate	(scfm)	TBD	TBD	9.7	
VAS-19 Pressure	(psig)	10 - 20	30	14	
VAS-20 Flow Rate	(scfm)	TBD	TBD	9.9	
VAS-20 Pressure	(psig)	10 - 20	30	4	
VAS-21 Flow Rate	(scfm)	TBD	TBD	7.9	
VAS-21 Pressure	(psig)	10 - 20	30	26	
VAS-22 Flow Rate	(scfm)	TBD	TBD	10.3	
VAS-22 Pressure	(psig)	10 - 20	30	19	
VAS-23 Flow Rate	(scfm)	TBD	TBD	11.2	
VAS-23 Pressure	(psig)	10 - 20	30	13	
VAS-24 Flow Rate	(scfm)	TBD	TBD	10.7	
VAS-24 Pressure	(psig)	10 - 20	30	22	
VAS-25 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-25 Pressure	(psig)	10 - 20	30	24	
VAS-26 Flow Rate	(scfm)	TBD	TBD	5.5	
VAS-26 Pressure	(psig)	10 - 20	30	34	
VAS-27 Flow Rate	(scfm)	TBD	TBD	6.2	
VAS-27 Pressure	(psig)	10 - 20	30	31	
VAS-28 Flow Rate	(scfm)	TBD	TBD	9.6	
VAS-28 Pressure	(psig)	10 - 20	30	17	
VAS-29 Flow Rate	(scfm)	TBD	TBD	10.0	
VAS-29 Pressure	(psig)	10 - 20	30	15	
VAS-30 Flow Rate	(scfm)	TBD	TBD	10.3	
VAS-30 Pressure	(psig)	10 - 20	30	5	
VAS-31 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-31 Pressure	(psig)	10 - 20	30	33	
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.9	
VAS-32 Pressure	(psig)	10 - 20	30	17	
VAS-33 Flow Rate	(scfm)	TBD	TBD	9.6	
VAS-33 Pressure	(psig)	10 - 20	30	17	
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-34 Pressure	(psig)	10 - 20	30	20	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12/16/2019 1215	Scott Sumrall	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	—	
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD		
VAS-41 Pressure	(psig)	10 - 20	30		
VAS-42A Flow Rate	(scfm)	TBD	TBD	10.5	
VAS-42A Pressure	(psig)	10 - 20	30	14	
VAS-43A Flow Rate	(scfm)	TBD	TBD		
VAS-43A Pressure	(psig)	10 - 20	30		
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-45 Pressure	(psig)	10 - 20	30	19	
VAS-46 Flow Rate	(scfm)	TBD	TBD	—	
VAS-46 Pressure	(psig)	10 - 20	30	—	
VAS-47 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-47 Pressure	(psig)	10 - 20	30	10	
VAS-48 Flow Rate	(scfm)	TBD	TBD	10.0	
VAS-48 Pressure	(psig)	10 - 20	30	8	
VAS-49 Flow Rate	(scfm)	TBD	TBD	10.0	
VAS-49 Pressure	(psig)	10 - 20	30	11	
VAS-50 Flow Rate	(scfm)	TBD	TBD	10.0	
VAS-50 Pressure	(psig)	10 - 20	30	11	
VAS-51 Flow Rate	(scfm)	TBD	TBD	10.2	
VAS-51 Pressure	(psig)	10 - 20	30	7	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12/16/2019 1215	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-52 Pressure	(psig)	10 - 20	30	9	
VAS-53 Flow Rate	(scfm)	TBD	TBD	10.6	
VAS-53 Pressure	(psig)	10 - 20	30	6	
VAS-54 Flow Rate	(scfm)	TBD	TBD	10.4	
VAS-54 Pressure	(psig)	10 - 20	30	8	
VAS-55 Flow Rate	(scfm)	TBD	TBD	10.4	
VAS-55 Pressure	(psig)	10 - 20	30	3	
VAS-56 Flow Rate	(scfm)	TBD	TBD	10.7	
VAS-56 Pressure	(psig)	10 - 20	30	1	
VAS-57 Flow Rate	(scfm)	TBD	TBD	10.8	
VAS-57 Pressure	(psig)	10 - 20	30	3	
VAS-58 Flow Rate	(scfm)	TBD	TBD	10.0	
VAS-58 Pressure	(psig)	10 - 20	30	4	
VAS-59 Flow Rate	(scfm)	TBD	TBD	10.5	
VAS-59 Pressure	(psig)	10 - 20	30	2	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	Not operating, down for sampling event	
BCA-01 Pressure	(psig)	0 - 5	5		
BCA-02 Flow Rate	(scfm)	TBD	TBD		
BCA-02 Pressure	(psig)	0 - 5	5		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
12/16/2019 1215	SCOTT SMITH	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / No		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	(Yes) / No	Yes / No	completed 12/5/19	
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	(Yes) / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	Yes / (No)	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

- drained inline filter housings
- drained secondary containment
- inspected compressor heat lamps / heating system
- increased flows to select VES wells

} see separate notes for details

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12-23-19/1100	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	
Air Compressor 1 Run Time	(hours)	NA	NA	21,286:55	
Air Compressor 1 Temp	(F)	60 - 100	110	181	
Air Compressor 1 Pressure	(psig)	90 - 110	100	97	
Air Compressor 2 Run Time	(hours)	NA	NA	18,783:16	
Air Compressor 2 Temp	(F)	60 - 100	110	182	
Air Compressor 2 Pressure	(psig)	90 - 110	100	98	
Receiver Tank Pressure	(psig)	90 - 110	100	111	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	98	
Manifold Temperature	(F)	60 - 100	110	66	
Manifold Flow Rate	(scfm)	TBD	TBD	1939	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	522.8	
HAS-1 Valve Position	(%)	TBD	TBD	63.2	
HAS-1 Pressure	(psig)	10 - 20	30	23	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	500.9	
HAS-2 Valve Position	(%)	TBD	TBD	35.4	
HAS-2 Pressure	(psig)	10 - 20	30	26	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	261.8	
HAS-3 Valve Position	(%)	TBD	TBD	23.8	
HAS-3 Pressure	(psig)	10 - 20	30	18	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12-23-19/1110	T. Hall		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-01 Pressure	(psig)	10 - 20	30	18	
VAS-02 Flow Rate	(scfm)	TBD	TBD	4.4	
VAS-02 Pressure	(psig)	10 - 20	30	43	
VAS-03 Flow Rate	(scfm)	TBD	TBD	11.7	
VAS-03 Pressure	(psig)	10 - 20	30	20	
VAS-04 Flow Rate	(scfm)	TBD	TBD	5.1	
VAS-04 Pressure	(psig)	10 - 20	30	0	
VAS-05 Flow Rate	(scfm)	TBD	TBD	7.1	
VAS-05 Pressure	(psig)	10 - 20	30	4	
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD	11.1	
VAS-07 Pressure	(psig)	10 - 20	30	5	
VAS-08 Flow Rate	(scfm)	TBD	TBD	10.8	
VAS-08 Pressure	(psig)	10 - 20	30	13	
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD	15.2	
VAS-13 Pressure	(psig)	10 - 20	30	20	
VAS-14 Flow Rate	(scfm)	TBD	TBD	11.1	
VAS-14 Pressure	(psig)	10 - 20	30	12	
VAS-15 Flow Rate	(scfm)	TBD	TBD	9.9	
VAS-15 Pressure	(psig)	10 - 20	30	7	
VAS-16 Flow Rate	(scfm)	TBD	TBD	10.6	
VAS-16 Pressure	(psig)	10 - 20	30	11	
VAS-17 Flow Rate	(scfm)	TBD	TBD	11.0	
VAS-17 Pressure	(psig)	10 - 20	30	4	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12-23-19/ 1100	T. Hall		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	10.7	
VAS-18 Pressure	(psig)	10 - 20	30	~~10~~ 0	
VAS-19 Flow Rate	(scfm)	TBD	TBD	10.6	
VAS-19 Pressure	(psig)	10 - 20	30	15	
VAS-20 Flow Rate	(scfm)	TBD	TBD	10.2	
VAS-20 Pressure	(psig)	10 - 20	30	5	
VAS-21 Flow Rate	(scfm)	TBD	TBD	10.4	
VAS-21 Pressure	(psig)	10 - 20	30	26	
VAS-22 Flow Rate	(scfm)	TBD	TBD	10.7	
VAS-22 Pressure	(psig)	10 - 20	30	20	
VAS-23 Flow Rate	(scfm)	TBD	TBD	11.1	
VAS-23 Pressure	(psig)	10 - 20	30	23	
VAS-24 Flow Rate	(scfm)	TBD	TBD	10.6	
VAS-24 Pressure	(psig)	10 - 20	30	24	
VAS-25 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-25 Pressure	(psig)	10 - 20	30	25	
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-27 Pressure	(psig)	10 - 20	30	28	
VAS-28 Flow Rate	(scfm)	TBD	TBD	9.7	
VAS-28 Pressure	(psig)	10 - 20	30	16	
VAS-29 Flow Rate	(scfm)	TBD	TBD	10.0	
VAS-29 Pressure	(psig)	10 - 20	30	15	
VAS-30 Flow Rate	(scfm)	TBD	TBD	10.9	
VAS-30 Pressure	(psig)	10 - 20	30	8	
VAS-31 Flow Rate	(scfm)	TBD	TBD	10.8	
VAS-31 Pressure	(psig)	10 - 20	30	32	
VAS-32 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-32 Pressure	(psig)	10 - 20	30	17	
VAS-33 Flow Rate	(scfm)	TBD	TBD	10.2	
VAS-33 Pressure	(psig)	10 - 20	30	18	
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.8	
VAS-34 Pressure	(psig)	10 - 20	30	21	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
10.23.19/1100	T. HALL/GIL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	6.3	
VAS-35 Pressure	(psig)	10 - 20	30	34	
VAS-36 Flow Rate	(scfm)	TBD	TBD	6.2	
VAS-36 Pressure	(psig)	10 - 20	30	22	
VAS-37 Flow Rate	(scfm)	TBD	TBD	9.8	
VAS-37 Pressure	(psig)	10 - 20	30	10	
VAS-38 Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-38 Pressure	(psig)	10 - 20	30	12	
VAS-39 Flow Rate	(scfm)	TBD	TBD	9.3	
VAS-39 Pressure	(psig)	10 - 20	30	20	
VAS-40 Flow Rate	(scfm)	TBD	TBD	5.4	
VAS-40 Pressure	(psig)	10 - 20	30	24	
VAS-41 Flow Rate	(scfm)	TBD	TBD		
VAS-41 Pressure	(psig)	10 - 20	30		
VAS-42A Flow Rate	(scfm)	TBD	TBD	10.6	
VAS-42A Pressure	(psig)	10 - 20	30	15	
VAS-43A Flow Rate	(scfm)	TBD	TBD		
VAS-43A Pressure	(psig)	10 - 20	30		
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD		
VAS-45 Pressure	(psig)	10 - 20	30		
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	10.4	
VAS-47 Pressure	(psig)	10 - 20	30	10	
VAS-48 Flow Rate	(scfm)	TBD	TBD	10.6	
VAS-48 Pressure	(psig)	10 - 20	30	10	
VAS-49 Flow Rate	(scfm)	TBD	TBD	10.5	
VAS-49 Pressure	(psig)	10 - 20	30	10	
VAS-50 Flow Rate	(scfm)	TBD	TBD	10.4	
VAS-50 Pressure	(psig)	10 - 20	30	12	
VAS-51 Flow Rate	(scfm)	TBD	TBD	10.6	
VAS-51 Pressure	(psig)	10 - 20	30	8	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12-23-14/100	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	10.6	
VAS-52 Pressure	(psig)	10 - 20	30	11	
VAS-53 Flow Rate	(scfm)	TBD	TBD	10.9	
VAS-53 Pressure	(psig)	10 - 20	30	8	
VAS-54 Flow Rate	(scfm)	TBD	TBD	10.6	
VAS-54 Pressure	(psig)	10 - 20	30	10	
VAS-55 Flow Rate	(scfm)	TBD	TBD	10.3	
VAS-55 Pressure	(psig)	10 - 20	30	8	
VAS-56 Flow Rate	(scfm)	TBD	TBD	10.5	
VAS-56 Pressure	(psig)	10 - 20	30	6	
VAS-57 Flow Rate	(scfm)	TBD	TBD	11.0	
VAS-57 Pressure	(psig)	10 - 20	30	10	
VAS-58 Flow Rate	(scfm)	TBD	TBD	10.0	
VAS-58 Pressure	(psig)	10 - 20	30	10	
VAS-59 Flow Rate	(scfm)	TBD	TBD	10.2	
VAS-59 Pressure	(psig)	10 - 20	30	8	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.9	
BCA-01 Pressure	(psig)	0 - 5	5	18	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.8	
BCA-02 Pressure	(psig)	0 - 5	5	20	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
12-23-19/ 1100	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		WTL HIGH FROM RAIN
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / (No)		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: 2.25" OF RAIN SINCE 12/20/19
VAS-26 STILL OFF UNTIL REGULATOR CAN BE FIXED
VAS-5 STILL HAS BAD SOLENOID. STUCK OPEN

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12.30.19	T. Hall	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	21,454:19	21,458:10
Air Compressor 1 Temp	(F)	60 - 100	110	182	182
Air Compressor 1 Pressure	(psig)	90 - 110	100	97	97
Air Compressor 2 Run Time	(hours)	NA	NA	~~21,454:19~~ 18,950:41	18,954:32
Air Compressor 2 Temp	(F)	60 - 100	110	191	190
Air Compressor 2 Pressure	(psig)	90 - 110	100	98	97
Receiver Tank Pressure	(psig)	90 - 110	100	109	110
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	98	99
Manifold Temperature	(F)	60 - 100	110	78	80
Manifold Flow Rate	(scfm)	TBD	TBD	1946	1858
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	521.0	524.2
HAS-1 Valve Position	(%)	TBD	TBD	65.3	64.7
HAS-1 Pressure	(psig)	10 - 20	30	24	24
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	502
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	502.7	501.8
HAS-2 Valve Position	(%)	TBD	TBD	37.2	38.2
HAS-2 Pressure	(psig)	10 - 20	30	26	26
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	266.1	265.2
HAS-3 Valve Position	(%)	TBD	TBD	24.1	25.2
HAS-3 Pressure	(psig)	10 - 20	30	18	18

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 Lewis Drive, Belton, South Carolina
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12 30.19/ 1000	T. Hall	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	9.6	9.7
VAS-01 Pressure	(psig)	10 - 20	30	18	18
VAS-02 Flow Rate	(scfm)	TBD	TBD	4.4	4.4
VAS-02 Pressure	(psig)	10 - 20	30	42	42
VAS-03 Flow Rate	(scfm)	TBD	TBD	10.8	10.6
VAS-03 Pressure	(psig)	10 - 20	30	20	20
VAS-04 Flow Rate	(scfm)	TBD	TBD	5.0	4.9
VAS-04 Pressure	(psig)	10 - 20	30	0	0
VAS-05 Flow Rate	(scfm)	TBD	TBD	6.8	6.7
VAS-05 Pressure	(psig)	10 - 20	30	4	4
VAS-06 Flow Rate	(scfm)	TBD	TBD	~~18~~ |	|
VAS-06 Pressure	(psig)	10 - 20	30	|	|
VAS-07 Flow Rate	(scfm)	TBD	TBD	10.8	10.8
VAS-07 Pressure	(psig)	10 - 20	30	4	4
VAS-08 Flow Rate	(scfm)	TBD	TBD	11.6	10.4
VAS-08 Pressure	(psig)	10 - 20	30	12	12
VAS-09 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-09 Pressure	(psig)	10 - 20	30	|	|
VAS-10 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-10 Pressure	(psig)	10 - 20	30	|	|
VAS-11 Flow Rate	(scfm)	TBD	TBD	6.6	|
VAS-11 Pressure	(psig)	10 - 20	30	19	|
VAS-12 Flow Rate	(scfm)	TBD	TBD	6.5	|
VAS-12 Pressure	(psig)	10 - 20	30	12	|
VAS-13 Flow Rate	(scfm)	TBD	TBD	10.6	12.1
VAS-13 Pressure	(psig)	10 - 20	30	20	20
VAS-14 Flow Rate	(scfm)	TBD	TBD	10.0	10.5
VAS-14 Pressure	(psig)	10 - 20	30	12	12
VAS-15 Flow Rate	(scfm)	TBD	TBD	9.5	9.6
VAS-15 Pressure	(psig)	10 - 20	30	6	6
VAS-16 Flow Rate	(scfm)	TBD	TBD	10.2	10.2
VAS-16 Pressure	(psig)	10 - 20	30	11	11
VAS-17 Flow Rate	(scfm)	TBD	TBD	10.7	10.6
VAS-17 Pressure	(psig)	10 - 20	30	0	0

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12-30-19/1000	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	9.9	9.4
VAS-18 Pressure	(psig)	10 - 20	30	0	0
VAS-19 Flow Rate	(scfm)	TBD	TBD	9.5	10.4
VAS-19 Pressure	(psig)	10 - 20	30	14	14
VAS-20 Flow Rate	(scfm)	TBD	TBD	9.8	9.8
VAS-20 Pressure	(psig)	10 - 20	30	4	4
VAS-21 Flow Rate	(scfm)	TBD	TBD	8.0	9.2
VAS-21 Pressure	(psig)	10 - 20	30	25	25
VAS-22 Flow Rate	(scfm)	TBD	TBD	10.1	10.0
VAS-22 Pressure	(psig)	10 - 20	30	20	20
VAS-23 Flow Rate	(scfm)	TBD	TBD	10.0	10.0
VAS-23 Pressure	(psig)	10 - 20	30	23	23
VAS-24 Flow Rate	(scfm)	TBD	TBD	9.7	9.7
VAS-24 Pressure	(psig)	10 - 20	30	23	23
VAS-25 Flow Rate	(scfm)	TBD	TBD	7.9	9.8
VAS-25 Pressure	(psig)	10 - 20	30	22	22
VAS-26 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-26 Pressure	(psig)	10 - 20	30	|	|
VAS-27 Flow Rate	(scfm)	TBD	TBD	8.0	8.8
VAS-27 Pressure	(psig)	10 - 20	30	27	27
VAS-28 Flow Rate	(scfm)	TBD	TBD	8.9	8.8
VAS-28 Pressure	(psig)	10 - 20	30	15	15
VAS-29 Flow Rate	(scfm)	TBD	TBD	9.8	9.7
VAS-29 Pressure	(psig)	10 - 20	30	15	15
VAS-30 Flow Rate	(scfm)	TBD	TBD	10.3	10.3
VAS-30 Pressure	(psig)	10 - 20	30	5	5
VAS-31 Flow Rate	(scfm)	TBD	TBD	10.2	10.7
VAS-31 Pressure	(psig)	10 - 20	30	32	32
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.0	8.9
VAS-32 Pressure	(psig)	10 - 20	30	18	18
VAS-33 Flow Rate	(scfm)	TBD	TBD	9.2	9.1
VAS-33 Pressure	(psig)	10 - 20	30	18	18
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.5	9.4
VAS-34 Pressure	(psig)	10 - 20	30	20	20

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12.30.19/ 1000	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		11.5
VAS-35 Pressure	(psig)	10 - 20	30		28
VAS-36 Flow Rate	(scfm)	TBD	TBD		9.1
VAS-36 Pressure	(psig)	10 - 20	30		20
VAS-37 Flow Rate	(scfm)	TBD	TBD		9.4
VAS-37 Pressure	(psig)	10 - 20	30		8
VAS-38 Flow Rate	(scfm)	TBD	TBD		9.1
VAS-38 Pressure	(psig)	10 - 20	30		10
VAS-39 Flow Rate	(scfm)	TBD	TBD		9.2
VAS-39 Pressure	(psig)	10 - 20	30		18
VAS-40 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-40 Pressure	(psig)	10 - 20	30		21
VAS-41 Flow Rate	(scfm)	TBD	TBD		"
VAS-41 Pressure	(psig)	10 - 20	30		"
VAS-42A Flow Rate	(scfm)	TBD	TBD	10.4	10.5
VAS-42A Pressure	(psig)	10 - 20	30	13	13
VAS-43A Flow Rate	(scfm)	TBD	TBD		
VAS-43A Pressure	(psig)	10 - 20	30		
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD	9.3	
VAS-45 Pressure	(psig)	10 - 20	30	20	
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	10.1	10.1
VAS-47 Pressure	(psig)	10 - 20	30	11	11
VAS-48 Flow Rate	(scfm)	TBD	TBD	10.3	10.3
VAS-48 Pressure	(psig)	10 - 20	30	10	10
VAS-49 Flow Rate	(scfm)	TBD	TBD	10.1	10.2
VAS-49 Pressure	(psig)	10 - 20	30	11	11
VAS-50 Flow Rate	(scfm)	TBD	TBD	10.3	10.4
VAS-50 Pressure	(psig)	10 - 20	30	12	12
VAS-51 Flow Rate	(scfm)	TBD	TBD	9.6	9.6
VAS-51 Pressure	(psig)	10 - 20	30	8	8

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
12.30.19/1100	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	10.3	10.3
VAS-52 Pressure	(psig)	10 - 20	30	10	10
VAS-53 Flow Rate	(scfm)	TBD	TBD	10.7	10.8
VAS-53 Pressure	(psig)	10 - 20	30	8	8
VAS-54 Flow Rate	(scfm)	TBD	TBD	10.5	10.6
VAS-54 Pressure	(psig)	10 - 20	30	8	8
VAS-55 Flow Rate	(scfm)	TBD	TBD	9.7	9.8
VAS-55 Pressure	(psig)	10 - 20	30	6	6
VAS-56 Flow Rate	(scfm)	TBD	TBD	9.9	9.8
VAS-56 Pressure	(psig)	10 - 20	30	2	2
VAS-57 Flow Rate	(scfm)	TBD	TBD	10.6	10.5
VAS-57 Pressure	(psig)	10 - 20	30	8	8
VAS-58 Flow Rate	(scfm)	TBD	TBD	9.7	9.8
VAS-58 Pressure	(psig)	10 - 20	30	10	10
VAS-59 Flow Rate	(scfm)	TBD	TBD	10.6	10.5
VAS-59 Pressure	(psig)	10 - 20	30	8	8
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.5	14.9
BCA-01 Pressure	(psig)	0 - 5	5	18	18
BCA-02 Flow Rate	(scfm)	TBD	TBD	15.1	15.2
BCA-02 Pressure	(psig)	0 - 5	5	19	19

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
12/30/19/1030	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		WTL HIGH IN BL AREA
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / (No)		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: 1" OF RAIN SINCE 12/23/19
VAS-5 STUCK OPEN, VAS-26 REMAINS OFF DUE TO BAD REGULATOR
SW-01 DEPTH IS 1.8'. BEAVER DAM IN CULVERT BLOCKING 3/4 OF CULVER

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1.6.20/1000	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	21,621:04	21,623:36
Air Compressor 1 Temp	(F)	60 - 100	110	181	182
Air Compressor 1 Pressure	(psig)	90 - 110	100	101	97
Air Compressor 2 Run Time	(hours)	NA	NA	19,117:25	19,119:57
Air Compressor 2 Temp	(F)	60 - 100	110	179	185
Air Compressor 2 Pressure	(psig)	90 - 110	100	101	97
Receiver Tank Pressure	(psig)	90 - 110	100	112	109
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	100	98
Manifold Temperature	(F)	60 - 100	110	70	74
Manifold Flow Rate	(scfm)	TBD	TBD	1845	2009
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	523.5	524.0
HAS-1 Valve Position	(%)	TBD	TBD	64.5	64.4
HAS-1 Pressure	(psig)	10 - 20	30	23	23
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	501.4	500.6
HAS-2 Valve Position	(%)	TBD	TBD	37.3	36.3
HAS-2 Pressure	(psig)	10 - 20	30	26	26
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	261.3	259.6
HAS-3 Valve Position	(%)	TBD	TBD	23.6	24.2
HAS-3 Pressure	(psig)	10 - 20	30	18	18

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

VAS WELLS OPERATING @ 24/7 INCREASED ~ 2 SCFM.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*	
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT		
Date & Time	**O&M Technician #1**	**O&M Technician #2**	**Equipment Type**	**Equipment Model**	**Permits**
1-6-20/1000	T. Hill	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	9.9	12.0
VAS-01 Pressure	(psig)	10 - 20	30	20	20
VAS-02 Flow Rate	(scfm)	TBD	TBD	4.5	4.5
VAS-02 Pressure	(psig)	10 - 20	30	43	43
VAS-03 Flow Rate	(scfm)	TBD	TBD	12.1	13.3
VAS-03 Pressure	(psig)	10 - 20	30	20	20
VAS-04 Flow Rate	(scfm)	TBD	TBD	5.1	6.6
VAS-04 Pressure	(psig)	10 - 20	30	0	0
VAS-05 Flow Rate	(scfm)	TBD	TBD	6.7	10.0
VAS-05 Pressure	(psig)	10 - 20	30	5	5
VAS-06 Flow Rate	(scfm)	TBD	TBD	9.8	1
VAS-06 Pressure	(psig)	10 - 20	30	9	
VAS-07 Flow Rate	(scfm)	TBD	TBD	11.1	12.0
VAS-07 Pressure	(psig)	10 - 20	30	7	6
VAS-08 Flow Rate	(scfm)	TBD	TBD	10.6	12.3
VAS-08 Pressure	(psig)	10 - 20	30	13	15
VAS-09 Flow Rate	(scfm)	TBD	TBD	10.7	-
VAS-09 Pressure	(psig)	10 - 20	30	10	
VAS-10 Flow Rate	(scfm)	TBD	TBD	3.4	
VAS-10 Pressure	(psig)	10 - 20	30	17	
VAS-11 Flow Rate	(scfm)	TBD	TBD	5.9	
VAS-11 Pressure	(psig)	10 - 20	30	20	
VAS-12 Flow Rate	(scfm)	TBD	TBD	7.2	
VAS-12 Pressure	(psig)	10 - 20	30	15	
VAS-13 Flow Rate	(scfm)	TBD	TBD		11.8
VAS-13 Pressure	(psig)	10 - 20	30		20
VAS-14 Flow Rate	(scfm)	TBD	TBD		10.4
VAS-14 Pressure	(psig)	10 - 20	30		12
VAS-15 Flow Rate	(scfm)	TBD	TBD		9.9
VAS-15 Pressure	(psig)	10 - 20	30		7
VAS-16 Flow Rate	(scfm)	TBD	TBD	10.6	12.1
VAS-16 Pressure	(psig)	10 - 20	30	11	12
VAS-17 Flow Rate	(scfm)	TBD	TBD	10.9	12.0
VAS-17 Pressure	(psig)	10 - 20	30	4	4

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1-6-20/1000	T. Hall	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		10.2
VAS-18 Pressure	(psig)	10 - 20	30		0
VAS-19 Flow Rate	(scfm)	TBD	TBD		10.7
VAS-19 Pressure	(psig)	10 - 20	30		13
VAS-20 Flow Rate	(scfm)	TBD	TBD		10.0
VAS-20 Pressure	(psig)	10 - 20	30		5
VAS-21 Flow Rate	(scfm)	TBD	TBD		9.9
VAS-21 Pressure	(psig)	10 - 20	30		27
VAS-22 Flow Rate	(scfm)	TBD	TBD	10.5	10.3
VAS-22 Pressure	(psig)	10 - 20	30	21	20
VAS-23 Flow Rate	(scfm)	TBD	TBD	10.9	10.8
VAS-23 Pressure	(psig)	10 - 20	30	24	23
VAS-24 Flow Rate	(scfm)	TBD	TBD	10.3	10.2
VAS-24 Pressure	(psig)	10 - 20	30	25	25
VAS-25 Flow Rate	(scfm)	TBD	TBD		9.1
VAS-25 Pressure	(psig)	10 - 20	30		22
VAS-26 Flow Rate	(scfm)	TBD	TBD		|
VAS-26 Pressure	(psig)	10 - 20	30		|
VAS-27 Flow Rate	(scfm)	TBD	TBD		8.3
VAS-27 Pressure	(psig)	10 - 20	30		~~25~~ 28
VAS-28 Flow Rate	(scfm)	TBD	TBD		9.5
VAS-28 Pressure	(psig)	10 - 20	30		15
VAS-29 Flow Rate	(scfm)	TBD	TBD		9.9
VAS-29 Pressure	(psig)	10 - 20	30		13
VAS-30 Flow Rate	(scfm)	TBD	TBD		10.7
VAS-30 Pressure	(psig)	10 - 20	30		5
VAS-31 Flow Rate	(scfm)	TBD	TBD		11.4
VAS-31 Pressure	(psig)	10 - 20	30		33
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.3	9.0
VAS-32 Pressure	(psig)	10 - 20	30	19	18
VAS-33 Flow Rate	(scfm)	TBD	TBD	9.9	9.9
VAS-33 Pressure	(psig)	10 - 20	30	18	18
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.7	9.6
VAS-34 Pressure	(psig)	10 - 20	30	22	21

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1.6.20/1000	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	10.4	9.1
VAS-35 Pressure	(psig)	10 - 20	30	30	30
VAS-36 Flow Rate	(scfm)	TBD	TBD	10.1	8.7
VAS-36 Pressure	(psig)	10 - 20	30	18	20
VAS-37 Flow Rate	(scfm)	TBD	TBD	9.8	9.6
VAS-37 Pressure	(psig)	10 - 20	30	10	10
VAS-38 Flow Rate	(scfm)	TBD	TBD	4.6	9.8
VAS-38 Pressure	(psig)	10 - 20	30	10	11
VAS-39 Flow Rate	(scfm)	TBD	TBD	9.5	9.0
VAS-39 Pressure	(psig)	10 - 20	30	18	19
VAS-40 Flow Rate	(scfm)	TBD	TBD	10.1	8.3
VAS-40 Pressure	(psig)	10 - 20	30	22	21
VAS-41 Flow Rate	(scfm)	TBD	TBD	7.8	↓
VAS-41 Pressure	(psig)	10 - 20	30	16	↓
VAS-42A Flow Rate	(scfm)	TBD	TBD	10.3	10.3
VAS-42A Pressure	(psig)	10 - 20	30	15	15
VAS-43A Flow Rate	(scfm)	TBD	TBD	9.3	↓
VAS-43A Pressure	(psig)	10 - 20	30	36	↓
VAS-44A Flow Rate	(scfm)	TBD	TBD	1.7	↓
VAS-44A Pressure	(psig)	10 - 20	30	40	↓
VAS-45 Flow Rate	(scfm)	TBD	TBD	↓	↓
VAS-45 Pressure	(psig)	10 - 20	30	↓	↓
VAS-46 Flow Rate	(scfm)	TBD	TBD	↓	↓
VAS-46 Pressure	(psig)	10 - 20	30	↓	↓
VAS-47 Flow Rate	(scfm)	TBD	TBD	10.0	11.9
VAS-47 Pressure	(psig)	10 - 20	30	10	12
VAS-48 Flow Rate	(scfm)	TBD	TBD	10.5	12.0
VAS-48 Pressure	(psig)	10 - 20	30	10	12
VAS-49 Flow Rate	(scfm)	TBD	TBD	10.4	12.0
VAS-49 Pressure	(psig)	10 - 20	30	12	13
VAS-50 Flow Rate	(scfm)	TBD	TBD	10.4	12.1
VAS-50 Pressure	(psig)	10 - 20	30	12	15
VAS-51 Flow Rate	(scfm)	TBD	TBD	9.6	12.0
VAS-51 Pressure	(psig)	10 - 20	30	8	10

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1-6-20/1000	T. Hall	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	10.7	12.0
VAS-52 Pressure	(psig)	10 - 20	30	11	12
VAS-53 Flow Rate	(scfm)	TBD	TBD	11.1	12.1
VAS-53 Pressure	(psig)	10 - 20	30	9	10
VAS-54 Flow Rate	(scfm)	TBD	TBD	10.7	12.2
VAS-54 Pressure	(psig)	10 - 20	30	10	10
VAS-55 Flow Rate	(scfm)	TBD	TBD	9.9	11.9
VAS-55 Pressure	(psig)	10 - 20	30	8	10
VAS-56 Flow Rate	(scfm)	TBD	TBD	9.9	9.2
VAS-56 Pressure	(psig)	10 - 20	30	6	4
VAS-57 Flow Rate	(scfm)	TBD	TBD	10.6	10.0
VAS-57 Pressure	(psig)	10 - 20	30	10	8
VAS-58 Flow Rate	(scfm)	TBD	TBD	9.7	9.5
VAS-58 Pressure	(psig)	10 - 20	30	10	8
VAS-59 Flow Rate	(scfm)	TBD	TBD	10.2	12.1
VAS-59 Pressure	(psig)	10 - 20	30	8	8
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	15.2	15.0
BCA-01 Pressure	(psig)	0 - 5	5	20	20
BCA-02 Flow Rate	(scfm)	TBD	TBD	15.3	15.3
BCA-02 Pressure	(psig)	0 - 5	5	20	20

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
1-6-20/1100	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	Yes / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	~~Yes / No~~	~~Yes / No~~		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / (No)		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / (No)		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / (No)		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: HMI RESET UPON ARRIVAL. HAD BEEN FROZEN SINCE 12/30
2" OF RAIN SINCE 12/30

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1-15-20/0900	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	21,835:09	21.840.09
Air Compressor 1 Temp	(F)	60 - 100	110	180	181
Air Compressor 1 Pressure	(psig)	90 - 110	100	101	97
Air Compressor 2 Run Time	(hours)	NA	NA	19,331:31	19,336:31
Air Compressor 2 Temp	(F)	60 - 100	110	186	188
Air Compressor 2 Pressure	(psig)	90 - 110	100	101	97
Receiver Tank Pressure	(psig)	90 - 110	100	112	108
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	100	96
Manifold Temperature	(F)	60 - 100	110	87	88
Manifold Flow Rate	(scfm)	TBD	TBD	1989	2003
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	526.5	525.0
HAS-1 Valve Position	(%)	TBD	TBD	66.2	66.2
HAS-1 Pressure	(psig)	10 - 20	30	24	24
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	501.0	501.9
HAS-2 Valve Position	(%)	TBD	TBD	39.6	38.6
HAS-2 Pressure	(psig)	10 - 20	30	26	26
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	264.5	260.5
HAS-3 Valve Position	(%)	TBD	TBD	24.5	25.0
HAS-3 Pressure	(psig)	10 - 20	30	18	18

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

2" OF RAIN SINCE 1-6-20

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1.15.20/0900	T. HILL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	11.6	15.0
VAS-01 Pressure	(psig)	10 - 20	30	20	24
VAS-02 Flow Rate	(scfm)	TBD	TBD	4.3	4.3
VAS-02 Pressure	(psig)	10 - 20	30	42	42
VAS-03 Flow Rate	(scfm)	TBD	TBD	11.8	14.9
VAS-03 Pressure	(psig)	10 - 20	30	21	25
VAS-04 Flow Rate	(scfm)	TBD	TBD	4.7	4.5
VAS-04 Pressure	(psig)	10 - 20	30	0	0
VAS-05 Flow Rate	(scfm)	TBD	TBD	7.0	6.6
VAS-05 Pressure	(psig)	10 - 20	30	4	4
VAS-06 Flow Rate	(scfm)	TBD	TBD	9.1	8.8
VAS-06 Pressure	(psig)	10 - 20	30	8	10
VAS-07 Flow Rate	(scfm)	TBD	TBD	11.6	14.8
VAS-07 Pressure	(psig)	10 - 20	30	5	8.
VAS-08 Flow Rate	(scfm)	TBD	TBD	13.1	15.0
VAS-08 Pressure	(psig)	10 - 20	30	15	16
VAS-09 Flow Rate	(scfm)	TBD	TBD	10.1	9.9
VAS-09 Pressure	(psig)	10 - 20	30	10	10
VAS-10 Flow Rate	(scfm)	TBD	TBD	1.2	1.2
VAS-10 Pressure	(psig)	10 - 20	30	18	18
VAS-11 Flow Rate	(scfm)	TBD	TBD		5.3
VAS-11 Pressure	(psig)	10 - 20	30		20
VAS-12 Flow Rate	(scfm)	TBD	TBD		5.6
VAS-12 Pressure	(psig)	10 - 20	30		15
VAS-13 Flow Rate	(scfm)	TBD	TBD		
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD	12.0	14.9
VAS-16 Pressure	(psig)	10 - 20	30	12	15
VAS-17 Flow Rate	(scfm)	TBD	TBD	11.9	15.1
VAS-17 Pressure	(psig)	10 - 20	30	2	4

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1/5/20/0900	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD		9.6
VAS-20 Pressure	(psig)	10 - 20	30		5
VAS-21 Flow Rate	(scfm)	TBD	TBD		(2) [redacted]
VAS-21 Pressure	(psig)	10 - 20	30		
VAS-22 Flow Rate	(scfm)	TBD	TBD	9.8	9.6
VAS-22 Pressure	(psig)	10 - 20	30	20	20
VAS-23 Flow Rate	(scfm)	TBD	TBD	9.9	9.7
VAS-23 Pressure	(psig)	10 - 20	30	22	22
VAS-24 Flow Rate	(scfm)	TBD	TBD	9.3	9.1
VAS-24 Pressure	(psig)	10 - 20	30	23	24
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD	8.1	8.0
VAS-32 Pressure	(psig)	10 - 20	30	18	18
VAS-33 Flow Rate	(scfm)	TBD	TBD	8.9	8.4
VAS-33 Pressure	(psig)	10 - 20	30	18	18
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.3	9.1
VAS-34 Pressure	(psig)	10 - 20	30	21	26

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1.15.20/0900	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		6.2
VAS-35 Pressure	(psig)	10 - 20	30		29
VAS-36 Flow Rate	(scfm)	TBD	TBD		8.9
VAS-36 Pressure	(psig)	10 - 20	30		18
VAS-37 Flow Rate	(scfm)	TBD	TBD		9.1
VAS-37 Pressure	(psig)	10 - 20	30		8
VAS-38 Flow Rate	(scfm)	TBD	TBD		9.6
VAS-38 Pressure	(psig)	10 - 20	30		10
VAS-39 Flow Rate	(scfm)	TBD	TBD		8.6
VAS-39 Pressure	(psig)	10 - 20	30		18
VAS-40 Flow Rate	(scfm)	TBD	TBD		9.1
VAS-40 Pressure	(psig)	10 - 20	30		20
VAS-41 Flow Rate	(scfm)	TBD	TBD	7.1	6.6
VAS-41 Pressure	(psig)	10 - 20	30	16	18
VAS-42A Flow Rate	(scfm)	TBD	TBD	9.7	10.0
VAS-42A Pressure	(psig)	10 - 20	30	14	14
VAS-43A Flow Rate	(scfm)	TBD	TBD	7.7	6.6
VAS-43A Pressure	(psig)	10 - 20	30	35	36
VAS-44A Flow Rate	(scfm)	TBD	TBD	2.5	1.3
VAS-44A Pressure	(psig)	10 - 20	30	38	38
VAS-45 Flow Rate	(scfm)	TBD	TBD		
VAS-45 Pressure	(psig)	10 - 20	30		
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	11.5	14.8
VAS-47 Pressure	(psig)	10 - 20	30	11	13
VAS-48 Flow Rate	(scfm)	TBD	TBD	11.7	15.1
VAS-48 Pressure	(psig)	10 - 20	30	10	12
VAS-49 Flow Rate	(scfm)	TBD	TBD	12.0	15.0
VAS-49 Pressure	(psig)	10 - 20	30	13	16
VAS-50 Flow Rate	(scfm)	TBD	TBD	12.8	14.8
VAS-50 Pressure	(psig)	10 - 20	30	14	15
VAS-51 Flow Rate	(scfm)	TBD	TBD	11.6	15.1
VAS-51 Pressure	(psig)	10 - 20	30	10	12

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1/15-18/0900	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	11.6	14.8
VAS-52 Pressure	(psig)	10 - 20	30	12	14
VAS-53 Flow Rate	(scfm)	TBD	TBD	11.6	14.8
VAS-53 Pressure	(psig)	10 - 20	30	8	12
VAS-54 Flow Rate	(scfm)	TBD	TBD	11.8	15.0
VAS-54 Pressure	(psig)	10 - 20	30	10	12
VAS-55 Flow Rate	(scfm)	TBD	TBD	11.5	14.8
VAS-55 Pressure	(psig)	10 - 20	30	8	10
VAS-56 Flow Rate	(scfm)	TBD	TBD	8.7	8.5
VAS-56 Pressure	(psig)	10 - 20	30	2	2
VAS-57 Flow Rate	(scfm)	TBD	TBD	4.5	9.3
VAS-57 Pressure	(psig)	10 - 20	30	8	8
VAS-58 Flow Rate	(scfm)	TBD	TBD	8.6	8.7
VAS-58 Pressure	(psig)	10 - 20	30	8	8
VAS-59 Flow Rate	(scfm)	TBD	TBD	11.9	15.0
VAS-59 Pressure	(psig)	10 - 20	30	8	8
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	15.3	15.0
BCA-01 Pressure	(psig)	0 - 5	5	18	18
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.8	14.6
BCA-02 Pressure	(psig)	0 - 5	5	19	18

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
1-15-24/0900	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		LEVEL STILL HIGH
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / (No)		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: TURNED VAS-26 BACK ON TO SEE IF REGULATOR WAS JUST STUCK, WILL MONITOR.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1-21-20/0900	T. HALL	———	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	21,978:54	21,983:49
Air Compressor 1 Temp	(F)	60 - 100	110	179	181
Air Compressor 1 Pressure	(psig)	90 - 110	100	103	98
Air Compressor 2 Run Time	(hours)	NA	NA	19,475:16	19,480.10
Air Compressor 2 Temp	(F)	60 - 100	110	180	180
Air Compressor 2 Pressure	(psig)	90 - 110	100	103	98
Receiver Tank Pressure	(psig)	90 - 110	100	114	112
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	102	98
Manifold Temperature	(F)	60 - 100	110	48	50
Manifold Flow Rate	(scfm)	TBD	TBD	1904	2006
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	524.0	526.6
HAS-1 Valve Position	(%)	TBD	TBD	62.6	62.3
HAS-1 Pressure	(psig)	10 - 20	30	24	24
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	500.5	500.6
HAS-2 Valve Position	(%)	TBD	TBD	36.1	35.2
HAS-2 Pressure	(psig)	10 - 20	30	27	27
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	276.2	271.2
HAS-3 Valve Position	(%)	TBD	TBD	22.0	22.1
HAS-3 Pressure	(psig)	10 - 20	30	19	19

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1-21-20/0900	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	15.1	14.7
VAS-01 Pressure	(psig)	10 - 20	30	24	24
VAS-02 Flow Rate	(scfm)	TBD	TBD	4.0	4.0
VAS-02 Pressure	(psig)	10 - 20	30	43	43
VAS-03 Flow Rate	(scfm)	TBD	TBD	15.4	14.9
VAS-03 Pressure	(psig)	10 - 20	30	25	22
VAS-04 Flow Rate	(scfm)	TBD	TBD	4.4	4.3
VAS-04 Pressure	(psig)	10 - 20	30	2	0
VAS-05 Flow Rate	(scfm)	TBD	TBD	6.0	5.8
VAS-05 Pressure	(psig)	10 - 20	30	5	5
VAS-06 Flow Rate	(scfm)	TBD	TBD	9.0	↓
VAS-06 Pressure	(psig)	10 - 20	30	16	↓
VAS-07 Flow Rate	(scfm)	TBD	TBD	15.4	14.8
VAS-07 Pressure	(psig)	10 - 20	30	16	8
VAS-08 Flow Rate	(scfm)	TBD	TBD	14.8	14.7
VAS-08 Pressure	(psig)	10 - 20	30	18	18
VAS-09 Flow Rate	(scfm)	TBD	TBD	11.6	↓
VAS-09 Pressure	(psig)	10 - 20	30	10	↓
VAS-10 Flow Rate	(scfm)	TBD	TBD	2.3	↓
VAS-10 Pressure	(psig)	10 - 20	30	18	↓
VAS-11 Flow Rate	(scfm)	TBD	TBD	↓	3.6
VAS-11 Pressure	(psig)	10 - 20	30	↓	21
VAS-12 Flow Rate	(scfm)	TBD	TBD	↓	7.1
VAS-12 Pressure	(psig)	10 - 20	30	↓	15
VAS-13 Flow Rate	(scfm)	TBD	TBD	↓	9.7
VAS-13 Pressure	(psig)	10 - 20	30	↓	22
VAS-14 Flow Rate	(scfm)	TBD	TBD	↓	10.2
VAS-14 Pressure	(psig)	10 - 20	30	↓	14
VAS-15 Flow Rate	(scfm)	TBD	TBD	↓	10.8
VAS-15 Pressure	(psig)	10 - 20	30	↓	10
VAS-16 Flow Rate	(scfm)	TBD	TBD	15.2	14.9
VAS-16 Pressure	(psig)	10 - 20	30	15	15
VAS-17 Flow Rate	(scfm)	TBD	TBD	15.4	15.2
VAS-17 Pressure	(psig)	10 - 20	30	12	10

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1-21-20/0900	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		9.4
VAS-18 Pressure	(psig)	10 - 20	30		2
VAS-19 Flow Rate	(scfm)	TBD	TBD		10.6
VAS-19 Pressure	(psig)	10 - 20	30		15
VAS-20 Flow Rate	(scfm)	TBD	TBD		10.7
VAS-20 Pressure	(psig)	10 - 20	30		5
VAS-21 Flow Rate	(scfm)	TBD	TBD		11.4
VAS-21 Pressure	(psig)	10 - 20	30	↓	29
VAS-22 Flow Rate	(scfm)	TBD	TBD	11.0	10.9
VAS-22 Pressure	(psig)	10 - 20	30	22	22
VAS-23 Flow Rate	(scfm)	TBD	TBD	11.1	11.1
VAS-23 Pressure	(psig)	10 - 20	30	26	24
VAS-24 Flow Rate	(scfm)	TBD	TBD	10.6	10.6
VAS-24 Pressure	(psig)	10 - 20	30	26	26
VAS-25 Flow Rate	(scfm)	TBD	TBD		9.2
VAS-25 Pressure	(psig)	10 - 20	30		28
VAS-26 Flow Rate	(scfm)	TBD	TBD		8.3
VAS-26 Pressure	(psig)	10 - 20	30		35
VAS-27 Flow Rate	(scfm)	TBD	TBD		7.6
VAS-27 Pressure	(psig)	10 - 20	30		32
VAS-28 Flow Rate	(scfm)	TBD	TBD		8.3
VAS-28 Pressure	(psig)	10 - 20	30		17
VAS-29 Flow Rate	(scfm)	TBD	TBD		10.6
VAS-29 Pressure	(psig)	10 - 20	30		18
VAS-30 Flow Rate	(scfm)	TBD	TBD		11.5
VAS-30 Pressure	(psig)	10 - 20	30		8
VAS-31 Flow Rate	(scfm)	TBD	TBD		12.2
VAS-31 Pressure	(psig)	10 - 20	30	↓	35
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.8	9.5
VAS-32 Pressure	(psig)	10 - 20	30	20	19
VAS-33 Flow Rate	(scfm)	TBD	TBD	10.1	10.0
VAS-33 Pressure	(psig)	10 - 20	30	19	20
VAS-34 Flow Rate	(scfm)	TBD	TBD	10.6	10.0
VAS-34 Pressure	(psig)	10 - 20	30	23	22

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1-21-20/0900	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-41 Pressure	(psig)	10 - 20	30	18	
VAS-42A Flow Rate	(scfm)	TBD	TBD	10.1	10.6
VAS-42A Pressure	(psig)	10 - 20	30	16	16
VAS-43A Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-43A Pressure	(psig)	10 - 20	30	38	
VAS-44A Flow Rate	(scfm)	TBD	TBD	2.4	
VAS-44A Pressure	(psig)	10 - 20	30	40	
VAS-45 Flow Rate	(scfm)	TBD	TBD		9.4
VAS-45 Pressure	(psig)	10 - 20	30		22
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	15.4	15.0
VAS-47 Pressure	(psig)	10 - 20	30	15	15
VAS-48 Flow Rate	(scfm)	TBD	TBD	14.4	14.6
VAS-48 Pressure	(psig)	10 - 20	30	15	15
VAS-49 Flow Rate	(scfm)	TBD	TBD	14.8	14.7
VAS-49 Pressure	(psig)	10 - 20	30	18	18
VAS-50 Flow Rate	(scfm)	TBD	TBD	14.6	14.8
VAS-50 Pressure	(psig)	10 - 20	30	18	19
VAS-51 Flow Rate	(scfm)	TBD	TBD	15.4	15.0
VAS-51 Pressure	(psig)	10 - 20	30	15	15

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1-21-20/0900	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-S2 Flow Rate	(scfm)	TBD	TBD	14.8	14.7
VAS-S2 Pressure	(psig)	10 - 20	30	17	18
VAS-S3 Flow Rate	(scfm)	TBD	TBD	15.6	15.1
VAS-S3 Pressure	(psig)	10 - 20	30	12	12
VAS-S4 Flow Rate	(scfm)	TBD	TBD	15.2	15.2
VAS-S4 Pressure	(psig)	10 - 20	30	14	13
VAS-S5 Flow Rate	(scfm)	TBD	TBD	15.5	15.1
VAS-S5 Pressure	(psig)	10 - 20	30	12	12
VAS-S6 Flow Rate	(scfm)	TBD	TBD	9.4	9.0
VAS-S6 Pressure	(psig)	10 - 20	30	8	8
VAS-S7 Flow Rate	(scfm)	TBD	TBD	10.3	10.0
VAS-S7 Pressure	(psig)	10 - 20	30	8	8
VAS-S8 Flow Rate	(scfm)	TBD	TBD	9.2	8.9
VAS-S8 Pressure	(psig)	10 - 20	30	10	10
VAS-S9 Flow Rate	(scfm)	TBD	TBD	15.2	14.8
VAS-S9 Pressure	(psig)	10 - 20	30	15	12
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	15.6	15.7
BCA-01 Pressure	(psig)	0 - 5	5	21	21
BCA-02 Flow Rate	(scfm)	TBD	TBD	15.1	15.0
BCA-02 Pressure	(psig)	0 - 5	5	21	21

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
1-21-20 / 0900	T. HAIR	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	(Yes) / (No)		WTR HIGH
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / (No)		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: .25" of RAIN SINCE 1-15-20
VAS-5 + VAS-6 STUCK OPEN.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1-29-20/1100	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCME03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	22,171:03	22,178:13
Air Compressor 1 Temp	(F)	60 - 100	110	182	181
Air Compressor 1 Pressure	(psig)	90 - 110	100	97	98
Air Compressor 2 Run Time	(hours)	NA	NA	19,667:25	19,674:35
Air Compressor 2 Temp	(F)	60 - 100	110	180	181
Air Compressor 2 Pressure	(psig)	90 - 110	100	98	98
Receiver Tank Pressure	(psig)	90 - 110	100	110	111
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	96	97
Manifold Temperature	(F)	60 - 100	110	68	66
Manifold Flow Rate	(scfm)	TBD	TBD	2011	1964
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	524.0	523.2
HAS-1 Valve Position	(%)	TBD	TBD	63.8	63.8
HAS-1 Pressure	(psig)	10 - 20	30	24	24
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502.0	502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	501.2	500.3
HAS-2 Valve Position	(%)	TBD	TBD	36.0	36.4
HAS-2 Pressure	(psig)	10 - 20	30	26	26
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	277.5	260.7
HAS-3 Valve Position	(%)	TBD	TBD	24.3	23.7
HAS-3 Pressure	(psig)	10 - 20	30	18	18

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

VAS-20 SHUTDOWN FOR BROKEN WELL HEAD

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1-29-20/1100	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	14.6	14.8
VAS-01 Pressure	(psig)	10 - 20	30	24	24
VAS-02 Flow Rate	(scfm)	TBD	TBD	4.0	4.0
VAS-02 Pressure	(psig)	10 - 20	30	42	42
VAS-03 Flow Rate	(scfm)	TBD	TBD	14.0	14.1
VAS-03 Pressure	(psig)	10 - 20	30	20	20
VAS-04 Flow Rate	(scfm)	TBD	TBD	3.7	3.8
VAS-04 Pressure	(psig)	10 - 20	30	Ø	Ø
VAS-05 Flow Rate	(scfm)	TBD	TBD	5.4	5.6
VAS-05 Pressure	(psig)	10 - 20	30	4	4
VAS-06 Flow Rate	(scfm)	TBD	TBD	~~—~~ ↓	|
VAS-06 Pressure	(psig)	10 - 20	30	↓	|
VAS-07 Flow Rate	(scfm)	TBD	TBD	14.2	14.3
VAS-07 Pressure	(psig)	10 - 20	30	8	8
VAS-08 Flow Rate	(scfm)	TBD	TBD	14.4	14.6
VAS-08 Pressure	(psig)	10 - 20	30	16	17
VAS-09 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-09 Pressure	(psig)	10 - 20	30	|	|
VAS-10 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-10 Pressure	(psig)	10 - 20	30	|	|
VAS-11 Flow Rate	(scfm)	TBD	TBD	|	3.4
VAS-11 Pressure	(psig)	10 - 20	30	|	20
VAS-12 Flow Rate	(scfm)	TBD	TBD	|	6.7
VAS-12 Pressure	(psig)	10 - 20	30	↓	15
VAS-13 Flow Rate	(scfm)	TBD	TBD	9.6	7.9
VAS-13 Pressure	(psig)	10 - 20	30	22	22
VAS-14 Flow Rate	(scfm)	TBD	TBD	9.5	|
VAS-14 Pressure	(psig)	10 - 20	30	12	|
VAS-15 Flow Rate	(scfm)	TBD	TBD	10.3	10.3
VAS-15 Pressure	(psig)	10 - 20	30	8	8
VAS-16 Flow Rate	(scfm)	TBD	TBD	14.6	14.7
VAS-16 Pressure	(psig)	10 - 20	30	14	13
VAS-17 Flow Rate	(scfm)	TBD	TBD	14.7	14.8
VAS-17 Pressure	(psig)	10 - 20	30	8	6

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1-29-20/1100	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	8.9	9.2
VAS-18 Pressure	(psig)	10 - 20	30	Ø	Ø
VAS-19 Flow Rate	(scfm)	TBD	TBD	10.6	10.4
VAS-19 Pressure	(psig)	10 - 20	30	15	14
VAS-20 Flow Rate	(scfm)	TBD	TBD	10.2	|
VAS-20 Pressure	(psig)	10 - 20	30	5	|
VAS-21 Flow Rate	(scfm)	TBD	TBD	3.1	3.3
VAS-21 Pressure	(psig)	10 - 20	30	26	24
VAS-22 Flow Rate	(scfm)	TBD	TBD	10.2	10.3
VAS-22 Pressure	(psig)	10 - 20	30	22	21
VAS-23 Flow Rate	(scfm)	TBD	TBD	10.5	10.6
VAS-23 Pressure	(psig)	10 - 20	30	25	25
VAS-24 Flow Rate	(scfm)	TBD	TBD	10.0	9.9
VAS-24 Pressure	(psig)	10 - 20	30	25	25
VAS-25 Flow Rate	(scfm)	TBD	TBD	10.2	8.1
VAS-25 Pressure	(psig)	10 - 20	30	25	25
VAS-26 Flow Rate	(scfm)	TBD	TBD	6.5	6.4
VAS-26 Pressure	(psig)	10 - 20	30	32	32
VAS-27 Flow Rate	(scfm)	TBD	TBD	7.5	7.6
VAS-27 Pressure	(psig)	10 - 20	30	30	31
VAS-28 Flow Rate	(scfm)	TBD	TBD	8.0	6.5
VAS-28 Pressure	(psig)	10 - 20	30	18	15
VAS-29 Flow Rate	(scfm)	TBD	TBD	9.7	9.9
VAS-29 Pressure	(psig)	10 - 20	30	16	15
VAS-30 Flow Rate	(scfm)	TBD	TBD	10.9	11.0
VAS-30 Pressure	(psig)	10 - 20	30	8	7
VAS-31 Flow Rate	(scfm)	TBD	TBD	9.5	8.2
VAS-31 Pressure	(psig)	10 - 20	30	33	33
VAS-32 Flow Rate	(scfm)	TBD	TBD	8.7	8.8
VAS-32 Pressure	(psig)	10 - 20	30	18	18
VAS-33 Flow Rate	(scfm)	TBD	TBD	9.6	9.7
VAS-33 Pressure	(psig)	10 - 20	30	18	18
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.6	9.6
VAS-34 Pressure	(psig)	10 - 20	30	21	21

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1-29-20/1100	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	7.2	
VAS-35 Pressure	(psig)	10 - 20	30	32	
VAS-36 Flow Rate	(scfm)	TBD	TBD	7.5	
VAS-36 Pressure	(psig)	10 - 20	30	20	
VAS-37 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-37 Pressure	(psig)	10 - 20	30	10	
VAS-38 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-38 Pressure	(psig)	10 - 20	30	11	
VAS-39 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-39 Pressure	(psig)	10 - 20	30	20	
VAS-40 Flow Rate	(scfm)	TBD	TBD	6.5	
VAS-40 Pressure	(psig)	10 - 20	30	23	
VAS-41 Flow Rate	(scfm)	TBD	TBD	↓	
VAS-41 Pressure	(psig)	10 - 20	30	↓	
VAS-42A Flow Rate	(scfm)	TBD	TBD	10.3	10.2
VAS-42A Pressure	(psig)	10 - 20	30	15	15
VAS-43A Flow Rate	(scfm)	TBD	TBD	↓	↓
VAS-43A Pressure	(psig)	10 - 20	30	↓	↓
VAS-44A Flow Rate	(scfm)	TBD	TBD	↓	↓
VAS-44A Pressure	(psig)	10 - 20	30	↓	9.1
VAS-45 Flow Rate	(scfm)	TBD	TBD	↓	↓
VAS-45 Pressure	(psig)	10 - 20	30	↓	20
VAS-46 Flow Rate	(scfm)	TBD	TBD	↓	↓
VAS-46 Pressure	(psig)	10 - 20	30	↓	↓
VAS-47 Flow Rate	(scfm)	TBD	TBD	14.9	14.8
VAS-47 Pressure	(psig)	10 - 20	30	14	14
VAS-48 Flow Rate	(scfm)	TBD	TBD	14.8	14.8
VAS-48 Pressure	(psig)	10 - 20	30	14	14
VAS-49 Flow Rate	(scfm)	TBD	TBD	14.8	14.9
VAS-49 Pressure	(psig)	10 - 20	30	17	18
VAS-50 Flow Rate	(scfm)	TBD	TBD	14.7	14.8
VAS-50 Pressure	(psig)	10 - 20	30	18	18
VAS-51 Flow Rate	(scfm)	TBD	TBD	14.9	15.1
VAS-51 Pressure	(psig)	10 - 20	30	14	15

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
1-29-20/1100	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	15.0	15.0
VAS-52 Pressure	(psig)	10 - 20	30	15	15
VAS-53 Flow Rate	(scfm)	TBD	TBD	15.4	14.9
VAS-53 Pressure	(psig)	10 - 20	30	12	12
VAS-54 Flow Rate	(scfm)	TBD	TBD	14.9	14.9
VAS-54 Pressure	(psig)	10 - 20	30	12	12
VAS-55 Flow Rate	(scfm)	TBD	TBD	14.9	15.2
VAS-55 Pressure	(psig)	10 - 20	30	12	12
VAS-56 Flow Rate	(scfm)	TBD	TBD	8.2	8.3
VAS-56 Pressure	(psig)	10 - 20	30	4	4
VAS-57 Flow Rate	(scfm)	TBD	TBD	9.5	9.5
VAS-57 Pressure	(psig)	10 - 20	30	8	8
VAS-58 Flow Rate	(scfm)	TBD	TBD	8.3	8.3
VAS-58 Pressure	(psig)	10 - 20	30	8	10
VAS-59 Flow Rate	(scfm)	TBD	TBD	14.6	14.7
VAS-59 Pressure	(psig)	10 - 20	30	10	10
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	15.1	15.2
BCA-01 Pressure	(psig)	0 - 5	5	19	20
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.7	14.4
BCA-02 Pressure	(psig)	0 - 5	5	20	20

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
1-29-20 / 1100	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		WTL STILL HIGH
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / (No)		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / (No)		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	(Yes) / No		OWS REPAIRED
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: OWS OIL OVERFLOW FULL. EMPTIED AND REPLACED JUG DISCOVERED VAS-20 BROKEN AT WELL, INSPECTED AND TOOK PICS FOR REPAIR. WELL SHUTDOWN

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2-4-20/1400	T. [illegible]	←	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA		YES
Air Compressor 1 Run Time	(hours)	NA	NA		22,319:50
Air Compressor 1 Temp	(F)	60 - 100	110		183
Air Compressor 1 Pressure	(psig)	90 - 110	100		96
Air Compressor 2 Run Time	(hours)	NA	NA		19,816:12
Air Compressor 2 Temp	(F)	60 - 100	110		192
Air Compressor 2 Pressure	(psig)	90 - 110	100		96
Receiver Tank Pressure	(psig)	90 - 110	100		107
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100		94
Manifold Temperature	(F)	60 - 100	110		86
Manifold Flow Rate	(scfm)	TBD	TBD		2030
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD		525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD		524.5
HAS-1 Valve Position	(%)	TBD	TBD		65.8
HAS-1 Pressure	(psig)	10 - 20	30		24
HAS-2 Target Flow Rate	(scfm)	TBD	TBD		502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD		503.7
HAS-2 Valve Position	(%)	TBD	TBD		37.5
HAS-2 Pressure	(psig)	10 - 20	30		26
HAS-3 Target Flow Rate	(scfm)	TBD	TBD		262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD		261.8
HAS-3 Valve Position	(%)	TBD	TBD		24.5
HAS-3 Pressure	(psig)	10 - 20	30		17

Parts Needed:	
Parts Installed:	

Notes (Include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2-4-20/1400	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		14.6
VAS-01 Pressure	(psig)	10 - 20	30		24
VAS-02 Flow Rate	(scfm)	TBD	TBD		3.9
VAS-02 Pressure	(psig)	10 - 20	30		41
VAS-03 Flow Rate	(scfm)	TBD	TBD		12.8
VAS-03 Pressure	(psig)	10 - 20	30		20
VAS-04 Flow Rate	(scfm)	TBD	TBD		↓
VAS-04 Pressure	(psig)	10 - 20	30		↓
VAS-05 Flow Rate	(scfm)	TBD	TBD		5.0
VAS-05 Pressure	(psig)	10 - 20	30		4
VAS-06 Flow Rate	(scfm)	TBD	TBD		↓
VAS-06 Pressure	(psig)	10 - 20	30		↓
VAS-07 Flow Rate	(scfm)	TBD	TBD		13.3
VAS-07 Pressure	(psig)	10 - 20	30		5
VAS-08 Flow Rate	(scfm)	TBD	TBD		13.7
VAS-08 Pressure	(psig)	10 - 20	30		15
VAS-09 Flow Rate	(scfm)	TBD	TBD		↓
VAS-09 Pressure	(psig)	10 - 20	30		↓
VAS-10 Flow Rate	(scfm)	TBD	TBD		↓
VAS-10 Pressure	(psig)	10 - 20	30		↓
VAS-11 Flow Rate	(scfm)	TBD	TBD		↓
VAS-11 Pressure	(psig)	10 - 20	30		↓
VAS-12 Flow Rate	(scfm)	TBD	TBD		↓
VAS-12 Pressure	(psig)	10 - 20	30		↓
VAS-13 Flow Rate	(scfm)	TBD	TBD		8.0
VAS-13 Pressure	(psig)	10 - 20	30		20
VAS-14 Flow Rate	(scfm)	TBD	TBD		8.5
VAS-14 Pressure	(psig)	10 - 20	30		12
VAS-15 Flow Rate	(scfm)	TBD	TBD		9.7
VAS-15 Pressure	(psig)	10 - 20	30		5
VAS-16 Flow Rate	(scfm)	TBD	TBD		13.8
VAS-16 Pressure	(psig)	10 - 20	30		12
VAS-17 Flow Rate	(scfm)	TBD	TBD		14.5
VAS-17 Pressure	(psig)	10 - 20	30		2

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2-4-20/1400	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells		(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate		(scfm)	TBD	TBD		9.2
VAS-18 Pressure		(psig)	10 - 20	30		0
VAS-19 Flow Rate		(scfm)	TBD	TBD		10.4
VAS-19 Pressure		(psig)	10 - 20	30		12
VAS-20 Flow Rate		(scfm)	TBD	TBD		~~3.0~~ 4.9
VAS-20 Pressure		(psig)	10 - 20	30		28
VAS-21 Flow Rate		(scfm)	TBD	TBD		2.0
VAS-21 Pressure		(psig)	10 - 20	30		18
VAS-22 Flow Rate		(scfm)	TBD	TBD		9.4
VAS-22 Pressure		(psig)	10 - 20	30		20
VAS-23 Flow Rate		(scfm)	TBD	TBD		9.7
VAS-23 Pressure		(psig)	10 - 20	30		23
VAS-24 Flow Rate		(scfm)	TBD	TBD		9.1
VAS-24 Pressure		(psig)	10 - 20	30		22
VAS-25 Flow Rate		(scfm)	TBD	TBD		10.7
VAS-25 Pressure		(psig)	10 - 20	30		21
VAS-26 Flow Rate		(scfm)	TBD	TBD		6.6
VAS-26 Pressure		(psig)	10 - 20	30		28
VAS-27 Flow Rate		(scfm)	TBD	TBD		7.5
VAS-27 Pressure		(psig)	10 - 20	30		29
VAS-28 Flow Rate		(scfm)	TBD	TBD		4.7
VAS-28 Pressure		(psig)	10 - 20	30		14
VAS-29 Flow Rate		(scfm)	TBD	TBD		9.3
VAS-29 Pressure		(psig)	10 - 20	30		12
VAS-30 Flow Rate		(scfm)	TBD	TBD		10.1
VAS-30 Pressure		(psig)	10 - 20	30		5
VAS-31 Flow Rate		(scfm)	TBD	TBD		8.8
VAS-31 Pressure		(psig)	10 - 20	30		32
VAS-32 Flow Rate		(scfm)	TBD	TBD		7.9
VAS-32 Pressure		(psig)	10 - 20	30		18
VAS-33 Flow Rate		(scfm)	TBD	TBD		8.6
VAS-33 Pressure		(psig)	10 - 20	30		18
VAS-34 Flow Rate		(scfm)	TBD	TBD		9.1
VAS-34 Pressure		(psig)	10 - 20	30		20

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2.4.20/1400	T. Hall	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		10.4
VAS-35 Pressure	(psig)	10 - 20	30		28
VAS-36 Flow Rate	(scfm)	TBD	TBD		8.8
VAS-36 Pressure	(psig)	10 - 20	30		18
VAS-37 Flow Rate	(scfm)	TBD	TBD		9.0
VAS-37 Pressure	(psig)	10 - 20	30		8
VAS-38 Flow Rate	(scfm)	TBD	TBD		9.3
VAS-38 Pressure	(psig)	10 - 20	30		10
VAS-39 Flow Rate	(scfm)	TBD	TBD		7.7
VAS-39 Pressure	(psig)	10 - 20	30		18
VAS-40 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-40 Pressure	(psig)	10 - 20	30		21
VAS-41 Flow Rate	(scfm)	TBD	TBD		↓
VAS-41 Pressure	(psig)	10 - 20	30		↓
VAS-42A Flow Rate	(scfm)	TBD	TBD		9.8
VAS-42A Pressure	(psig)	10 - 20	30		13
VAS-43A Flow Rate	(scfm)	TBD	TBD		↓
VAS-43A Pressure	(psig)	10 - 20	30		↓
VAS-44A Flow Rate	(scfm)	TBD	TBD		↓
VAS-44A Pressure	(psig)	10 - 20	30		↓
VAS-45 Flow Rate	(scfm)	TBD	TBD		9.3
VAS-45 Pressure	(psig)	10 - 20	30		18
VAS-46 Flow Rate	(scfm)	TBD	TBD		↓
VAS-46 Pressure	(psig)	10 - 20	30		↓
VAS-47 Flow Rate	(scfm)	TBD	TBD		14.5
VAS-47 Pressure	(psig)	10 - 20	30		12
VAS-48 Flow Rate	(scfm)	TBD	TBD		14.1
VAS-48 Pressure	(psig)	10 - 20	30		12
VAS-49 Flow Rate	(scfm)	TBD	TBD		14.1
VAS-49 Pressure	(psig)	10 - 20	30		16
VAS-50 Flow Rate	(scfm)	TBD	TBD		14.1
VAS-50 Pressure	(psig)	10 - 20	30		16
VAS-51 Flow Rate	(scfm)	TBD	TBD		14.2
VAS-51 Pressure	(psig)	10 - 20	30		12

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7-4-20/1400	T-HAM	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD		14.6
VAS-52 Pressure	(psig)	10 - 20	30		15
VAS-53 Flow Rate	(scfm)	TBD	TBD		14.4
VAS-53 Pressure	(psig)	10 - 20	30		10
VAS-54 Flow Rate	(scfm)	TBD	TBD		14.6
VAS-54 Pressure	(psig)	10 - 20	30		12
VAS-55 Flow Rate	(scfm)	TBD	TBD		14.5
VAS-55 Pressure	(psig)	10 - 20	30		10
VAS-56 Flow Rate	(scfm)	TBD	TBD		7.6
VAS-56 Pressure	(psig)	10 - 20	30		0
VAS-57 Flow Rate	(scfm)	TBD	TBD		8.9
VAS-57 Pressure	(psig)	10 - 20	30		8
VAS-58 Flow Rate	(scfm)	TBD	TBD		7.9
VAS-58 Pressure	(psig)	10 - 20	30		8
VAS-59 Flow Rate	(scfm)	TBD	TBD		14.5
VAS-59 Pressure	(psig)	10 - 20	30		6
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD		14.6
BCA-01 Pressure	(psig)	0 - 5	5		18
BCA-02 Flow Rate	(scfm)	TBD	TBD		14.5
BCA-02 Pressure	(psig)	0 - 5	5		18

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
2-4-20/1400	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)	—	WTL STILL HIGH
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	(Yes) / No	—	NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)	—	
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: .50" OF RAIN SINCE 1-29-20
REPAIRED VAS-20 AND REINTRODUCED FLOW 4.5 SCFM @ 25 PSI
DELIVERED NEW 325 GALLON TANK FOR HIGH FLOW PURGE WATER

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2/10/2020 1345	SCOTT SAWYER	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	No - power outage	YES
Air Compressor 1 Run Time / LOAD	(hours)	NA	NA	2241 5:55	2241 8:39 / 14156:25
Air Compressor 1 Temp	(F)	60 - 100	110		181
Air Compressor 1 Pressure	(psig)	90 - 110	100		97
Air Compressor 2 Run Time / LOAD	(hours)	NA	NA	19912:17	19915:22 / 8490:06
Air Compressor 2 Temp	(F)	60 - 100	110		181
Air Compressor 2 Pressure	(psig)	90 - 110	100		98
Receiver Tank Pressure	(psig)	90 - 110	100		110
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100		96
Manifold Temperature	(F)	60 - 100	110		70
Manifold Flow Rate	(scfm)	TBD	TBD		1968
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD		525.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD		525.7
HAS-1 Valve Position	(%)	TBD	TBD		43.4
HAS-1 Pressure	(psig)	10 - 20	30		25
HAS-2 Target Flow Rate	(scfm)	TBD	TBD		502.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD		498.3
HAS-2 Valve Position	(%)	TBD	TBD		27.3
HAS-2 Pressure	(psig)	10 - 20	30		21
HAS-3 Target Flow Rate	(scfm)	TBD	TBD		262.5
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD		261.2
HAS-3 Valve Position	(%)	TBD	TBD		22.9
HAS-3 Pressure	(psig)	10 - 20	30		22

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

- power outage occurred on 2/8, restarted 1025
- adjust flows to targets on all wells that don't have special requirements

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2/10/2020 1345	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD		12.5
VAS-01 Pressure	(psig)	10 - 20	30		28
VAS-02 Flow Rate	(scfm)	TBD	TBD		25
VAS-02 Pressure	(psig)	10 - 20	30		36
VAS-03 Flow Rate	(scfm)	TBD	TBD		12.9
VAS-03 Pressure	(psig)	10 - 20	30		24
VAS-04 Flow Rate	(scfm)	TBD	TBD		
VAS-04 Pressure	(psig)	10 - 20	30		
VAS-05 Flow Rate	(scfm)	TBD	TBD		
VAS-05 Pressure	(psig)	10 - 20	30		
VAS-06 Flow Rate	(scfm)	TBD	TBD		
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD		10.0
VAS-07 Pressure	(psig)	10 - 20	30		9
VAS-08 Flow Rate	(scfm)	TBD	TBD		10.2
VAS-08 Pressure	(psig)	10 - 20	30		17
VAS-09 Flow Rate	(scfm)	TBD	TBD		
VAS-09 Pressure	(psig)	10 - 20	30		
VAS-10 Flow Rate	(scfm)	TBD	TBD		
VAS-10 Pressure	(psig)	10 - 20	30		
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-13 Pressure	(psig)	10 - 20	30		21
VAS-14 Flow Rate	(scfm)	TBD	TBD		7.1
VAS-14 Pressure	(psig)	10 - 20	30		16
VAS-15 Flow Rate	(scfm)	TBD	TBD		9.0
VAS-15 Pressure	(psig)	10 - 20	30		11
VAS-16 Flow Rate	(scfm)	TBD	TBD		10.0
VAS-16 Pressure	(psig)	10 - 20	30		12
VAS-17 Flow Rate	(scfm)	TBD	TBD		10.3
VAS-17 Pressure	(psig)	10 - 20	30		10

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2/10/2020 1345	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		8.9
VAS-18 Pressure	(psig)	10 - 20	30		1
VAS-19 Flow Rate	(scfm)	TBD	TBD		10.9
VAS-19 Pressure	(psig)	10 - 20	30		14
VAS-20 Flow Rate	(scfm)	TBD	TBD		7.0
VAS-20 Pressure	(psig)	10 - 20	30		27
VAS-21 Flow Rate	(scfm)	TBD	TBD		2.5
VAS-21 Pressure	(psig)	10 - 20	30		26
VAS-22 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-22 Pressure	(psig)	10 - 20	30		23
VAS-23 Flow Rate	(scfm)	TBD	TBD		5.4
VAS-23 Pressure	(psig)	10 - 20	30		25
VAS-24 Flow Rate	(scfm)	TBD	TBD		7.3
VAS-24 Pressure	(psig)	10 - 20	30		26
VAS-25 Flow Rate	(scfm)	TBD	TBD		11.2
VAS-25 Pressure	(psig)	10 - 20	30		23
VAS-26 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-26 Pressure	(psig)	10 - 20	30		32
VAS-27 Flow Rate	(scfm)	TBD	TBD		5.3
VAS-27 Pressure	(psig)	10 - 20	30		31
VAS-28 Flow Rate	(scfm)	TBD	TBD		7.6
VAS-28 Pressure	(psig)	10 - 20	30		17
VAS-29 Flow Rate	(scfm)	TBD	TBD		9.4
VAS-29 Pressure	(psig)	10 - 20	30		15
VAS-30 Flow Rate	(scfm)	TBD	TBD		10.7
VAS-30 Pressure	(psig)	10 - 20	30		8
VAS-31 Flow Rate	(scfm)	TBD	TBD		5.4
VAS-31 Pressure	(psig)	10 - 20	30		34
VAS-32 Flow Rate	(scfm)	TBD	TBD		7.4
VAS-32 Pressure	(psig)	10 - 20	30		18
VAS-33 Flow Rate	(scfm)	TBD	TBD		4.4
VAS-33 Pressure	(psig)	10 - 20	30		20
VAS-34 Flow Rate	(scfm)	TBD	TBD		5.8
VAS-34 Pressure	(psig)	10 - 20	30		23

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2/10/2020 1345	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		6.7
VAS-35 Pressure	(psig)	10 - 20	30		32
VAS-36 Flow Rate	(scfm)	TBD	TBD		8.9
VAS-36 Pressure	(psig)	10 - 20	30		19
VAS-37 Flow Rate	(scfm)	TBD	TBD		8.8
VAS-37 Pressure	(psig)	10 - 20	30		10
VAS-38 Flow Rate	(scfm)	TBD	TBD		9.8
VAS-38 Pressure	(psig)	10 - 20	30		11
VAS-39 Flow Rate	(scfm)	TBD	TBD		8.4
VAS-39 Pressure	(psig)	10 - 20	30		20
VAS-40 Flow Rate	(scfm)	TBD	TBD		9.9
VAS-40 Pressure	(psig)	10 - 20	30		22
VAS-41 Flow Rate	(scfm)	TBD	TBD		—
VAS-41 Pressure	(psig)	10 - 20	30		—
VAS-42A Flow Rate	(scfm)	TBD	TBD		9.6
VAS-42A Pressure	(psig)	10 - 20	30		16
VAS-43A Flow Rate	(scfm)	TBD	TBD		—
VAS-43A Pressure	(psig)	10 - 20	30		
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD		
VAS-45 Pressure	(psig)	10 - 20	30		
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD		14.5
VAS-47 Pressure	(psig)	10 - 20	30		15
VAS-48 Flow Rate	(scfm)	TBD	TBD		15.1
VAS-48 Pressure	(psig)	10 - 20	30		18
VAS-49 Flow Rate	(scfm)	TBD	TBD		13.3
VAS-49 Pressure	(psig)	10 - 20	30		18
VAS-50 Flow Rate	(scfm)	TBD	TBD		15.6
VAS-50 Pressure	(psig)	10 - 20	30		14
VAS-51 Flow Rate	(scfm)	TBD	TBD		14.9
VAS-51 Pressure	(psig)	10 - 20	30		15

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2/10/2020 1345	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD		15.2
VAS-52 Pressure	(psig)	10 - 20	30		19
VAS-53 Flow Rate	(scfm)	TBD	TBD		14.8
VAS-53 Pressure	(psig)	10 - 20	30		11
VAS-54 Flow Rate	(scfm)	TBD	TBD		15.0
VAS-54 Pressure	(psig)	10 - 20	30		12
VAS-55 Flow Rate	(scfm)	TBD	TBD		15.6
VAS-55 Pressure	(psig)	10 - 20	30		16
VAS-56 Flow Rate	(scfm)	TBD	TBD		12.0
VAS-56 Pressure	(psig)	10 - 20	30		10
VAS-57 Flow Rate	(scfm)	TBD	TBD		10.9
VAS-57 Pressure	(psig)	10 - 20	30		10
VAS-58 Flow Rate	(scfm)	TBD	TBD		9.4
VAS-58 Pressure	(psig)	10 - 20	30		10
VAS-59 Flow Rate	(scfm)	TBD	TBD		16.2
VAS-59 Pressure	(psig)	10 - 20	30		10
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD		OFF FOR
BCA-01 Pressure	(psig)	0 - 5	5		SAMPLING
BCA-02 Flow Rate	(scfm)	TBD	TBD		EVENT
BCA-02 Pressure	(psig)	0 - 5	5		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
2/10/2020 1345	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	Yes / No	Yes / No		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / No	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	Yes / No	Yes / No		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No	3/2020	
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No	5/2020	

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: reduced flow from 15 SCFM to 10 SCFM, daylighting in area. high pressure wells, slight adjustments made 15 SCFM 24/7, adjusted back to target if not at 15 SCFM

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2.19.20/1400	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	
Air Compressor 1 Run Time	(hours)	NA	NA	22,635:55	
Air Compressor 1 Temp	(F)	60 - 100	110	180	
Air Compressor 1 Pressure	(psig)	90 - 110	100	97	
Air Compressor 2 Run Time	(hours)	NA	NA	20,132:38	
Air Compressor 2 Temp	(F)	60 - 100	110	182	
Air Compressor 2 Pressure	(psig)	90 - 110	100	98	
Receiver Tank Pressure	(psig)	90 - 110	100	110	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	(IW) ~~96~~	
Manifold Temperature	(F)	60 - 100	110	70	
Manifold Flow Rate	(scfm)	TBD	TBD	1984	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	525.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	525.9	
HAS-1 Valve Position	(%)	TBD	TBD	64.9	
HAS-1 Pressure	(psig)	10 - 20	30	25	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	502	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	502.5	
HAS-2 Valve Position	(%)	TBD	TBD	38.9	
HAS-2 Pressure	(psig)	10 - 20	30	28	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	262.5	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	264.4	
HAS-3 Valve Position	(%)	TBD	TBD	23.4	
HAS-3 Pressure	(psig)	10 - 20	30	20	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2-19-20/1400	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	15.2	
VAS-01 Pressure	(psig)	10 - 20	30	25	
VAS-02 Flow Rate	(scfm)	TBD	TBD	2.7	
VAS-02 Pressure	(psig)	10 - 20	30	43	
VAS-03 Flow Rate	(scfm)	TBD	TBD	14.3	
VAS-03 Pressure	(psig)	10 - 20	30	22	
VAS-04 Flow Rate	(scfm)	TBD	TBD	7.2	
VAS-04 Pressure	(psig)	10 - 20	30	0	
VAS-05 Flow Rate	(scfm)	TBD	TBD	6.8	
VAS-05 Pressure	(psig)	10 - 20	30	7	
VAS-06 Flow Rate	(scfm)	TBD	TBD	12.7	
VAS-06 Pressure	(psig)	10 - 20	30	10	
VAS-07 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-07 Pressure	(psig)	10 - 20	30	8	
VAS-08 Flow Rate	(scfm)	TBD	TBD	10.9	
VAS-08 Pressure	(psig)	10 - 20	30	14	
VAS-09 Flow Rate	(scfm)	TBD	TBD	10.7	
VAS-09 Pressure	(psig)	10 - 20	30	10	
VAS-10 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-10 Pressure	(psig)	10 - 20	30	17	
VAS-11 Flow Rate	(scfm)	TBD	TBD	6.3	
VAS-11 Pressure	(psig)	10 - 20	30	22	
VAS-12 Flow Rate	(scfm)	TBD	TBD	6.2	
VAS-12 Pressure	(psig)	10 - 20	30	15	
VAS-13 Flow Rate	(scfm)	TBD	TBD	0 2	
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-16 Pressure	(psig)	10 - 20	30	10	
VAS-17 Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-17 Pressure	(psig)	10 - 20	30		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
7-19-20/1400	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-20 Pressure	(psig)	10 - 20	30	29	
VAS-21 Flow Rate	(scfm)	TBD	TBD		
VAS-21 Pressure	(psig)	10 - 20	30		
VAS-22 Flow Rate	(scfm)	TBD	TBD	9.8	
VAS-22 Pressure	(psig)	10 - 20	30	20	
VAS-23 Flow Rate	(scfm)	TBD	TBD	11.2	
VAS-23 Pressure	(psig)	10 - 20	30	24	
VAS-24 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-24 Pressure	(psig)	10 - 20	30	23	
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD	8.9	
VAS-32 Pressure	(psig)	10 - 20	30	18	
VAS-33 Flow Rate	(scfm)	TBD	TBD	10.2	
VAS-33 Pressure	(psig)	10 - 20	30	20	
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-34 Pressure	(psig)	10 - 20	30	20	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2-19-20/1400	T. HALL	———	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	6.9	
VAS-35 Pressure	(psig)	10 - 20	30	30	
VAS-36 Flow Rate	(scfm)	TBD	TBD	9.3	
VAS-36 Pressure	(psig)	10 - 20	30	18	
VAS-37 Flow Rate	(scfm)	TBD	TBD	9.3	
VAS-37 Pressure	(psig)	10 - 20	30	16	
VAS-38 Flow Rate	(scfm)	TBD	TBD	9.9	
VAS-38 Pressure	(psig)	10 - 20	30	16	
VAS-39 Flow Rate	(scfm)	TBD	TBD	7.9	
VAS-39 Pressure	(psig)	10 - 20	30	20	
VAS-40 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-40 Pressure	(psig)	10 - 20	30	20	
VAS-41 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-41 Pressure	(psig)	10 - 20	30	15	
VAS-42A Flow Rate	(scfm)	TBD	TBD	9.5	
VAS-42A Pressure	(psig)	10 - 20	30	15	
VAS-43A Flow Rate	(scfm)	TBD	TBD	7.3	
VAS-43A Pressure	(psig)	10 - 20	30	38	
VAS-44A Flow Rate	(scfm)	TBD	TBD	3.6	
VAS-44A Pressure	(psig)	10 - 20	30	31	
VAS-45 Flow Rate	(scfm)	TBD	TBD		
VAS-45 Pressure	(psig)	10 - 20	30		
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	15.2	
VAS-47 Pressure	(psig)	10 - 20	30	13	
VAS-48 Flow Rate	(scfm)	TBD	TBD	14.9	
VAS-48 Pressure	(psig)	10 - 20	30	16	
VAS-49 Flow Rate	(scfm)	TBD	TBD	14.6	
VAS-49 Pressure	(psig)	10 - 20	30	18	
VAS-50 Flow Rate	(scfm)	TBD	TBD	14.3	
VAS-50 Pressure	(psig)	10 - 20	30	12	
VAS-51 Flow Rate	(scfm)	TBD	TBD	14.6	
VAS-51 Pressure	(psig)	10 - 20	30	15	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2.19.20/1400	T. HALL	———	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	15.0	
VAS-52 Pressure	(psig)	10 - 20	30	18	
VAS-53 Flow Rate	(scfm)	TBD	TBD	14.7	
VAS-53 Pressure	(psig)	10 - 20	30	12	
VAS-54 Flow Rate	(scfm)	TBD	TBD	14.6	
VAS-54 Pressure	(psig)	10 - 20	30	12	
VAS-55 Flow Rate	(scfm)	TBD	TBD	12.1	
VAS-55 Pressure	(psig)	10 - 20	30	10	
VAS-56 Flow Rate	(scfm)	TBD	TBD	11.2	
VAS-56 Pressure	(psig)	10 - 20	30	2	
VAS-57 Flow Rate	(scfm)	TBD	TBD	13.6	
VAS-57 Pressure	(psig)	10 - 20	30	12	
VAS-58 Flow Rate	(scfm)	TBD	TBD	14.7	
VAS-58 Pressure	(psig)	10 - 20	30	17	
VAS-59 Flow Rate	(scfm)	TBD	TBD	14.5	
VAS-59 Pressure	(psig)	10 - 20	30	10	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.5	
BCA-01 Pressure	(psig)	0 - 5	5	18	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.9	
BCA-02 Pressure	(psig)	0 - 5	5	20	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
2-19-20/1400	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		BEAVER DAM BACK
Perform air monitoring near Cupboard Creek.	Each visit	Yes / No	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: ADDED 4 BUCKETS OF GRAVEL BY VAS-18. CAVITY OPENED UP AND WAS BUBBLING.
2.5" OF RAIN SINCE 2/10

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Caroline*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2.20.20/1002	T. HALL	—	Air Compressors Condensate Treatment	SuRair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCME03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	22,800:56	22,804:17
Air Compressor 1 Temp	(F)	60 - 100	110	181	181
Air Compressor 1 Pressure	(psig)	90 - 110	100	102	103
Air Compressor 2 Run Time	(hours)	NA	NA	20,297:39	20,301:00
Air Compressor 2 Temp	(F)	60 - 100	110	180	178
Air Compressor 2 Pressure	(psig)	90 - 110	100	102	103
Receiver Tank Pressure	(psig)	90 - 110	100	114	114
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	102	104
Manifold Temperature	(F)	60 - 100	110	70	72
Manifold Flow Rate	(scfm)	TBD	TBD	1683	1628
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	400.0	400.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	399.4	400.0
HAS-1 Valve Position	(%)	TBD	TBD	55.7	55.8
HAS-1 Pressure	(psig)	10 - 20	30	21	21
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	400.0	400.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	400.1	401.1
HAS-2 Valve Position	(%)	TBD	TBD	20.2	20.4
HAS-2 Pressure	(psig)	10 - 20	30	22	23
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	200.0	200.0
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	189.6	206.7
HAS-3 Valve Position	(%)	TBD	TBD	22.4	20.5
HAS-3 Pressure	(psig)	10 - 20	30	17	17

Parts Needed:	
Parts Installed:	

Notes (Include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2-28-24/1000	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	14.8	14.8
VAS-01 Pressure	(psig)	10 - 20	30	23	23
VAS-02 Flow Rate	(scfm)	TBD	TBD	2.6	2.6
VAS-02 Pressure	(psig)	10 - 20	30	43	43
VAS-03 Flow Rate	(scfm)	TBD	TBD	14.0	14.1
VAS-03 Pressure	(psig)	10 - 20	30	22	22
VAS-04 Flow Rate	(scfm)	TBD	TBD	6.1	6.2
VAS-04 Pressure	(psig)	10 - 20	30	0	0
VAS-05 Flow Rate	(scfm)	TBD	TBD	5.7	5.8
VAS-05 Pressure	(psig)	10 - 20	30	5	8
VAS-06 Flow Rate	(scfm)	TBD	TBD	0.0	12.7
VAS-06 Pressure	(psig)	10 - 20	30		
VAS-07 Flow Rate	(scfm)	TBD	TBD	8.7	8.8
VAS-07 Pressure	(psig)	10 - 20	30	8	8
VAS-08 Flow Rate	(scfm)	TBD	TBD	10.5	10.6
VAS-08 Pressure	(psig)	10 - 20	30	15	15
VAS-09 Flow Rate	(scfm)	TBD	TBD		10.5
VAS-09 Pressure	(psig)	10 - 20	30		10
VAS-10 Flow Rate	(scfm)	TBD	TBD		5.6
VAS-10 Pressure	(psig)	10 - 20	30		18
VAS-11 Flow Rate	(scfm)	TBD	TBD		
VAS-11 Pressure	(psig)	10 - 20	30		
VAS-12 Flow Rate	(scfm)	TBD	TBD		
VAS-12 Pressure	(psig)	10 - 20	30		
VAS-13 Flow Rate	(scfm)	TBD	TBD	8.2	
VAS-13 Pressure	(psig)	10 - 20	30	22	
VAS-14 Flow Rate	(scfm)	TBD	TBD	12.0	
VAS-14 Pressure	(psig)	10 - 20	30	15	
VAS-15 Flow Rate	(scfm)	TBD	TBD	5.2	
VAS-15 Pressure	(psig)	10 - 20	30	12	
VAS-16 Flow Rate	(scfm)	TBD	TBD	9.7	9.6
VAS-16 Pressure	(psig)	10 - 20	30	12	12
VAS-17 Flow Rate	(scfm)	TBD	TBD	7.4	7.5
VAS-17 Pressure	(psig)	10 - 20	30	0	0

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	Lewis Drive, Belton, South Carolina

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2-26-20/1000	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020446A Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	3.5	|
VAS-18 Pressure	(psig)	10 - 20	30	6	|
VAS-19 Flow Rate	(scfm)	TBD	TBD	7.8	|
VAS-19 Pressure	(psig)	10 - 20	30	12	|
VAS-20 Flow Rate	(scfm)	TBD	TBD	14.3	14.4
VAS-20 Pressure	(psig)	10 - 20	30	22	22
VAS-21 Flow Rate	(scfm)	TBD	TBD	6.1	11.2
VAS-21 Pressure	(psig)	10 - 20	30	20	24
VAS-22 Flow Rate	(scfm)	TBD	TBD	9.6	11.1
VAS-22 Pressure	(psig)	10 - 20	30	20	22
VAS-23 Flow Rate	(scfm)	TBD	TBD	11.3	13.2
VAS-23 Pressure	(psig)	10 - 20	30	25	28
VAS-24 Flow Rate	(scfm)	TBD	TBD	8.7	11.0
VAS-24 Pressure	(psig)	10 - 20	30	24	14
VAS-25 Flow Rate	(scfm)	TBD	TBD	11.6	|
VAS-25 Pressure	(psig)	10 - 20	30	22	|
VAS-26 Flow Rate	(scfm)	TBD	TBD	6.4	|
VAS-26 Pressure	(psig)	10 - 20	30	32	|
VAS-27 Flow Rate	(scfm)	TBD	TBD	6.0	|
VAS-27 Pressure	(psig)	10 - 20	30	30	|
VAS-28 Flow Rate	(scfm)	TBD	TBD	7.3	|
VAS-28 Pressure	(psig)	10 - 20	30	20	|
VAS-29 Flow Rate	(scfm)	TBD	TBD	9.4	|
VAS-29 Pressure	(psig)	10 - 20	30	15	|
VAS-30 Flow Rate	(scfm)	TBD	TBD	10.1	|
VAS-30 Pressure	(psig)	10 - 20	30	8	|
VAS-31 Flow Rate	(scfm)	TBD	TBD	7.9	|
VAS-31 Pressure	(psig)	10 - 20	30	33	|
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.4	9.2
VAS-32 Pressure	(psig)	10 - 20	30	18	18
VAS-33 Flow Rate	(scfm)	TBD	TBD	10.3	10.2
VAS-33 Pressure	(psig)	10 - 20	30	20	20
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.0	9.2
VAS-34 Pressure	(psig)	10 - 20	30	22	21

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2-2 B20/1100	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-35 Pressure	(psig)	10 - 20	30	30	
VAS-36 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-36 Pressure	(psig)	10 - 20	30	20	
VAS-37 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-37 Pressure	(psig)	10 - 20	30	10	
VAS-38 Flow Rate	(scfm)	TBD	TBD	9.6	
VAS-38 Pressure	(psig)	10 - 20	30	12	
VAS-39 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-39 Pressure	(psig)	10 - 20	30	19	
VAS-40 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-40 Pressure	(psig)	10 - 20	30	22	
VAS-41 Flow Rate	(scfm)	TBD	TBD		8.7
VAS-41 Pressure	(psig)	10 - 20	30		14
VAS-42A Flow Rate	(scfm)	TBD	TBD	8.9	8.9
VAS-42A Pressure	(psig)	10 - 20	30	15	15
VAS-43A Flow Rate	(scfm)	TBD	TBD		7.3
VAS-43A Pressure	(psig)	10 - 20	30		36
VAS-44A Flow Rate	(scfm)	TBD	TBD		3.2
VAS-44A Pressure	(psig)	10 - 20	30		21
VAS-45 Flow Rate	(scfm)	TBD	TBD		5.7
VAS-45 Pressure	(psig)	10 - 20	30		22
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	15.0	15.0
VAS-47 Pressure	(psig)	10 - 20	30	16	14
VAS-48 Flow Rate	(scfm)	TBD	TBD	14.8	14.8
VAS-48 Pressure	(psig)	10 - 20	30	16	16
VAS-49 Flow Rate	(scfm)	TBD	TBD	14.6	14.6
VAS-49 Pressure	(psig)	10 - 20	30	18	18
VAS-50 Flow Rate	(scfm)	TBD	TBD	16.0	15.0
VAS-50 Pressure	(psig)	10 - 20	30	15	15
VAS-51 Flow Rate	(scfm)	TBD	TBD	15.2	15.4
VAS-51 Pressure	(psig)	10 - 20	30	15	15

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
2-26-20/1000	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	14.8	14.8
VAS-52 Pressure	(psig)	10 - 20	30	17	17
VAS-53 Flow Rate	(scfm)	TBD	TBD	13.8	14.8
VAS-53 Pressure	(psig)	10 - 20	30	10	12
VAS-54 Flow Rate	(scfm)	TBD	TBD	14.2	14.6
VAS-54 Pressure	(psig)	10 - 20	30	12	12
VAS-55 Flow Rate	(scfm)	TBD	TBD	12.4	14.6
VAS-55 Pressure	(psig)	10 - 20	30	~~10~~ 10	10
VAS-56 Flow Rate	(scfm)	TBD	TBD	11.6	15.1
VAS-56 Pressure	(psig)	10 - 20	30	8	8
VAS-57 Flow Rate	(scfm)	TBD	TBD	13.3	14.6
VAS-57 Pressure	(psig)	10 - 20	30	12	12
VAS-58 Flow Rate	(scfm)	TBD	TBD	13.6	15.0
VAS-58 Pressure	(psig)	10 - 20	30	12	12
VAS-59 Flow Rate	(scfm)	TBD	TBD	14.4	14.7
VAS-59 Pressure	(psig)	10 - 20	30	10	10
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.4	14.4
BCA-01 Pressure	(psig)	0 - 5	5	18	18
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.9	15.0
BCA-02 Pressure	(psig)	0 - 5	5	20	18

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
2-20-20/1000	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)	—	DAM IN CULVERT
~~Perform air monitoring near Cupboard Creek.~~	~~Each visit~~	~~Yes / No~~	~~Yes / No~~	—	
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
--	--				
--	--				

Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: 2" OF RAIN SINCE 2/19.
REDUCED FLOW AT VAS-19 + ~~19~~ DUE TO DAYLIGHTING
INCREASED FLOW AT VAS-20, 21, 22, 23 + 24 ~ 3-4 SCFM
HAS WELLS REDUCED IN FLOW, HAS-1 + 2 ~ 400 SCFM +
HAS-3 ~ 200 SCFM

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3/4/2020 1215	Scott Sullivan	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	Yes	
Air Compressor 1 Run Time / LOAD	(hours)	NA	NA	22969:09 / 19706:55	
Air Compressor 1 Temp	(F)	60 - 100	110	181	
Air Compressor 1 Pressure	(psig)	90 - 110	100	102	
Air Compressor 2 Run Time	(hours)	NA	NA	20425:53 / 14040:36	
Air Compressor 2 Temp	(F)	60 - 100	110	179	
Air Compressor 2 Pressure	(psig)	90 - 110	100	102	
Receiver Tank Pressure	(psig)	90 - 110	100	112	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	105	
Manifold Temperature	(F)	60 - 100	110	70	
Manifold Flow Rate	(scfm)	TBD	TBD	1669	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	400.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	401.2	
HAS-1 Valve Position	(%)	TBD	TBD	55.5	
HAS-1 Pressure	(psig)	10 - 20	30	22	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	400.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	399.1	
HAS-2 Valve Position	(%)	TBD	TBD	20.7	
HAS-2 Pressure	(psig)	10 - 20	30	23	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	200.0	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	196.5	
HAS-3 Valve Position	(%)	TBD	TBD	22.4	
HAS-3 Pressure	(psig)	10 - 20	30	17	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

High Pressure/Low Flow

shut down VASIS to investigate possible short circuit by Daylighting in Area

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3/4/2020 12:15	Scott Smith/A		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	14.6	
VAS-01 Pressure	(psig)	10 - 20	30	23	
VAS-02 Flow Rate	(scfm)	TBD	TBD	2.6 } did not adjust	
VAS-02 Pressure	(psig)	10 - 20	30	44 }	
VAS-03 Flow Rate	(scfm)	TBD	TBD	13.8	
VAS-03 Pressure	(psig)	10 - 20	30	22	
VAS-04 Flow Rate	(scfm)	TBD	TBD	5.6 } increase to	
VAS-04 Pressure	(psig)	10 - 20	30	3 } 10.0 scfm/3psi	
VAS-05 Flow Rate	(scfm)	TBD	TBD	—	
VAS-05 Pressure	(psig)	10 - 20	30	—	
VAS-06 Flow Rate	(scfm)	TBD	TBD	—	
VAS-06 Pressure	(psig)	10 - 20	30	—	
VAS-07 Flow Rate	(scfm)	TBD	TBD	8.7 }	11.3
VAS-07 Pressure	(psig)	10 - 20	30	7 }	8
VAS-08 Flow Rate	(scfm)	TBD	TBD	10.4 }	12.6
VAS-08 Pressure	(psig)	10 - 20	30	14 }	15
VAS-09 Flow Rate	(scfm)	TBD	TBD	—	
VAS-09 Pressure	(psig)	10 - 20	30	—	
VAS-10 Flow Rate	(scfm)	TBD	TBD	—	
VAS-10 Pressure	(psig)	10 - 20	30	—	
VAS-11 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-11 Pressure	(psig)	10 - 20	30	20	
VAS-12 Flow Rate	(scfm)	TBD	TBD	6.2	
VAS-12 Pressure	(psig)	10 - 20	30	15	
VAS-13 Flow Rate	(scfm)	TBD	TBD	6.9	
VAS-13 Pressure	(psig)	10 - 20	30	22	
VAS-14 Flow Rate	(scfm)	TBD	TBD	10.4	
VAS-14 Pressure	(psig)	10 - 20	30	17	
VAS-15 Flow Rate	(scfm)	TBD	TBD	3.2	
VAS-15 Pressure	(psig)	10 - 20	30	16	
VAS-16 Flow Rate	(scfm)	TBD	TBD	9.7	reduce flow,
VAS-16 Pressure	(psig)	10 - 20	30	10	daylighted
VAS-17 Flow Rate	(scfm)	TBD	TBD	7.5	creek
VAS-17 Pressure	(psig)	10 - 20	30	3	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3/4/2020 1245	Scott Sanicola		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	2.4	believed issue / Daylighted
VAS-18 Pressure	(psig)	10 - 20	30	0	NO THIS LINE / AREA
VAS-19 Flow Rate	(scfm)	TBD	TBD	2.5	
VAS-19 Pressure	(psig)	10 - 20	30	13	
VAS-20 Flow Rate	(scfm)	TBD	TBD	14.5	14.6
VAS-20 Pressure	(psig)	10 - 20	30	23	23
VAS-21 Flow Rate	(scfm)	TBD	TBD	12.2	14.3
VAS-21 Pressure	(psig)	10 - 20	30	22	24
VAS-22 Flow Rate	(scfm)	TBD	TBD	11.8	13.9
VAS-22 Pressure	(psig)	10 - 20	30	22	23
VAS-23 Flow Rate	(scfm)	TBD	TBD	14.2	14.3
VAS-23 Pressure	(psig)	10 - 20	30	25	26
VAS-24 Flow Rate	(scfm)	TBD	TBD	13.2	14.2
VAS-24 Pressure	(psig)	10 - 20	30	27	28
VAS-25 Flow Rate	(scfm)	TBD	TBD	10.3	
VAS-25 Pressure	(psig)	10 - 20	30	26	
VAS-26 Flow Rate	(scfm)	TBD	TBD	4.2	
VAS-26 Pressure	(psig)	10 - 20	30	32	
VAS-27 Flow Rate	(scfm)	TBD	TBD	5.2	
VAS-27 Pressure	(psig)	10 - 20	30	32	
VAS-28 Flow Rate	(scfm)	TBD	TBD	6.3	8.7
VAS-28 Pressure	(psig)	10 - 20	30	18	20
VAS-29 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-29 Pressure	(psig)	10 - 20	30	16	
VAS-30 Flow Rate	(scfm)	TBD	TBD	10.7	
VAS-30 Pressure	(psig)	10 - 20	30	8	
VAS-31 Flow Rate	(scfm)	TBD	TBD	6.0	
VAS-31 Pressure	(psig)	10 - 20	30	36	
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.3	
VAS-32 Pressure	(psig)	10 - 20	30	19	
VAS-33 Flow Rate	(scfm)	TBD	TBD	10.2	
VAS-33 Pressure	(psig)	10 - 20	30	20	
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-34 Pressure	(psig)	10 - 20	30	22	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3/4/2020 1215	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD		
VAS-41 Pressure	(psig)	10 - 20	30		
VAS-42A Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-42A Pressure	(psig)	10 - 20	30	16	
VAS-43A Flow Rate	(scfm)	TBD	TBD	—	
VAS-43A Pressure	(psig)	10 - 20	30	—	
VAS-44A Flow Rate	(scfm)	TBD	TBD	—	
VAS-44A Pressure	(psig)	10 - 20	30	—	
VAS-45 Flow Rate	(scfm)	TBD	TBD	6.6	
VAS-45 Pressure	(psig)	10 - 20	30	21	
VAS-46 Flow Rate	(scfm)	TBD	TBD	—	
VAS-46 Pressure	(psig)	10 - 20	30	—	
VAS-47 Flow Rate	(scfm)	TBD	TBD	14.7	
VAS-47 Pressure	(psig)	10 - 20	30	13	
VAS-48 Flow Rate	(scfm)	TBD	TBD	15.0	
VAS-48 Pressure	(psig)	10 - 20	30	16	
VAS-49 Flow Rate	(scfm)	TBD	TBD	14.10	
VAS-49 Pressure	(psig)	10 - 20	30	17	
VAS-50 Flow Rate	(scfm)	TBD	TBD	13.4	15.0
VAS-50 Pressure	(psig)	10 - 20	30	12	13
VAS-51 Flow Rate	(scfm)	TBD	TBD	14.9	
VAS-51 Pressure	(psig)	10 - 20	30	15	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3/4/2020 1245	Scott Smith		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	14.8	
VAS-52 Pressure	(psig)	10 - 20	30	17	
VAS-53 Flow Rate	(scfm)	TBD	TBD	14.8	
VAS-53 Pressure	(psig)	10 - 20	30	12	
VAS-54 Flow Rate	(scfm)	TBD	TBD	14.9	
VAS-54 Pressure	(psig)	10 - 20	30	12	
VAS-55 Flow Rate	(scfm)	TBD	TBD	15.7	15.0
VAS-55 Pressure	(psig)	10 - 20	30	6	6
VAS-56 Flow Rate	(scfm)	TBD	TBD	15.2	
VAS-56 Pressure	(psig)	10 - 20	30	4	
VAS-57 Flow Rate	(scfm)	TBD	TBD	14.7	
VAS-57 Pressure	(psig)	10 - 20	30	5	
VAS-58 Flow Rate	(scfm)	TBD	TBD	15.0	
VAS-58 Pressure	(psig)	10 - 20	30	4	
VAS-59 Flow Rate	(scfm)	TBD	TBD	14.5	
VAS-59 Pressure	(psig)	10 - 20	30	5	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.2	
BCA-01 Pressure	(psig)	0 - 5	5	17	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.9	
BCA-02 Pressure	(psig)	0 - 5	5	19	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
3/4/2020 RLS	Scott Smith	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek.	Each visit	Yes / No	Yes / (No)		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) No	Yes / (No)		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / (No)		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / (No)		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / (No)	Yes / No	Due March	
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / (No)	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	Yes / (No)	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:
→ Inspect extinguishers for monthly
→ Inspect and clean Receiver drain line basket strainer

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3-13-20/1700	T. HALL	~	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	
Air Compressor 1 Run Time	(hours)	NA	NA	23,187:14	
Air Compressor 1 Temp	(F)	60 - 100	110	182	
Air Compressor 1 Pressure	(psig)	90 - 110	100	101	
Air Compressor 2 Run Time	(hours)	NA	NA	20,683:57	
Air Compressor 2 Temp	(F)	60 - 100	110	188	
Air Compressor 2 Pressure	(psig)	90 - 110	100	101	
Receiver Tank Pressure	(psig)	90 - 110	100	112	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	100	
Manifold Temperature	(F)	60 - 100	110	90	
Manifold Flow Rate	(scfm)	TBD	TBD	1734	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	400.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	396.1	
HAS-1 Valve Position	(%)	TBD	TBD	56.7	
HAS-1 Pressure	(psig)	10 - 20	30	22	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	400.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	399.6	
HAS-2 Valve Position	(%)	TBD	TBD	22.7	
HAS-2 Pressure	(psig)	10 - 20	30	23	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	200.0	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	201.9	
HAS-3 Valve Position	(%)	TBD	TBD	22.1	
HAS-3 Pressure	(psig)	10 - 20	30	20	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5
Lewis Drive	Belton, SC	Bill Waldrop/RAL	Mark Strong/CLT	Lewis Drive, Belton, South Carolina

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3.13.20/1300	T. HALL	—	Air Compressors Condensate Treatment	SuRav TS-20-200 Reko Qwik Pure 350	UIC Permit To Operate: SCH#03029469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	13.6	
VAS-01 Pressure	(psig)	10 - 20	30	22	
VAS-02 Flow Rate	(scfm)	TBD	TBD	2.5	
VAS-02 Pressure	(psig)	10 - 20	30	43	
VAS-03 Flow Rate	(scfm)	TBD	TBD	12.5	
VAS-03 Pressure	(psig)	10 - 20	30	2C	
VAS-04 Flow Rate	(scfm)	TBD	TBD	9.8	
VAS-04 Pressure	(psig)	10 - 20	30	0	
VAS-05 Flow Rate	(scfm)	TBD	TBD	5.1	
VAS-05 Pressure	(psig)	10 - 20	30	5	
VAS-06 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-06 Pressure	(psig)	10 - 20	30	10	
VAS-07 Flow Rate	(scfm)	TBD	TBD	11.7	
VAS-07 Pressure	(psig)	10 - 20	30	8	
VAS-08 Flow Rate	(scfm)	TBD	TBD	13.9	
VAS-08 Pressure	(psig)	10 - 20	30	15	
VAS-09 Flow Rate	(scfm)	TBD	TBD	10	
VAS-09 Pressure	(psig)	10 - 20	30	10	
VAS-10 Flow Rate	(scfm)	TBD	TBD	5.8	
VAS-10 Pressure	(psig)	10 - 20	30	17	
VAS-11 Flow Rate	(scfm)	TBD	TBD	11.2	
VAS-11 Pressure	(psig)	10 - 20	30	20	
VAS-12 Flow Rate	(scfm)	TBD	TBD	4.5	
VAS-12 Pressure	(psig)	10 - 20	30	17	
VAS-13 Flow Rate	(scfm)	TBD	TBD		
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD	7.7	
VAS-16 Pressure	(psig)	10 - 20	30	10	
VAS-17 Flow Rate	(scfm)	TBD	TBD	6.9	
VAS-17 Pressure	(psig)	10 - 20	30	0	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	Lewis Drive, Belton, South Carolina

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3-13-19/1300	T. Hill	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD	14.1	
VAS-20 Pressure	(psig)	10 - 20	30	24	
VAS-21 Flow Rate	(scfm)	TBD	TBD	14.8	
VAS-21 Pressure	(psig)	10 - 20	30	22	
VAS-22 Flow Rate	(scfm)	TBD	TBD	14.0	
VAS-22 Pressure	(psig)	10 - 20	30	22	
VAS-23 Flow Rate	(scfm)	TBD	TBD	13.9	
VAS-23 Pressure	(psig)	10 - 20	30	25	
VAS-24 Flow Rate	(scfm)	TBD	TBD	14.3	
VAS-24 Pressure	(psig)	10 - 20	30	26	
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD	8.8	
VAS-29 Pressure	(psig)	10 - 20	30	12	
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD	8.5	
VAS-32 Pressure	(psig)	10 - 20	30	18	
VAS-33 Flow Rate	(scfm)	TBD	TBD	9.4	
VAS-33 Pressure	(psig)	10 - 20	30	19	
VAS-34 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-34 Pressure	(psig)	10 - 20	30	20	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3-13-20/0700	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	12.0	
VAS-35 Pressure	(psig)	10 - 20	30	28	
VAS-36 Flow Rate	(scfm)	TBD	TBD	8.0	
VAS-36 Pressure	(psig)	10 - 20	30	18	
VAS-37 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-37 Pressure	(psig)	10 - 20	30	10	
VAS-38 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-38 Pressure	(psig)	10 - 20	30	10	
VAS-39 Flow Rate	(scfm)	TBD	TBD	7.4	
VAS-39 Pressure	(psig)	10 - 20	30	18	
VAS-40 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-40 Pressure	(psig)	10 - 20	30	20	
VAS-41 Flow Rate	(scfm)	TBD	TBD	8.3	
VAS-41 Pressure	(psig)	10 - 20	30	13	
VAS-42A Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-42A Pressure	(psig)	10 - 20	30	14	
VAS-43A Flow Rate	(scfm)	TBD	TBD	5.4	
VAS-43A Pressure	(psig)	10 - 20	30	38	
VAS-44A Flow Rate	(scfm)	TBD	TBD	|	
VAS-44A Pressure	(psig)	10 - 20	30	|	
VAS-45 Flow Rate	(scfm)	TBD	TBD	|	
VAS-45 Pressure	(psig)	10 - 20	30	|	
VAS-46 Flow Rate	(scfm)	TBD	TBD	|	
VAS-46 Pressure	(psig)	10 - 20	30	|	
VAS-47 Flow Rate	(scfm)	TBD	TBD	14.4	
VAS-47 Pressure	(psig)	10 - 20	30	12	
VAS-48 Flow Rate	(scfm)	TBD	TBD	14.1	
VAS-48 Pressure	(psig)	10 - 20	30	14	
VAS-49 Flow Rate	(scfm)	TBD	TBD	14.2	
VAS-49 Pressure	(psig)	10 - 20	30	15	
VAS-50 Flow Rate	(scfm)	TBD	TBD	14.4	
VAS-50 Pressure	(psig)	10 - 20	30	12	
VAS-51 Flow Rate	(scfm)	TBD	TBD	14.5	
VAS-51 Pressure	(psig)	10 - 20	30	12	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3-13-20/1700	T. Hall	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	13.8	
VAS-52 Pressure	(psig)	10 - 20	30	14	
VAS-53 Flow Rate	(scfm)	TBD	TBD	14.7	
VAS-53 Pressure	(psig)	10 - 20	30	12	
VAS-54 Flow Rate	(scfm)	TBD	TBD	14.6	
VAS-54 Pressure	(psig)	10 - 20	30	12	
VAS-55 Flow Rate	(scfm)	TBD	TBD	12.8	
VAS-55 Pressure	(psig)	10 - 20	30	8	
VAS-56 Flow Rate	(scfm)	TBD	TBD	14.4	
VAS-56 Pressure	(psig)	10 - 20	30	6	
VAS-57 Flow Rate	(scfm)	TBD	TBD	14.0	
VAS-57 Pressure	(psig)	10 - 20	30	10	
VAS-58 Flow Rate	(scfm)	TBD	TBD	14.5	
VAS-58 Pressure	(psig)	10 - 20	30	12	
VAS-59 Flow Rate	(scfm)	TBD	TBD	14.2	
VAS-59 Pressure	(psig)	10 - 20	30	8	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.0	
BCA-01 Pressure	(psig)	0 - 5	5	18	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.5	
BCA-02 Pressure	(psig)	0 - 5	5	18	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
3-13-20/1700	T. Hall	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek.	Each visit	~~Yes / No~~	~~Yes / No~~		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
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Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / (No)		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / (No)		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	Yes / No	Yes / No		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	Lewis Drive, Belton, South Carolina

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3-16-20/1400	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	
Air Compressor 1 Run Time	(hours)	NA	NA	23,259:32	
Air Compressor 1 Temp	(F)	60 - 100	110	102	
Air Compressor 1 Pressure	(psig)	90 - 110	100	180	
Air Compressor 2 Run Time	(hours)	NA	NA	20,756:11	
Air Compressor 2 Temp	(F)	60 - 100	110	178	
Air Compressor 2 Pressure	(psig)	90 - 110	100	102	
Receiver Tank Pressure	(psig)	90 - 110	100	115	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	102	
Manifold Temperature	(F)	60 - 100	110	68	
Manifold Flow Rate	(scfm)	TBD	TBD	1931	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	400	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	399.0	
HAS-1 Valve Position	(%)	TBD	TBD	55.5	
HAS-1 Pressure	(psig)	10 - 20	30	22	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	400	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	399.9	
HAS-2 Valve Position	(%)	TBD	TBD	20.4	
HAS-2 Pressure	(psig)	10 - 20	30	24	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	206	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	200.9	
HAS-3 Valve Position	(%)	TBD	TBD	21.3	
HAS-3 Pressure	(psig)	10 - 20	30	18	

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3-16-20/1440	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03120469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	14.2	
VAS-01 Pressure	(psig)	10 - 20	30	24	
VAS-02 Flow Rate	(scfm)	TBD	TBD	2.6	
VAS-02 Pressure	(psig)	10 - 20	30	43	
VAS-03 Flow Rate	(scfm)	TBD	TBD	12.3	
VAS-03 Pressure	(psig)	10 - 20	30	22	
VAS-04 Flow Rate	(scfm)	TBD	TBD	10.3	
VAS-04 Pressure	(psig)	10 - 20	30	2	
VAS-05 Flow Rate	(scfm)	TBD	TBD	5.6	
VAS-05 Pressure	(psig)	10 - 20	30	5	
VAS-06 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-06 Pressure	(psig)	10 - 20	30	10	
VAS-07 Flow Rate	(scfm)	TBD	TBD	12.4	
VAS-07 Pressure	(psig)	10 - 20	30	10	
VAS-08 Flow Rate	(scfm)	TBD	TBD	13.1	
VAS-08 Pressure	(psig)	10 - 20	30	17	
VAS-09 Flow Rate	(scfm)	TBD	TBD	10.9	
VAS-09 Pressure	(psig)	10 - 20	30	10	
VAS-10 Flow Rate	(scfm)	TBD	TBD	6.9	
VAS-10 Pressure	(psig)	10 - 20	30	18	
VAS-11 Flow Rate	(scfm)	TBD	TBD	12.7	
VAS-11 Pressure	(psig)	10 - 20	30	20	
VAS-12 Flow Rate	(scfm)	TBD	TBD	5.4	
VAS-12 Pressure	(psig)	10 - 20	30	17	
VAS-13 Flow Rate	(scfm)	TBD	TBD		
VAS-13 Pressure	(psig)	10 - 20	30		
VAS-14 Flow Rate	(scfm)	TBD	TBD		
VAS-14 Pressure	(psig)	10 - 20	30		
VAS-15 Flow Rate	(scfm)	TBD	TBD		
VAS-15 Pressure	(psig)	10 - 20	30		
VAS-16 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-16 Pressure	(psig)	10 - 20	30	10	
VAS-17 Flow Rate	(scfm)	TBD	TBD	7.3	
VAS-17 Pressure	(psig)	10 - 20	30	0	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3.16.20/1400	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD	14.5	
VAS-20 Pressure	(psig)	10 - 20	30	24	
VAS-21 Flow Rate	(scfm)	TBD	TBD	15.6	
VAS-21 Pressure	(psig)	10 - 20	30	24	
VAS-22 Flow Rate	(scfm)	TBD	TBD	14.5	
VAS-22 Pressure	(psig)	10 - 20	30	25	
VAS-23 Flow Rate	(scfm)	TBD	TBD	14.1	
VAS-23 Pressure	(psig)	10 - 20	30	24	
VAS-24 Flow Rate	(scfm)	TBD	TBD	15.2	
VAS-24 Pressure	(psig)	10 - 20	30	29	
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.3	
VAS-32 Pressure	(psig)	10 - 20	30	18	
VAS-33 Flow Rate	(scfm)	TBD	TBD	10.1	
VAS-33 Pressure	(psig)	10 - 20	30	20	
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-34 Pressure	(psig)	10 - 20	30	20	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3/6 2019 1400	T. Hall	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-35 Pressure	(psig)	10 - 20	30	36	
VAS-36 Flow Rate	(scfm)	TBD	TBD	8.7	
VAS-36 Pressure	(psig)	10 - 20	30	18	
VAS-37 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-37 Pressure	(psig)	10 - 20	30	16	
VAS-38 Flow Rate	(scfm)	TBD	TBD	10.6	
VAS-38 Pressure	(psig)	10 - 20	30	12	
VAS-39 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-39 Pressure	(psig)	10 - 20	30	20	
VAS-40 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-40 Pressure	(psig)	10 - 20	30	22	
VAS-41 Flow Rate	(scfm)	TBD	TBD	9.0	
VAS-41 Pressure	(psig)	10 - 20	30	15	
VAS-42A Flow Rate	(scfm)	TBD	TBD	9.1	
VAS-42A Pressure	(psig)	10 - 20	30	15	
VAS-43A Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-43A Pressure	(psig)	10 - 20	30	38	
VAS-44A Flow Rate	(scfm)	TBD	TBD	2.8	
VAS-44A Pressure	(psig)	10 - 20	30	33	
VAS-45 Flow Rate	(scfm)	TBD	TBD		
VAS-45 Pressure	(psig)	10 - 20	30		
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	15.0	
VAS-47 Pressure	(psig)	10 - 20	30	14	
VAS-48 Flow Rate	(scfm)	TBD	TBD	14.8	
VAS-48 Pressure	(psig)	10 - 20	30	15	
VAS-49 Flow Rate	(scfm)	TBD	TBD	14.5	
VAS-49 Pressure	(psig)	10 - 20	30	18	
VAS-50 Flow Rate	(scfm)	TBD	TBD	15.1	
VAS-50 Pressure	(psig)	10 - 20	30	13	
VAS-51 Flow Rate	(scfm)	TBD	TBD	14.8	
VAS-51 Pressure	(psig)	10 - 20	30	15	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintanance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3-16-20/1400	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	14.8	
VAS-52 Pressure	(psig)	10 - 20	30	18	
VAS-53 Flow Rate	(scfm)	TBD	TBD	15.6	
VAS-53 Pressure	(psig)	10 - 20	30	12	
VAS-54 Flow Rate	(scfm)	TBD	TBD	14.9	
VAS-54 Pressure	(psig)	10 - 20	30	12	
VAS-55 Flow Rate	(scfm)	TBD	TBD	12.9	
VAS-55 Pressure	(psig)	10 - 20	30	12	
VAS-56 Flow Rate	(scfm)	TBD	TBD	14.4	
VAS-56 Pressure	(psig)	10 - 20	30	8	
VAS-57 Flow Rate	(scfm)	TBD	TBD	14.6	
VAS-57 Pressure	(psig)	10 - 20	30	12	
VAS-58 Flow Rate	(scfm)	TBD	TBD	14.6	
VAS-58 Pressure	(psig)	10 - 20	30	12	
VAS-59 Flow Rate	(scfm)	TBD	TBD	14.7	
VAS-59 Pressure	(psig)	10 - 20	30	10	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.6	
BCA-01 Pressure	(psig)	0 - 5	5	18	
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.7	
BCA-02 Pressure	(psig)	0 - 5	5	18	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
3-16-20/1400	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCME03020449 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek.	Each visit	~~Yes~~ / ~~No~~	Yes / (No)		NO PID
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
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Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / (No)		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / (No)		
Inspect the two fire extinguishers for signs of detenoration. Shake contents.	Monthly	~~Yes~~ / ~~No~~	~~Yes~~ / ~~No~~		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	~~Yes~~ / ~~No~~	~~Yes~~ / ~~No~~		
Inspect various building components detailed in Section X.X.X.	Semi-Annually	~~Yes~~ / ~~No~~	~~Yes~~ / ~~No~~		
Test relief valve on receiver tank for proper operation.	Annually	~~Yes~~ / ~~No~~	~~Yes~~ / ~~No~~		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	~~Yes~~ / ~~No~~	~~Yes~~ / ~~No~~		
Calibrate EAD	Annually	~~Yes~~ / ~~No~~	~~Yes~~ / ~~No~~		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments: VAS-15 SHUTOFF 3-18-20 @ 0900 UNTIL WE CAN BETTER ADDRESS THE DAYLIGHTING SITUATION NEAR VAS-18.

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
3-23-20/1100	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	Yes / (No)		
Perform air monitoring near Cupboard Creek.	Each visit	~~Yes / (No)~~	~~Yes / No~~		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
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Equipment Maintenance	Frequency	Conditions Good?	Repaired/Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	Yes / No	Yes / No		
Inspect condensate system components. Drain and clean as needed.	Monthly	Yes / No	Yes / No		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	Yes / No	Yes / No		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	(Yes) / No	Yes / (No)	3/31/20	
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / No	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / No	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / No	Yes / No		
Calibrate EAD	Annually	Yes / No	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3.23.20/1100	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCME03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	YES	YES
Air Compressor 1 Run Time	(hours)	NA	NA	23,423:44	23,428:39
Air Compressor 1 Temp	(F)	60 - 100	110	179	181
Air Compressor 1 Pressure	(psig)	90 - 110	100	102	105
Air Compressor 2 Run Time	(hours)	NA	NA	20,920.27	20,925:23
Air Compressor 2 Temp	(F)	60 - 100	110	177	177
Air Compressor 2 Pressure	(psig)	90 - 110	100	102	106
Receiver Tank Pressure	(psig)	90 - 110	100	115	118
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	102	108
Manifold Temperature	(F)	60 - 100	110	62	64
Manifold Flow Rate	(scfm)	TBD	TBD	1770	1700
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	400.0	400.0
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	398.2	400.6
HAS-1 Valve Position	(%)	TBD	TBD	55.4	55.7
HAS-1 Pressure	(psig)	10 - 20	30	23	23
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	400.0	400.0
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	400.1	400.2
HAS-2 Valve Position	(%)	TBD	TBD	20.6	21.1
HAS-2 Pressure	(psig)	10 - 20	30	25	25
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	200.0	200.0
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	189.9	192.3
HAS-3 Valve Position	(%)	TBD	TBD	22.0	22.0
HAS-3 Pressure	(psig)	10 - 20	30	18	18

Parts Needed:	
Parts Installed:	

Notes (include alarms since previous visit):

VAS #4 HAD HIGH ALARM FOR HIGH FLOW ON 3/22
S.SMIDA SHUTOFF ON 3/22. T.HALL TO INVESTIGATE ON 3/23

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	Lewis Drive, Belton, South Carolina

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3-23-20/1100	T. HALL	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03120469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	13.9	13.9
VAS-01 Pressure	(psig)	10 - 20	30	24	24
VAS-02 Flow Rate	(scfm)	TBD	TBD	2.4	2.4
VAS-02 Pressure	(psig)	10 - 20	30	43	43
VAS-03 Flow Rate	(scfm)	TBD	TBD	10.5	10.7
VAS-03 Pressure	(psig)	10 - 20	30	24	24
VAS-04 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-04 Pressure	(psig)	10 - 20	30	|	|
VAS-05 Flow Rate	(scfm)	TBD	TBD	5.4	5.6
VAS-05 Pressure	(psig)	10 - 20	30	5	7
VAS-06 Flow Rate	(scfm)	TBD	TBD	8.7	8.7
VAS-06 Pressure	(psig)	10 - 20	30	10	10
VAS-07 Flow Rate	(scfm)	TBD	TBD	12.2	12.2
VAS-07 Pressure	(psig)	10 - 20	30	10	10
VAS-08 Flow Rate	(scfm)	TBD	TBD	12.8	12.9
VAS-08 Pressure	(psig)	10 - 20	30	17	18
VAS-09 Flow Rate	(scfm)	TBD	TBD	10.8	10.7
VAS-09 Pressure	(psig)	10 - 20	30	11	11
VAS-10 Flow Rate	(scfm)	TBD	TBD	8.5	8.2
VAS-10 Pressure	(psig)	10 - 20	30	17	17
VAS-11 Flow Rate	(scfm)	TBD	TBD	14.1	|
VAS-11 Pressure	(psig)	10 - 20	30	20	|
VAS-12 Flow Rate	(scfm)	TBD	TBD	5.6	|
VAS-12 Pressure	(psig)	10 - 20	30	15	|
VAS-13 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-13 Pressure	(psig)	10 - 20	30	|	|
VAS-14 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-14 Pressure	(psig)	10 - 20	30	|	|
VAS-15 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-15 Pressure	(psig)	10 - 20	30	|	|
VAS-16 Flow Rate	(scfm)	TBD	TBD	8.0	8.0
VAS-16 Pressure	(psig)	10 - 20	30	12	11
VAS-17 Flow Rate	(scfm)	TBD	TBD	7.1	7.1
VAS-17 Pressure	(psig)	10 - 20	30	4	4

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3/23/20/1100	T. HALL		Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate SCHE030204469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD		
VAS-18 Pressure	(psig)	10 - 20	30		
VAS-19 Flow Rate	(scfm)	TBD	TBD		
VAS-19 Pressure	(psig)	10 - 20	30		
VAS-20 Flow Rate	(scfm)	TBD	TBD	13.8	14.0
VAS-20 Pressure	(psig)	10 - 20	30	23	23
VAS-21 Flow Rate	(scfm)	TBD	TBD	15.7	15.7
VAS-21 Pressure	(psig)	10 - 20	30	27	27
VAS-22 Flow Rate	(scfm)	TBD	TBD	14.6	14.6
VAS-22 Pressure	(psig)	10 - 20	30	25	25
VAS-23 Flow Rate	(scfm)	TBD	TBD	14.1	14.2
VAS-23 Pressure	(psig)	10 - 20	30	28	28
VAS-24 Flow Rate	(scfm)	TBD	TBD	15.4	15.3
VAS-24 Pressure	(psig)	10 - 20	30	29	29
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD	9.2	9.1
VAS-32 Pressure	(psig)	10 - 20	30	20	19
VAS-33 Flow Rate	(scfm)	TBD	TBD	9.9	9.9
VAS-33 Pressure	(psig)	10 - 20	30	20	20
VAS-34 Flow Rate	(scfm)	TBD	TBD	9.3	9.4
VAS-34 Pressure	(psig)	10 - 20	30	22	22

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3-23-20/1100	TTHALL	———	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD	10.7	|
VAS-35 Pressure	(psig)	10 - 20	30	30	|
VAS-36 Flow Rate	(scfm)	TBD	TBD	9.1	|
VAS-36 Pressure	(psig)	10 - 20	30	20	|
VAS-37 Flow Rate	(scfm)	TBD	TBD	9.3	|
VAS-37 Pressure	(psig)	10 - 20	30	11	|
VAS-38 Flow Rate	(scfm)	TBD	TBD	9.9	|
VAS-38 Pressure	(psig)	10 - 20	30	12	|
VAS-39 Flow Rate	(scfm)	TBD	TBD	7.9	|
VAS-39 Pressure	(psig)	10 - 20	30	20	|
VAS-40 Flow Rate	(scfm)	TBD	TBD	8.4	|
VAS-40 Pressure	(psig)	10 - 20	30	22	|
VAS-41 Flow Rate	(scfm)	TBD	TBD	9.3	9.5
VAS-41 Pressure	(psig)	10 - 20	30	15	15
VAS-42A Flow Rate	(scfm)	TBD	TBD	9.0	8.7
VAS-42A Pressure	(psig)	10 - 20	30	16	16
VAS-43A Flow Rate	(scfm)	TBD	TBD	11.9	12.0
VAS-43A Pressure	(psig)	10 - 20	30	38	38
VAS-44A Flow Rate	(scfm)	TBD	TBD	4.3	4.3
VAS-44A Pressure	(psig)	10 - 20	30	32	32
VAS-45 Flow Rate	(scfm)	TBD	TBD	|	7.9
VAS-45 Pressure	(psig)	10 - 20	30	|	28
VAS-46 Flow Rate	(scfm)	TBD	TBD	|	|
VAS-46 Pressure	(psig)	10 - 20	30	|	|
VAS-47 Flow Rate	(scfm)	TBD	TBD	14.9	14.7
VAS-47 Pressure	(psig)	10 - 20	30	15	15
VAS-48 Flow Rate	(scfm)	TBD	TBD	14.4	14.4
VAS-48 Pressure	(psig)	10 - 20	30	17	16
VAS-49 Flow Rate	(scfm)	TBD	TBD	14.5	14.6
VAS-49 Pressure	(psig)	10 - 20	30	18	18
VAS-50 Flow Rate	(scfm)	TBD	TBD	14.6	15.0
VAS-50 Pressure	(psig)	10 - 20	30	14	14
VAS-51 Flow Rate	(scfm)	TBD	TBD	13.8	14.3
VAS-51 Pressure	(psig)	10 - 20	30	14	14

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3.23.20/ 1100	T. Hall	—	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	14.5	14.5
VAS-52 Pressure	(psig)	10 - 20	30	17	18
VAS-53 Flow Rate	(scfm)	TBD	TBD	15.1	14.7
VAS-53 Pressure	(psig)	10 - 20	30	13	12
VAS-54 Flow Rate	(scfm)	TBD	TBD	14.9	14.5
VAS-54 Pressure	(psig)	10 - 20	30	12	12
VAS-55 Flow Rate	(scfm)	TBD	TBD	13.2	13.5
VAS-55 Pressure	(psig)	10 - 20	30	12	12
VAS-56 Flow Rate	(scfm)	TBD	TBD	14.0	14.5
VAS-56 Pressure	(psig)	10 - 20	30	10	10
VAS-57 Flow Rate	(scfm)	TBD	TBD	14.4	14.5
VAS-57 Pressure	(psig)	10 - 20	30	12	12
VAS-58 Flow Rate	(scfm)	TBD	TBD	14.8	15.1
VAS-58 Pressure	(psig)	10 - 20	30	15	15
VAS-59 Flow Rate	(scfm)	TBD	TBD	14.4	14.6
VAS-59 Pressure	(psig)	10 - 20	30	10	10
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	14.5	14.6
BCA-01 Pressure	(psig)	0 - 5	5	18	19
BCA-02 Flow Rate	(scfm)	TBD	TBD	14.5	14.6
BCA-02 Pressure	(psig)	0 - 5	5	20	20

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 1 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3/31/2020 0845	Scott Smith	Tyler Hall	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Exterior Components	(Units)	Optimal Level	Max Level	Arrival	Departure
System Operating	(Yes/No)	NA	NA	Yes	
Air Compressor 1 Run Time	(hours)	NA	NA	23612:47 / 20550:33	
Air Compressor 1 Temp	(F)	60 - 100	110	180	
Air Compressor 1 Pressure	(psig)	90 - 110	100	102	
Air Compressor 2 Run Time	(hours)	NA	NA	21109:31 / 19604:14	
Air Compressor 2 Temp	(F)	60 - 100	110	181	
Air Compressor 2 Pressure	(psig)	90 - 110	100	102	
Receiver Tank Pressure	(psig)	90 - 110	100	115	
Interior Manifold	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
Manifold Pressure	(psig)	90 - 110	100	110	
Manifold Temperature	(F)	60 - 100	110	72	
Manifold Flow Rate	(scfm)	TBD	TBD	1714	
Horizontal Wells	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
HAS-1 Target Flow Rate	(scfm)	TBD	TBD	400.0	
HAS-1 Actual Flow Rate	(scfm)	TBD	TBD	349.2	
HAS-1 Valve Position	(%)	TBD	TBD	50.1	
HAS-1 Pressure	(psig)	10 - 20	30	23	
HAS-2 Target Flow Rate	(scfm)	TBD	TBD	400.0	
HAS-2 Actual Flow Rate	(scfm)	TBD	TBD	348.8	
HAS-2 Valve Position	(%)	TBD	TBD	22.0	
HAS-2 Pressure	(psig)	10 - 20	30	25	
HAS-3 Target Flow Rate	(scfm)	TBD	TBD	200.0	
HAS-3 Actual Flow Rate	(scfm)	TBD	TBD	213.2	
HAS-3 Valve Position	(%)	TBD	TBD	21.8	
HAS-3 Pressure	(psig)	10 - 20	30	19	

Parts Needed:	
Parts Installed:	Replaced regulator VAS-04

Notes (include alarms since previous visit):

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 2 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3/31/2020 0845	Scott Simms	Tyler Hall	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-01 Flow Rate	(scfm)	TBD	TBD	13.7	
VAS-01 Pressure	(psig)	10 - 20	30	22	
VAS-02 Flow Rate	(scfm)	TBD	TBD	2.2	
VAS-02 Pressure	(psig)	10 - 20	30	43	
VAS-03 Flow Rate	(scfm)	TBD	TBD	9.9	
VAS-03 Pressure	(psig)	10 - 20	30	23	
VAS-04 Flow Rate	(scfm)	TBD	TBD	OFF, scheduled	
VAS-04 Pressure	(psig)	10 - 20	30	for regulator replacement	
VAS-05 Flow Rate	(scfm)	TBD	TBD	5.8	
VAS-05 Pressure	(psig)	10 - 20	30	6	
VAS-06 Flow Rate	(scfm)	TBD	TBD	8.1	
VAS-06 Pressure	(psig)	10 - 20	30	9	
VAS-07 Flow Rate	(scfm)	TBD	TBD	11.7	
VAS-07 Pressure	(psig)	10 - 20	30	10	
VAS-08 Flow Rate	(scfm)	TBD	TBD	12.2	
VAS-08 Pressure	(psig)	10 - 20	30	16	
VAS-09 Flow Rate	(scfm)	TBD	TBD	10.5	
VAS-09 Pressure	(psig)	10 - 20	30	9	
VAS-10 Flow Rate	(scfm)	TBD	TBD	7.8	
VAS-10 Pressure	(psig)	10 - 20	30	16	
VAS-11 Flow Rate	(scfm)	TBD	TBD	14.3	
VAS-11 Pressure	(psig)	10 - 20	30	19	
VAS-12 Flow Rate	(scfm)	TBD	TBD	4.6	
VAS-12 Pressure	(psig)	10 - 20	30	13	
VAS-13 Flow Rate	(scfm)	TBD	TBD	12.9	
VAS-13 Pressure	(psig)	10 - 20	30	20	
VAS-14 Flow Rate	(scfm)	TBD	TBD	9.10	
VAS-14 Pressure	(psig)	10 - 20	30	11	
VAS-15 Flow Rate	(scfm)	TBD	TBD	13.2	
VAS-15 Pressure	(psig)	10 - 20	30	9	
VAS-16 Flow Rate	(scfm)	TBD	TBD	7.2	
VAS-16 Pressure	(psig)	10 - 20	30	10	
VAS-17 Flow Rate	(scfm)	TBD	TBD	6.7	
VAS-17 Pressure	(psig)	10 - 20	30	2	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 3 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3/31/2020 0845	Scott Simpson	Tyler Hall	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-18 Flow Rate	(scfm)	TBD	TBD	2.4	
VAS-18 Pressure	(psig)	10 - 20	30	0	
VAS-19 Flow Rate	(scfm)	TBD	TBD	10.8	
VAS-19 Pressure	(psig)	10 - 20	30	17	
VAS-20 Flow Rate	(scfm)	TBD	TBD	13.0	
VAS-20 Pressure	(psig)	10 - 20	30	18	
VAS-21 Flow Rate	(scfm)	TBD	TBD	14.6	
VAS-21 Pressure	(psig)	10 - 20	30	24	
VAS-22 Flow Rate	(scfm)	TBD	TBD	14.2	
VAS-22 Pressure	(psig)	10 - 20	30	24	
VAS-23 Flow Rate	(scfm)	TBD	TBD	13.6	
VAS-23 Pressure	(psig)	10 - 20	30	27	
VAS-24 Flow Rate	(scfm)	TBD	TBD	14.4	
VAS-24 Pressure	(psig)	10 - 20	30	28	
VAS-25 Flow Rate	(scfm)	TBD	TBD		
VAS-25 Pressure	(psig)	10 - 20	30		
VAS-26 Flow Rate	(scfm)	TBD	TBD		
VAS-26 Pressure	(psig)	10 - 20	30		
VAS-27 Flow Rate	(scfm)	TBD	TBD		
VAS-27 Pressure	(psig)	10 - 20	30		
VAS-28 Flow Rate	(scfm)	TBD	TBD		
VAS-28 Pressure	(psig)	10 - 20	30		
VAS-29 Flow Rate	(scfm)	TBD	TBD		
VAS-29 Pressure	(psig)	10 - 20	30		
VAS-30 Flow Rate	(scfm)	TBD	TBD		
VAS-30 Pressure	(psig)	10 - 20	30		
VAS-31 Flow Rate	(scfm)	TBD	TBD		
VAS-31 Pressure	(psig)	10 - 20	30		
VAS-32 Flow Rate	(scfm)	TBD	TBD	8.6	
VAS-32 Pressure	(psig)	10 - 20	30	19	
VAS-33 Flow Rate	(scfm)	TBD	TBD	9.3	
VAS-33 Pressure	(psig)	10 - 20	30	20	
VAS-34 Flow Rate	(scfm)	TBD	TBD	8.9	
VAS-34 Pressure	(psig)	10 - 20	30	22	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 4 of 5 *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3/31/2020 0845	Scott Smith	Tyler Hall	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-35 Flow Rate	(scfm)	TBD	TBD		
VAS-35 Pressure	(psig)	10 - 20	30		
VAS-36 Flow Rate	(scfm)	TBD	TBD		
VAS-36 Pressure	(psig)	10 - 20	30		
VAS-37 Flow Rate	(scfm)	TBD	TBD		
VAS-37 Pressure	(psig)	10 - 20	30		
VAS-38 Flow Rate	(scfm)	TBD	TBD		
VAS-38 Pressure	(psig)	10 - 20	30		
VAS-39 Flow Rate	(scfm)	TBD	TBD		
VAS-39 Pressure	(psig)	10 - 20	30		
VAS-40 Flow Rate	(scfm)	TBD	TBD		
VAS-40 Pressure	(psig)	10 - 20	30		
VAS-41 Flow Rate	(scfm)	TBD	TBD	9.2	
VAS-41 Pressure	(psig)	10 - 20	30	13	
VAS-42A Flow Rate	(scfm)	TBD	TBD	8.60	
VAS-42A Pressure	(psig)	10 - 20	30	15	
VAS-43A Flow Rate	(scfm)	TBD	TBD	7.3	
VAS-43A Pressure	(psig)	10 - 20	30	39	
VAS-44A Flow Rate	(scfm)	TBD	TBD		
VAS-44A Pressure	(psig)	10 - 20	30		
VAS-45 Flow Rate	(scfm)	TBD	TBD		
VAS-45 Pressure	(psig)	10 - 20	30		
VAS-46 Flow Rate	(scfm)	TBD	TBD		
VAS-46 Pressure	(psig)	10 - 20	30		
VAS-47 Flow Rate	(scfm)	TBD	TBD	14.2	
VAS-47 Pressure	(psig)	10 - 20	30	15	
VAS-48 Flow Rate	(scfm)	TBD	TBD	13.8	
VAS-48 Pressure	(psig)	10 - 20	30	16	
VAS-49 Flow Rate	(scfm)	TBD	TBD	14.1	
VAS-49 Pressure	(psig)	10 - 20	30	18	
VAS-50 Flow Rate	(scfm)	TBD	TBD	14.3	
VAS-50 Pressure	(psig)	10 - 20	30	13	
VAS-51 Flow Rate	(scfm)	TBD	TBD	13.4	
VAS-51 Pressure	(psig)	10 - 20	30	13	

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance System Data Log 5 of 5
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	*Lewis Drive, Belton, South Carolina*

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Permits
3/31/2020 0845	Scott Smith	Tyler Hall	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Vertical Wells	(Units)	Optimal Level	Max Level	Arrival	Departure
VAS-52 Flow Rate	(scfm)	TBD	TBD	13.9	
VAS-52 Pressure	(psig)	10 - 20	30	17	
VAS-53 Flow Rate	(scfm)	TBD	TBD	14.8	
VAS-53 Pressure	(psig)	10 - 20	30	13	
VAS-54 Flow Rate	(scfm)	TBD	TBD	14.7	
VAS-54 Pressure	(psig)	10 - 20	30	13	
VAS-55 Flow Rate	(scfm)	TBD	TBD	12.10	
VAS-55 Pressure	(psig)	10 - 20	30	10	
VAS-56 Flow Rate	(scfm)	TBD	TBD	13.3	
VAS-56 Pressure	(psig)	10 - 20	30	8	
VAS-57 Flow Rate	(scfm)	TBD	TBD	13.9	
VAS-57 Pressure	(psig)	10 - 20	30	11	
VAS-58 Flow Rate	(scfm)	TBD	TBD	14.1	
VAS-58 Pressure	(psig)	10 - 20	30	12	
VAS-59 Flow Rate	(scfm)	TBD	TBD	14.0	
VAS-59 Pressure	(psig)	10 - 20	30	10	
Brown's Creek Aerators	**(Units)**	**Optimal Level**	**Max Level**	**Arrival**	**Departure**
BCA-01 Flow Rate	(scfm)	TBD	TBD	OFF @ 0800 3/31/2020 for surface water sampling on 4/1/2020. Tyler Hall to return to operation.	
BCA-01 Pressure	(psig)	0 - 5	5		
BCA-02 Flow Rate	(scfm)	TBD	TBD		
BCA-02 Pressure	(psig)	0 - 5	5		

Site Name	Site Location	Project Manager	Project Engineer	Biosparging Operation and Maintenance Maintenance Log *Lewis Drive, Belton, South Carolina*
Lewis Drive	Belton, SC	Bill Waldron/RAL	Mark Strong/CLT	

Date & Time	O&M Technician #1	O&M Technician #2	Equipment Type	Equipment Model	Discharge Permit and Expiration Date
3/31/2020 0845	Scott Smith	Tyler Hall	Air Compressors Condensate Treatment	Sullair TS-20-200 Beko Qwik Pure 350	UIC Permit To Operate: SCHE03020469 Air Permit Exempt

Site Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect condition of Brown's Creek.	Each visit	(Yes) / No	(Yes) / No		replace RW well plug
Perform air monitoring near Cupboard Creek.	Each visit	Yes / (No)	Yes / No		
Activate and inspect condition of receiver auto drain	Each visit	(Yes) / No	Yes / (No)		
...	...				
...	...				

Equipment Maintenance	Frequency	Conditions Good?	Repaired / Replaced?	Scheduled	Comment
Inspect receiver tank and discharge lines.	Monthly	(Yes) / No	Yes / (No)		
Inspect condensate system components. Drain and clean as needed.	Monthly	(Yes) / No	Yes / (No)		
Inspect the two fire extinguishers for signs of deterioration. Shake contents.	Monthly	(Yes) / No	Yes / (No)		
Coordinate with Airite to performed quarterly and annual PM on both machines.	Quarterly	(Yes) / No	Yes / No		Complete quarterly PM
Inspect various building components detailed in Section X.X.X.	Semi-Annually	Yes / (No)	Yes / No		
Test relief valve on receiver tank for proper operation.	Annually	Yes / (No)	Yes / No		
Inspect flow meters per Section X.X.X. Verify calibration.	Annually	Yes / (No)	Yes / No		
Calibrate EAD	Annually	Yes / (No)	Yes / No		

NOTE: Please check the manufacturer's instructions for the specific maintenance schedule and instructions.

Additional Comments:

- Drain storm water from secondary containment, no petro. contamination observed
- 2" of rain recorded, rain gauge emptied

Appendix D
Remediation-Derived Waste Documentation

Please print or type
(Form designed for use on elite (12-pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	VSQG	1	803-957-6022	19100424-01

5. Generator's Name and Mailing Address: PLANTATION PIPELINE CO.
112 LEWIS DRIVE
BELTON, SC
Generator's Phone: 404-432-6312
Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: A&D ENVIRONMENTAL SERVICES (SC), LLC — U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address: Giant Resource Recovery - Attalla
1229 Valley Drive
Attalla, AL 35954
Facility's Phone: 256-538-3800
U.S. EPA ID Number: ALD070513767

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-RCRA / NON-DOT REGULATED MATERIAL (IDW SOLID)	8	DM	453	P	
2.	NON-RCRA / NON-DOT REGULATED MATERIAL (IDW PURGE WATER)	10	DM	4,093	P	
3.	NON-RCRA / NON-DOT REGULATED MATERIAL (IDW SLUDGE)	9	DM	3,822	P	
4.	NON-RCRA / NON-DOT REGULATED MATERIAL (USED BOOMS AND SOCKS)	1	DM	280	P	

13. Special Handling Instructions and Additional Information
PROJECT NUMBER: 1910-0424
1.) 69583: 1 X DM55
2.) 69584: 10 X DM55
3.) 69585: 9 X DM55
4.) 69586: 1 X DM55

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: as an agent/behalf x Taji Caughman of Plantation Pipeline Co. — Signature: x Taji Caugh as an agent/behalf of Plantation Pipeline Co. — Month: 10 Day: 25 Year: 19

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: ~~as an agent/behalf~~ x Taji Caughman ~~of Plantation Pipeline Co.~~ — Signature: x Taji Caugh ~~as an agent/behalf of Plantation Pipeline Co.~~ — Month: 10 Day: 25 Year: 19

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month — Day — Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name — Signature — Month — Day — Year

Giant Resource Recovery-Attalla, Inc.

Mailing Address:
1229 Valley Drive
Attalla, AL 35954
Tel.: (256) 538-3800
Fax Office: (256) 538-1836
Fax Lab: (256) 538-2634

Shipping Address:
1229 Valley Drive
Attalla, AL 35954

Profile Update: ___

WASTE MATERIAL PROFILE FORM

PROFILE NO. _____

A. GENERAL INFORMATION

GENERATOR	Plantation Pipe Line Co.	TRANSPORTER	A&D Environmental
FACILITY ADDRESS (PO BOX)	112 Lewis Drive	GENERATOR USEPA ID NO.	
FACILITY SITE ADDRESS	112 Lewis Drive	GENERATOR STATE ID NO.	
CITY, STATE, ZIP	Belton, SC	PHONE NO.	803-821-6022
TECHNICAL CONTACT	Johnny Tapia	TITLE	
NAME OF WASTE	Non-hazardous Purge Water	SIC CODE	
PROCESS GENERATING WASTE	Investigation		

B. PHYSICAL CHARACTERISTICS OF WASTE

PHYSICAL STATE @ 70 F: x Liquid ___ Semi-Solid ___ Solid

ODOR: x None ___ Mild ___ Strong Describe Solvent

FLASH POINT: ___ <100 F ___ 101-139 F ___ 140-200 F x >200 F ___ No Flash Value ___

BTU RANGE: ___ /lb ___ /gal

SPECIFIC GRAVITY: x <0.8 ___ >.8<1 ___ >1 EXACT ___

SOLIDS RANGE: N/A %

LAYERS: x Single-Phase ___ Bi-layer ___ Multilayer

COLOR: clear

pH RANGE: ___ >2-5 x >5-9 ___ > 9 - < 12.5

UNBURNABLE RESIDUE RANGE: 0 %

WATER CONTENT RANGE: n/a %Dissolved ___ % Free Layer

VISCOSITY RANGE: n/a Centipoises

C. CHEMICAL COMPOSITION

	RANGE	
IDW Water from site remediation activities	100	%
(drililng, well sampling and development)		%
no measurable traces of gasoline		%
		%
		%
		%
		%
		%
		%
		%
		%
		%

D. METALS X NONE ___ TOTAL (ppm) ___ TCLP (ppm)

ANTIMONY (SB)	> 10.0	x No	___ Yes	CONC. RANGE	
ARSENIC (AS)	> 5.0	x No	___ Yes	CONC. RANGE	
BARIUM (BA)	> 100.0	x No	___ Yes	CONC. RANGE	
BERYLLIUM (BE)	> 1.0	x No	___ Yes	CONC. RANGE	
CADMIUM (CD)	> 1.0	x No	___ Yes	CONC. RANGE	
CHROMIUM (CR)	> 5.0	x No	___ Yes	CONC. RANGE	
LEAD (PB)	> 5.0	x No	___ Yes	CONC. RANGE	
MERCURY (HG)	> 0.2	x No	___ Yes	CONC. RANGE	
NICKEL (NI)	> 5.0	x No	___ Yes	CONC. RANGE	
SELENIUM (SE)	> 1.0	x No	___ Yes	CONC. RANGE	
SILVER (AG)	> 5.0	x No	___ Yes	CONC. RANGE	
THALLIUM (TL)	> 10.0	x No	___ Yes	CONC. RANGE	

E. OTHER COMPONENTS - n/a PPM ___ %

SULFUR n/a PCB'S n/a HALOGENS n/a

F. HAZARDOUS CHARACTERISTICS

REACTIVITY n/a None n/a Water Reactive n/a Shock Sensitive

n/a Pyrophoric n/a Explosive n/a Sulfides: ___

n/a Cyanides: n/a n/a Other: ___

OTHER HAZARDOUS CHARACTERISTICS: ___ Ignitable

n/a Corrosive n/a TCLP Wastes ___ Other: ___

USEPA HAZARDOUS WASTE? ___ Yes X No

USEPA HAZARDOUS WASTE CODE(S): ___

STATE HAZARDOUS WASTE? ___ Yes X No

STATE HAZARDOUS WASTE CODE(S): ___

G. SHIPPING INFORMATION

DOT HAZARDOUS MATERIAL? ___ Yes x No

PROPER SHIPPING NAME Non-RCRA / Non-DOT Regulated Material

HAZARD CLASS N/A ID NO. ___

PACKAGING GROUP ___ EMERGENCY RESPONSE GUIDE: ___

PRIMARY CONSTITUENTS CONTRIBUTING TO HAZARD: ___

24 HR. EMERGENCY PHONE NO. 800-255-3924

METHOD OF SHIPMENT: ___ Bulk X Drums [Type/Size ___]

ESTIMATED VOLUME: 55 Gal 10 Drums /Tons per YEAR

H. SPECIAL HANDLING OR INCOMPATIBILITIES

IS THIS WASTE SUBJECT TO BENZENE WASTE NESHAP? ___ Yes X No ___ Additional Pages Attached

GENERATOR CERTIFICATION

I hereby certify that all information in this and all attached documents is true and accurate, and that all known or suspected hazards have been disclosed. I certify that there are no hazardous constituents or characteristics except as described above, and if the waste stream or process generating the waste changes, I will notify M & M Chemical prior to shipment of the waste.

Signature

Title: EHS Specialist

Printed/Typed Name: Johnny Tapia

Date: 10/16/19

GIANT RESOURCE RECOVERY-ATTALLA, INC profile # _____

BENZENE NESHAP QUESTIONNAIRE

Generator Name: **Plantation Pipe Line Co.**

Generator Location (city & state): **Belton, SC**

Estimated Annual Quantity of Waste Shipped: **500/gal** Gal. / **10** Drums

Description of Waste: **Non-hazardous Purge Water**

A. Does the current Waste Profile Sheet indicate the presence of benzene in this waste stream or is the waste described by one of the following Waste Codes: D018, F005, U019, F024, F037, F038, K085, K105?

Yes _____ _____ No **x**

Applicable Waste Code(s)

B. Is the waste stream generated by any of the following types of industries:

1. Petroleum Refineries (SIC = 2911)
2. Chemical Manufacturing Plants (SIC = 2800-2899)
3. Coke-By-Product Recovery Plants (SIC 3312)
4. Treatment, Storage, and Disposal Facilities handling benzene wastes from 1, 2, or 3 (SIC = 4953, 4959, 9511, 4214)

Yes _____ Which SIC Code? _____ No **x**

C. Is the waste stream benzene concentration greater than 10 ppm?

Yes _____ No **x**

D. Does this waste contain greater than 10% water?

Yes _____ No **x**

E. What is your total annual benzene (TAB)? _____ Mg/yr

F. Is this waste subject to the Benzene Waste Operations NESHAP control requirements (40 CFR Part 61 Subpart FF)?

Yes _____ No x

CERTIFICATION

I hereby certify that all information submitted in this document is complete and accurate to the best of my knowledge and information.

Signature _____ Title EHS Specialist Date 10/16/19

TC RULE CERTIFICATION FORM

PROFILE #: _____

Generator Name: **Plantation Pipe Line Co.** EPA ID#: _____

Location: **Belton, SC**

Waste Description: **Non-hazardous Purge Water**

CHARACTERISTICS OF HAZARDOUS WASTE: Indicate if this waste contains any of the following characteristics based on criteria mandated by 40 CFR 261.21, 261.22, 261.23, 261.24

			Regulatory Threshold Level	Check One Yes	Check One No	Check One Scientific Data	Generators Knowledge	Actual Value
D001	Characteristic of Ignitability	<	140 F		x		x	F
D002	Characteristic of Corrosivity	≤ ≥	2 or 12.5		x		x	pH
D003	Characteristic of Reactivity				x		x	

	Constituent	*Regulatory Threshold Level, ppm	Check One Yes	Check One No	Check One Scientific Data	Generators Knowledge	Actual Value ppm
D004	Arsenic	5.0		x		x	
D005	Barium	100.0		x		x	
D006	Cadmium	1.0		x		x	
D007	Chromium	5.0		x		x	
D008	Lead	5.0		x		x	
D009	Mercury	0.2		x		x	
D010	Selenium	1.0		x		x	
D011	Silver	5.0		x		x	
D012	Endrin	0.02		x		x	
D013	Lindane	0.4		x		x	
D014	Methoxychlor	10.0		x		x	
D015	Toxaphene	0.5		x		x	
D016	2, 4-D (2,4-Dichloro-phenoxyacetic acid)	10.0		x		x	
D017	2,4, 5-TP (Silvex)	1.0		x		x	
D018	Benzene	0.5		x		x	
D019	Carbon Tetrachloride	0.5		x		x	
D020	Chlordane	0.03		x		x	
D021	Chlorobenzene	100.0		x		x	
D022	Chloroform	6.0		x		x	
D023	o-Cresol	200.0		x		x	
D024	m-Cresol	200.0		x		x	
D025	p-Cresol	200.0		x		x	

--Continued--

PROFILE #: _____

	Constituent	*Regulatory Threshold Level, ppm	Check One Yes	Check One No	Check One Scientific Data	Generators Knowledge	Actual Value ppm
D026	Cresol	200.0		x		x	
D027	1,4 Dichlorobenzene	7.5		x		x	
D028	1,2 Dichloroethane	0.5		x		x	
D029	1,1 Dichloroethylene	0.7		x		x	
D030	2,4 Dinitrotoluene	0.13		x		x	
D031	Heptachlor (and its hydroxide)	0.008		x		x	
D032	Hexachlorobenzene	0.13		x		x	
D033	Hexachlorobutadiene	0.5		x		x	
D034	Hexachloroethane	3.0		x		x	
D035	Methyl Ethyl Ketone	200.0		x		x	
D036	Nitrobenzene	2.0		x		x	
D037	Pentachlorophenol	100.0		x		x	
D038	Pyridine	5.0		x		x	
D039	Tetrachloroethylene	0.7		x		x	
D040	Trichloroethylene	0.5		x		x	
D041	2,4,5-Trichlorophenol	400.0		x		x	
D042	2,4,6-Trichlorophenol	2.0		x		x	
D043	Vinyl Chloride	0.2		x		x	

As defined by the TCLP (Method 1311), EP Toxicity is no longer acceptable

Listed Hazardous Waste: Indicate if this waste also contains any listed hazardous wastes coded in 40 CFR 261.31, 261.32 and 261.33 by including the appropriate EPA hazardous waste code(s).

NA

GENERATOR CERTIFICATION:

I hereby certify that all information submitted on this form and all attached documents are true and accurate. In the event this form is not fully completed, I authorize Giant Resource Recovery-Attalla Inc. to conduct necessary testing at my expense to properly complete the form.

Signature: _____ Date: 10/16/19

Print Name: Johnny Tapia Title: EHS Specialist

THIS CERTIFICATION/RECERTIFICATION IS REQUIRED FOR EACH PROFILE

ORIGINAL SIGNATURE REQUIRED

Giant Resource Recovery-Attalla, Inc.

Mailing Address:
1229 Valley Drive
Attalla, AL 35954
Tel.: (256) 538-3800
Fax Office: (256) 538-1836
Fax Lab: (256) 538-2634

Shipping Address:
1229 Valley Drive
Attalla, AL 35954

Profile Update: ___

WASTE MATERIAL PROFILE FORM
PROFILE NO. _____

A. GENERAL INFORMATION

GENERATOR	Plantation Pipe Line Co.	TRANSPORTER	A&D Environmental
FACILITY ADDRESS (PO BOX)	112 Lewis Drive	GENERATOR USEPA ID NO.	
FACILITY SITE ADDRESS	112 Lewis Drive	GENERATOR STATE ID NO.	
CITY, STATE, ZIP	Belton, SC	PHONE NO.	803-821-6022
TECHNICAL CONTACT	Johnny Tapia	TITLE	
NAME OF WASTE	Non-hazardous IDW Solid	SIC CODE	
PROCESS GENERATING WASTE	Investigation		

B. PHYSICAL CHARACTERISTICS OF WASTE

PHYSICAL STATE @ 70 F: ___ Liquid ___ Semi-Solid x Solid
ODOR: x None ___ Mild ___ Strong Describe Solvent
FLASH POINT: ___ <100 F ___ 101-139 F ___ 140-200 F
x >200 F ___ No Flash Value ___
BTU RANGE: ___ /lb ___ /gal
SPECIFIC GRAVITY: ___ <0.8 ___ >.8<1 ___ >1 EXACT ___
SOLIDS RANGE: NA %

LAYERS: x Single-Phase ___ Bi-layer ___ Multilayer
COLOR: varies
pH RANGE: ___ >2-5 x >5-9 ___ > 9 - < 12.5
UNBURNABLE RESIDUE RANGE: 0 %
WATER CONTENT RANGE: n/a %Dissolved
___ % Free Layer
VISCOSITY RANGE: n/a Centipoises

C. CHEMICAL COMPOSITION

	RANGE
IDW Solid from site remediation activities	100 %
(drilling) no measurable traces of gasoline	%
	%
	%
	%
	%
	%
	%
	%
	%
	%
	%
	%

D. METALS X NONE ___ TOTAL (ppm) ___ TCLP (ppm)

ANTIMONY (SB)	>	10.0	x No	___ Yes	CONC. RANGE	
ARSENIC (AS)	>	5.0	x No	___ Yes	CONC. RANGE	
BARIUM (BA)	>	100.0	x No	___ Yes	CONC. RANGE	
BERYLLIUM (BE)	>	1.0	x No	___ Yes	CONC. RANGE	
CADMIUM (CD)	>	1.0	x No	___ Yes	CONC. RANGE	
CHROMIUM (CR)	>	5.0	x No	___ Yes	CONC. RANGE	
LEAD (PB)	>	5.0	x No	___ Yes	CONC. RANGE	
MERCURY (HG)	>	0.2	x No	___ Yes	CONC. RANGE	
NICKEL (NI)	>	5.0	x No	___ Yes	CONC. RANGE	
SELENIUM (SE)	>	1.0	x No	___ Yes	CONC. RANGE	
SILVER (AG)	>	5.0	x No	___ Yes	CONC. RANGE	
THALLIUM (TL)	>	10.0	x No	___ Yes	CONC. RANGE	

E. OTHER COMPONENTS - n/a PPM ___ %

SULFUR n/a PCB'S n/a HALOGENS n/a

F. HAZARDOUS CHARACTERISTICS

REACTIVITY n/a None n/a Water Reactive n/a Shock Sensitive
n/a Pyrophoric n/a Explosive n/a Sulfides: ___
n/a Cyanides: n/a n/a Other: ___
OTHER HAZARDOUS CHARACTERISTICS: ___ Ignitable
n/a Corrosive n/a TCLP Wastes ___ Other: ___
USEPA HAZARDOUS WASTE? ___ Yes X No
USEPA HAZARDOUS WASTE CODE(S): ___

STATE HAZARDOUS WASTE? ___ Yes X No
STATE HAZARDOUS WASTE CODE(S): ___

G. SHIPPING INFORMATION

DOT HAZARDOUS MATERIAL? ___ Yes x No
PROPER SHIPPING NAME Non-RCRA / Non-DOT Regulated Material
HAZARD CLASS N/A ID NO. ___
PACKAGING GROUP ___ EMERGENCY RESPONSE GUIDE: ___
PRIMARY CONSTITUENTS CONTRIBUTING TO HAZARD:

24 HR. EMERGENCY PHONE NO. 800-255-3924
METHOD OF SHIPMENT: ___ Bulk X Drums [Type/Size ___]
ESTIMATED VOLUME: 55 Gal 10 Drums /Tons per YEAR

H. SPECIAL HANDLING OR INCOMPATIBILITIES

IS THIS WASTE SUBJECT TO BENZENE WASTE NESHAP? ___ Yes X No ___ Additional Pages Attached

GENERATOR CERTIFICATION

I hereby certify that all information in this and all attached documents is true and accurate, and that all known or suspected hazards have been disclosed. I certify that there are no hazardous constituents or characteristics except as described above, and if the waste stream or process generating the waste changes, I will notify M & M Chemical prior to shipment of the waste.

Signature _____ Title EHS Specialist

Printed/Typed Name Johnny Tapia Date 10/16/19

GIANT RESOURCE RECOVERY-ATTALLA, INC profile # _____

BENZENE NESHAP QUESTIONNAIRE

Generator Name: **Plantation Pipe Line Co.**

Generator Location (city & state): **Belton, SC**

Estimated Annual Quantity of Waste Shipped: **50** Gal. / **1** Drums

Description of Waste: **Non-hazardous IDW Solid**

A. Does the current Waste Profile Sheet indicate the presence of benzene in this waste stream or is the waste described by one of the following Waste Codes: D018, F005, U019, F024, F037, F038, K085, K105?

Yes _____ _____ No x
Applicable Waste Code(s)

B. Is the waste stream generated by any of the following types of industries:

1. Petroleum Refineries (SIC = 2911)
2. Chemical Manufacturing Plants (SIC = 2800-2899)
3. Coke-By-Product Recovery Plants (SIC 3312)
4. Treatment, Storage, and Disposal Facilities handling benzene wastes from 1, 2, or 3 (SIC = 4953, 4959, 9511, 4214)

Yes _____ Which SIC Code? _____ No x

C. Is the waste stream benzene concentration greater than 10 ppm?

Yes _____ No x

D. Does this waste contain greater than 10% water?

Yes _____ No x

E. What is your total annual benzene (TAB)? _____ Mg/yr

F. Is this waste subject to the Benzene Waste Operations NESHAP control requirements (40 CFR Part 61 Subpart FF)?

Yes _____ No x

CERTIFICATION

I hereby certify that all information submitted in this document is complete and accurate to the best of my knowledge and information.

Signature _____ Title EHS Specialist Date 10/16/19

TC RULE CERTIFICATION FORM

PROFILE #: _____

Generator Name: **Plantation Pipe Line Co.** EPA ID#: _____

Location: **Belton, SC**

Waste Description: **Non-hazardous IDW Solid**

CHARACTERISTICS OF HAZARDOUS WASTE: Indicate if this waste contains any of the following characteristics based on criteria mandated by 40 CFR 261.21, 261.22, 261.23, 261.24

			Regulatory Threshold Level	Check One Yes	Check One No	Check One Scientific Data	Generators Knowledge	Actual Value
D001	Characteristic of Ignitability	<	140 F	____	x	____	x	____ F
D002	Characteristic of Corrosivity	≤ / ≥	2 or 12.5	____	x	____	x	____ pH
D003	Characteristic of Reactivity			____	x	____	x	____

	Constituent	*Regulatory Threshold Level, ppm	Check One Yes	Check One No	Check One Scientific Data	Generators Knowledge	Actual Value ppm
D004	Arsenic	5.0	____	x	____	x	____
D005	Barium	100.0	____	x	____	x	____
D006	Cadmium	1.0	____	x	____	x	____
D007	Chromium	5.0	____	x	____	x	____
D008	Lead	5.0	____	x	____	x	____
D009	Mercury	0.2	____	x	____	x	____
D010	Selenium	1.0	____	x	____	x	____
D011	Silver	5.0	____	x	____	x	____
D012	Endrin	0.02	____	x	____	x	____
D013	Lindane	0.4	____	x	____	x	____
D014	Methoxychlor	10.0	____	x	____	x	____
D015	Toxaphene	0.5	____	x	____	x	____
D016	2, 4-D (2,4-Dichloro-phenoxyacetic acid)	10.0	____	x	____	x	____
D017	2,4, 5-TP (Silvex)	1.0	____	x	____	x	____
D018	Benzene	0.5	____	x	____	x	____
D019	Carbon Tetrachloride	0.5	____	x	____	x	____
D020	Chlordane	0.03	____	x	____	x	____
D021	Chlorobenzene	100.0	____	x	____	x	____
D022	Chloroform	6.0	____	x	____	x	____
D023	o-Cresol	200.0	____	x	____	x	____
D024	m-Cresol	200.0	____	x	____	x	____
D025	p-Cresol	200.0	____	x	____	x	____

--Continued--

PROFILE #: _____

	Constituent	*Regulatory Threshold Level, ppm	Check One Yes	Check One No	Check One Scientific Data	Generators Knowledge	Actual Value ppm
D026	Cresol	200.0		x		x	
D027	1,4 Dichlorobenzene	7.5		x		x	
D028	1,2 Dichloroethane	0.5		x		x	
D029	1,1 Dichloroethylene	0.7		x		x	
D030	2,4 Dinitrotoluene	0.13		x		x	
D031	Heptachlor (and its hydroxide)	0.008		x		x	
D032	Hexachlorobenzene	0.13		x		x	
D033	Hexachlorobutadiene	0.5		x		x	
D034	Hexachloroethane	3.0		x		x	
D035	Methyl Ethyl Ketone	200.0		x		x	
D036	Nitrobenzene	2.0		x		x	
D037	Pentachlorophenol	100.0		x		x	
D038	Pyridine	5.0		x		x	
D039	Tetrachloroethylene	0.7		x		x	
D040	Trichloroethylene	0.5		x		x	
D041	2,4,5-Trichlorophenol	400.0		x		x	
D042	2,4,6-Trichlorophenol	2.0		x		x	
D043	Vinyl Chloride	0.2		x		x	

As defined by the TCLP (Method 1311), EP Toxicity is no longer acceptable

Listed Hazardous Waste: Indicate if this waste also contains any listed hazardous wastes coded in 40 CFR 261.31, 261.32 and 261.33 by including the appropriate EPA hazardous waste code(s).

NA					

GENERATOR CERTIFICATION:

I hereby certify that all information submitted on this form and all attached documents are true and accurate. In the event this form is not fully completed, I authorize Giant Resource Recovery-Attalla Inc. to conduct necessary testing at my expense to properly complete the form.

Signature: _____ Date: 10/16/19

Print Name: Johnny Tapia Title: EHS Specialist

THIS CERTIFICATION/RECERTIFICATION IS REQUIRED FOR EACH PROFILE

ORIGINAL SIGNATURE REQUIRED

Giant Resource Recovery-Attalla, Inc.

Mailing Address:
1229 Valley Drive
Attalla, AL 35954
Tel.: (256) 538-3800
Fax Office: (256) 538-1836
Fax Lab: (256) 538-2634

Shipping Address:
1229 Valley Drive
Attalla, AL 35954

WASTE MATERIAL PROFILE FORM

Profile Update: ___ PROFILE NO. _____

A. GENERAL INFORMATION

GENERATOR	Plantation Pipe Line Co.	TRANSPORTER	A&D Environmental
FACILITY ADDRESS (PO BOX)	112 Lewis Drive	GENERATOR USEPA ID NO.	
FACILITY SITE ADDRESS	112 Lewis Drive	GENERATOR STATE ID NO.	
CITY, STATE, ZIP	Belton, SC	PHONE NO.	803-821-6022
TECHNICAL CONTACT	Johnny Tapia	TITLE	
NAME OF WASTE	Non-hazardous IDW Sludge	SIC CODE	
PROCESS GENERATING WASTE	Investigation		

B. PHYSICAL CHARACTERISTICS OF WASTE

PHYSICAL STATE @ 70 F: ___ Liquid x Semi-Solid ___ Solid
ODOR: x None ___ Mild ___ Strong Describe Solvent
FLASH POINT: ___ <100 F ___ 101-139 F ___ 140-200 F
x >200 F ___ No Flash Value ___
BTU RANGE: ___ /lb ___ /gal
SPECIFIC GRAVITY: ___ <0.8 ___ >.8<1 ___ >1 EXACT ___
SOLIDS RANGE: ___ N/A ___ %

LAYERS: x Single-Phase ___ Bi-layer ___ Multilayer
COLOR: varies
pH RANGE: ___ >2-5 x >5-9 ___ > 9 - < 12.5
UNBURNABLE RESIDUE RANGE: 0 %
WATER CONTENT RANGE: n/a %Dissolved
___ % Free Layer
VISCOSITY RANGE: n/a Centipoises

C. CHEMICAL COMPOSITION

	RANGE
IDW Sludge from site remediation activities	100 %
(drililng, well sampling and development)	%
no measurable traces of gasoline	%
	%
	%
	%
	%
	%
	%
	%
	%
	%

D. METALS X NONE ___ TOTAL (ppm) ___ TCLP (ppm)

ANTIMONY (SB)	> 10.0	x No	___ Yes	CONC. RANGE	
ARSENIC (AS)	> 5.0	x No	___ Yes	CONC. RANGE	
BARIUM (BA)	> 100.0	x No	___ Yes	CONC. RANGE	
BERYLLIUM (BE)	> 1.0	x No	___ Yes	CONC. RANGE	
CADMIUM (CD)	> 1.0	x No	___ Yes	CONC. RANGE	
CHROMIUM (CR)	> 5.0	x No	___ Yes	CONC. RANGE	
LEAD (PB)	> 5.0	x No	___ Yes	CONC. RANGE	
MERCURY (HG)	> 0.2	x No	___ Yes	CONC. RANGE	
NICKEL (NI)	> 5.0	x No	___ Yes	CONC. RANGE	
SELENIUM (SE)	> 1.0	x No	___ Yes	CONC. RANGE	
SILVER (AG)	> 5.0	x No	___ Yes	CONC. RANGE	
THALLIUM (TL)	> 10.0	x No	___ Yes	CONC. RANGE	

E. OTHER COMPONENTS - n/a PPM ___ %

SULFUR n/a PCB'S n/a HALOGENS n/a

F. HAZARDOUS CHARACTERISTICS

REACTIVITY n/a None n/a Water Reactive n/a Shock Sensitive
n/a Pyrophoric n/a Explosive n/a Sulfides: ___
n/a Cyanides: n/a n/a Other: ___
OTHER HAZARDOUS CHARACTERISTICS: ___ Ignitable
n/a Corrosive n/a TCLP Wastes ___ Other: ___
USEPA HAZARDOUS WASTE? ___ Yes X No
USEPA HAZARDOUS WASTE CODE(S): ___

STATE HAZARDOUS WASTE? ___ Yes X No
STATE HAZARDOUS WASTE CODE(S): ___

G. SHIPPING INFORMATION

DOT HAZARDOUS MATERIAL? ___ Yes x No
PROPER SHIPPING NAME Non-RCRA / Non-DOT Regulated Material
HAZARD CLASS N/A ID NO. ___
PACKAGING GROUP ___ EMERGENCY RESPONSE GUIDE: ___
PRIMARY CONSTITUENTS CONTRIBUTING TO HAZARD:
___ ___
24 HR. EMERGENCY PHONE NO. 800-255-3924
METHOD OF SHIPMENT: ___ Bulk X Drums [Type/Size ___]
ESTIMATED VOLUME: 55 Gal 1 Drums /Tons per YEAR

H. SPECIAL HANDLING OR INCOMPATIBILITIES

IS THIS WASTE SUBJECT TO BENZENE WASTE NESHAP? ___ Yes X No ___ Additional Pages Attached

GENERATOR CERTIFICATION

I hereby certify that all information in this and all attached documents is true and accurate, and that all known or suspected hazards have been disclosed. I certify that there are no hazardous constituents or characteristics except as described above, and if the waste stream or process generating the waste changes, I will notify M & M Chemical prior to shipment of the waste.

Signature _____ Title EHS Specialist

Printed/Typed Name Johnny Tapia Date 10/16/14

GIANT RESOURCE RECOVERY-ATTALLA, INC profile # _____

BENZENE NESHAP QUESTIONNAIRE

Generator Name: **Plantation Pipe Line Co.**

Generator Location (city & state): **Belton, SC**

Estimated Annual Quantity of Waste Shipped: 50 Gal. / 10 Drums

Description of Waste: **Non-hazardous IDW Sludge**

A. Does the current Waste Profile Sheet indicate the presence of benzene in this waste stream or is the waste described by one of the following Waste Codes: D018, F005, U019, F024, F037, F038, K085, K105?

Yes _____ _____ No x

Applicable Waste Code(s)

B. Is the waste stream generated by any of the following types of industries:

1. Petroleum Refineries (SIC = 2911)
2. Chemical Manufacturing Plants (SIC = 2800-2899)
3. Coke-By-Product Recovery Plants (SIC 3312)
4. Treatment, Storage, and Disposal Facilities handling benzene wastes from 1, 2, or 3 (SIC = 4953, 4959, 9511, 4214)

Yes _____ Which SIC Code? _____ No x

C. Is the waste stream benzene concentration greater than 10 ppm?

Yes _____ No x

D. Does this waste contain greater than 10% water?

Yes _____ No x

E. What is your total annual benzene (TAB)? _____ Mg/yr

F. Is this waste subject to the Benzene Waste Operations NESHAP control requirements (40 CFR Part 61 Subpart FF)?

Yes _____ No x

CERTIFICATION

I hereby certify that all information submitted in this document is complete and accurate to the best of my knowledge and information.

Signature _____ Title EHS Specialist Date 10/16/19

TC RULE CERTIFICATION FORM

PROFILE #: _____

Generator Name: **Plantation Pipe Line Co.** EPA ID#: _____

Location: **Belton, SC**

Waste Description: **Non-hazardous IDW Sludge**

CHARACTERISTICS OF HAZARDOUS WASTE: Indicate if this waste contains any of the following characteristics based on criteria mandated by 40 CFR 261.21, 261.22, 261.23, 261.24

			Regulatory Threshold Level	Check One Yes	Check One No	Check One Scientific Data	Generators Knowledge	Actual Value
D001	Characteristic of Ignitability	<	140 F	____	x	_____	x	_____ F
D002	Characteristic of Corrosivity	≤ ≥	2 or 12.5	____	x	_____	x	_____ pH
D003	Characteristic of Reactivity			____	x	_____	x	_____

	Constituent	*Regulatory Threshold Level, ppm	Check One Yes	Check One No	Check One Scientific Data	Generators Knowledge	Actual Value ppm
D004	Arsenic	5.0	____	x	_____	x	_____
D005	Barium	100.0	____	x	_____	x	_____
D006	Cadmium	1.0	____	x	_____	x	_____
D007	Chromium	5.0	____	x	_____	x	_____
D008	Lead	5.0	____	x	_____	x	_____
D009	Mercury	0.2	____	x	_____	x	_____
D010	Selenium	1.0	____	x	_____	x	_____
D011	Silver	5.0	____	x	_____	x	_____
D012	Endrin	0.02	____	x	_____	x	_____
D013	Lindane	0.4	____	x	_____	x	_____
D014	Methoxychlor	10.0	____	x	_____	x	_____
D015	Toxaphene	0.5	____	x	_____	x	_____
D016	2, 4-D (2,4-Dichloro-phenoxyacetic acid)	10.0	____	x	_____	x	_____
D017	2,4, 5-TP (Silvex)	1.0	____	x	_____	x	_____
D018	Benzene	0.5	____	x	_____	x	_____
D019	Carbon Tetrachloride	0.5	____	x	_____	x	_____
D020	Chlordane	0.03	____	x	_____	x	_____
D021	Chlorobenzene	100.0	____	x	_____	x	_____
D022	Chloroform	6.0	____	x	_____	x	_____
D023	o-Cresol	200.0	____	x	_____	x	_____
D024	m-Cresol	200.0	____	x	_____	x	_____
D025	p-Cresol	200.0	____	x	_____	x	_____

--Continued--

PROFILE #: _____

	Constituent	*Regulatory Threshold Level, ppm	Check One Yes	Check One No	Check One Scientific Data	Generators Knowledge	Actual Value ppm
D026	Cresol	200.0		x		x	
D027	1,4 Dichlorobenzene	7.5		x		x	
D028	1,2 Dichloroethane	0.5		x		x	
D029	1,1 Dichloroethylene	0.7		x		x	
D030	2,4 Dinitrotoluene	0.13		x		x	
D031	Heptachlor (and its hydroxide)	0.008		x		x	
D032	Hexachlorobenzene	0.13		x		x	
D033	Hexachlorobutadiene	0.5		x		x	
D034	Hexachloroethane	3.0		x		x	
D035	Methyl Ethyl Ketone	200.0		x		x	
D036	Nitrobenzene	2.0		x		x	
D037	Pentachlorophenol	100.0		x		x	
D038	Pyridine	5.0		x		x	
D039	Tetrachloroethylene	0.7		x		x	
D040	Trichloroethylene	0.5		x		x	
D041	2,4,5-Trichlorophenol	400.0		x		x	
D042	2,4,6-Trichlorophenol	2.0		x		x	
D043	Vinyl Chloride	0.2		x		x	

As defined by the TCLP (Method 1311), EP Toxicity is no longer acceptable

Listed Hazardous Waste: Indicate if this waste also contains any listed hazardous wastes coded in 40 CFR 261.31, 261.32 and 261.33 by including the appropriate EPA hazardous waste code(s).

NA

GENERATOR CERTIFICATION:

I hereby certify that all information submitted on this form and all attached documents are true and accurate. In the event this form is not fully completed, I authorize Giant Resource Recovery-Attalla Inc. to conduct necessary testing at my expense to properly complete the form.

Signature: _____ Date: 10/16/19

Print Name: Johnny Tapia Title: EHS Specialist

THIS CERTIFICATION/RECERTIFICATION IS REQUIRED FOR EACH PROFILE

ORIGINAL SIGNATURE REQUIRED

Giant Resource Recovery-Attalla, Inc.

Mailing Address:
1229 Valley Drive
Attalla, AL 35954
Tel.: (256) 538-3800
Fax Office: (256) 538-1836
Fax Lab: (256) 538-2634

Shipping Address:
1229 Valley Drive
Attalla, AL 35954

Profile Update: ___

WASTE MATERIAL PROFILE FORM
PROFILE NO. _____

A. GENERAL INFORMATION

GENERATOR	Plantation Pipe Line Co.	TRANSPORTER	A&D Environmental
FACILITY ADDRESS (PO BOX)	112 Lewis Drive	GENERATOR USEPA ID NO.	
FACILITY SITE ADDRESS	112 Lewis Drive	GENERATOR STATE ID NO.	
CITY, STATE, ZIP	Belton, SC	PHONE NO.	803-821-6022
TECHNICAL CONTACT	Johnny Tapia	TITLE	
NAME OF WASTE	Used booms and socks	SIC CODE	
PROCESS GENERATING WASTE	Investigation		

B. PHYSICAL CHARACTERISTICS OF WASTE

PHYSICAL STATE @ 70 F: ___ Liquid ___ Semi-Solid x Solid
ODOR: x None ___ Mild ___ Strong Describe ___ Solvent
FLASH POINT: ___ <100 F ___ 101-139 F ___ 140-200 F
x >200 F ___ No Flash Value ___
BTU RANGE: ___ /lb ___ /gal
SPECIFIC GRAVITY: ___ <0.8 ___ >.8<1 ___ >1 EXACT ___
SOLIDS RANGE: ___ N/A ___ %

LAYERS: x Single-Phase ___ Bi-layer ___ Multilayer
COLOR: varies
pH RANGE: ___ >2-5 ___ x >5-9 ___ > 9 - < 12.5
UNBURNABLE RESIDUE RANGE: 0 %
WATER CONTENT RANGE: n/a %Dissolved
___ % Free Layer
VISCOSITY RANGE: n/a Centipoises

C. CHEMICAL COMPOSITION

	RANGE
Used booms and socks from site remediation	100 %
activities, no measurable traces of gasoline	%
	%
	%
	%
	%
	%
	%
	%
	%
	%
	%

D. METALS X NONE ___ TOTAL (ppm) ___ TCLP (ppm)

ANTIMONY (SB)	>	10.0	x No	___ Yes	CONC. RANGE	
ARSENIC (AS)	>	5.0	x No	___ Yes	CONC. RANGE	
BARIUM (BA)	>	100.0	x No	___ Yes	CONC. RANGE	
BERYLLIUM (BE)	>	1.0	x No	___ Yes	CONC. RANGE	
CADMIUM (CD)	>	1.0	x No	___ Yes	CONC. RANGE	
CHROMIUM (CR)	>	5.0	x No	___ Yes	CONC. RANGE	
LEAD (PB)	>	5.0	x No	___ Yes	CONC. RANGE	
MERCURY (HG)	>	0.2	x No	___ Yes	CONC. RANGE	
NICKEL (NI)	>	5.0	x No	___ Yes	CONC. RANGE	
SELENIUM (SE)	>	1.0	x No	___ Yes	CONC. RANGE	
SILVER (AG)	>	5.0	x No	___ Yes	CONC. RANGE	
THALLIUM (TL)	>	10.0	x No	___ Yes	CONC. RANGE	

E. OTHER COMPONENTS - n/a PPM ___ %

SULFUR n/a PCB'S n/a HALOGENS n/a

F. HAZARDOUS CHARACTERISTICS

REACTIVITY n/a None n/a Water Reactive n/a Shock Sensitive
n/a Pyrophoric n/a Explosive n/a Sulfides: ___
n/a Cyanides: n/a n/a Other: ___
OTHER HAZARDOUS CHARACTERISTICS: ___ Ignitable
n/a Corrosive n/a TCLP Wastes ___ Other: ___
USEPA HAZARDOUS WASTE? ___ Yes X No
USEPA HAZARDOUS WASTE CODE(S): ___

STATE HAZARDOUS WASTE? ___ Yes X No
STATE HAZARDOUS WASTE CODE(S): ___

G. SHIPPING INFORMATION

DOT HAZARDOUS MATERIAL? ___ Yes x No
PROPER SHIPPING NAME Non-RCRA / Non-DOT Regulated Material
HAZARD CLASS N/A ID NO. ___
PACKAGING GROUP ___ EMERGENCY RESPONSE GUIDE: ___
PRIMARY CONSTITUENTS CONTRIBUTING TO HAZARD:

24 HR. EMERGENCY PHONE NO. 800-255-3924
METHOD OF SHIPMENT: ___ Bulk X Drums [Type/Size ___]
ESTIMATED VOLUME: 55 Gal 1 Drums /Tons per YEAR

H. SPECIAL HANDLING OR INCOMPATIBILITIES

IS THIS WASTE SUBJECT TO BENZENE WASTE NESHAP? ___ Yes X No ___ Additional Pages Attached

GENERATOR CERTIFICATION

I hereby certify that all information in this and all attached documents is true and accurate, and that all known or suspected hazards have been disclosed. I certify that there are no hazardous constituents or characteristics except as described above, and if the waste stream or process generating the waste changes, I will notify M & M Chemical prior to shipment of the waste.

Signature _____ Title EHS Specialist

Printed/Typed Name Johnny Tapia Date 10/16/19

GIANT RESOURCE RECOVERY-ATTALLA, INC profile # _____

BENZENE NESHAP QUESTIONNAIRE

Generator Name: **Plantation Pipe Line Co.**

Generator Location (city & state): **Belton, SC**

Estimated Annual Quantity of Waste Shipped: **50** Gal. / **1** Drums

Description of Waste: **Used booms and socks**

A. Does the current Waste Profile Sheet indicate the presence of benzene in this waste stream or is the waste described by one of the following Waste Codes: D018, F005, U019, F024, F037, F038, K085, K105?

Yes _____ _____ No x

Applicable Waste Code(s)

B. Is the waste stream generated by any of the following types of industries:

1. Petroleum Refineries (SIC = 2911)
2. Chemical Manufacturing Plants (SIC = 2800-2899)
3. Coke-By-Product Recovery Plants (SIC 3312)
4. Treatment, Storage, and Disposal Facilities handling benzene wastes from 1, 2, or 3 (SIC = 4953, 4959, 9511, 4214)

Yes _____ Which SIC Code? _____ No x

C. Is the waste stream benzene concentration greater than 10 ppm?

Yes _____ No x

D. Does this waste contain greater than 10% water?

Yes _____ No x

E. What is your total annual benzene (TAB)? _____ Mg/yr

F. Is this waste subject to the Benzene Waste Operations NESHAP control requirements (40 CFR Part 61 Subpart FF)?

Yes _____ No x

CERTIFICATION

I hereby certify that all information submitted in this document is complete and accurate to the best of my knowledge and information.

Signature EHS Specialist Title 10/16/19 Date

TC RULE CERTIFICATION FORM

PROFILE #: _____

Generator Name: **Plantation Pipe Line Co.** EPA ID#: _____

Location: **Belton, SC**

Waste Description: **Used booms and socks**

CHARACTERISTICS OF HAZARDOUS WASTE: Indicate if this waste contains any of the following characteristics based on criteria mandated by 40 CFR 261.21, 261.22, 261.23, 261.24

			Regulatory Threshold Level	Check One Yes	Check One No	Check One Scientific Data	Generators Knowledge	Actual Value
D001	Characteristic of Ignitability	<	140 F		x		x	F
D002	Characteristic of Corrosivity	≤ ≥	2 or 12.5		x		x	pH
D003	Characteristic of Reactivity				x		x	

	Constituent	*Regulatory Threshold Level, ppm	Check One Yes	Check One No	Check One Scientific Data	Generators Knowledge	Actual Value ppm
D004	Arsenic	5.0		x		x	
D005	Barium	100.0		x		x	
D006	Cadmium	1.0		x		x	
D007	Chromium	5.0		x		x	
D008	Lead	5.0		x		x	
D009	Mercury	0.2		x		x	
D010	Selenium	1.0		x		x	
D011	Silver	5.0		x		x	
D012	Endrin	0.02		x		x	
D013	Lindane	0.4		x		x	
D014	Methoxychlor	10.0		x		x	
D015	Toxaphene	0.5		x		x	
D016	2, 4-D (2,4-Dichloro-phenoxyacetic acid)	10.0		x		x	
D017	2,4, 5-TP (Silvex)	1.0		x		x	
D018	Benzene	0.5		x		x	
D019	Carbon Tetrachloride	0.5		x		x	
D020	Chlordane	0.03		x		x	
D021	Chlorobenzene	100.0		x		x	
D022	Chloroform	6.0		x		x	
D023	o-Cresol	200.0		x		x	
D024	m-Cresol	200.0		x		x	
D025	p-Cresol	200.0		x		x	

--Continued--

PROFILE #: _____

	Constituent	*Regulatory Threshold Level, ppm	Check One Yes	Check One No	Check One Scientific Data	Generators Knowledge	Actual Value ppm
D026	Cresol	200.0		x		x	
D027	1,4 Dichlorobenzene	7.5		x		x	
D028	1,2 Dichloroethane	0.5		x		x	
D029	1,1 Dichloroethylene	0.7		x		x	
D030	2,4 Dinitrotoluene	0.13		x		x	
D031	Heptachlor (and its hydroxide)	0.008		x		x	
D032	Hexachlorobenzene	0.13		x		x	
D033	Hexachlorobutadiene	0.5		x		x	
D034	Hexachloroethane	3.0		x		x	
D035	Methyl Ethyl Ketone	200.0		x		x	
D036	Nitrobenzene	2.0		x		x	
D037	Pentachlorophenol	100.0		x		x	
D038	Pyridine	5.0		x		x	
D039	Tetrachloroethylene	0.7		x		x	
D040	Trichloroethylene	0.5		x		x	
D041	2,4,5-Trichlorophenol	400.0		x		x	
D042	2,4,6-Trichlorophenol	2.0		x		x	
D043	Vinyl Chloride	0.2		x		x	

As defined by the TCLP (Method 1311), EP Toxicity is no longer acceptable

Listed Hazardous Waste: Indicate if this waste also contains any listed hazardous wastes coded in 40 CFR 261.31, 261.32 and 261.33 by including the appropriate EPA hazardous waste code(s).

NA

GENERATOR CERTIFICATION:

I hereby certify that all information submitted on this form and all attached documents are true and accurate. In the event this form is not fully completed, I authorize Giant Resource Recovery-Attalla Inc. to conduct necessary testing at my expense to properly complete the form.

Signature: _____ Date: 10/16/19

Print Name: **Johnny Tapia** Title: EHS Specialist

THIS CERTIFICATION/RECERTIFICATION IS REQUIRED FOR EACH PROFILE

ORIGINAL SIGNATURE REQUIRED

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	VSQG	1	803-957-9175	20030057-01

GENERATOR

5. Generator's Name and Mailing Address: Kinder Morgan - Plantation Pipeline, 112 Lenzi Drive, Belton, SC 29627
Generator's Site Address (if different than mailing address):
Generator's Phone: 336-604-0824

6. Transporter 1 Company Name: A&D ENVIRONMENTAL SERVICES (SC), LLC — U.S. EPA ID Number: SCD987593331

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: A&D Environmental Services, Inc., 2718 Uwharrie Rd., Archdale, NC 27263 — U.S. EPA ID Number: NCD988232221
Facility's Phone: 336-434-7750

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-RCRA / NON-DOT REGULATED MATERIAL (PETROLEUM CONTACT WATER)	1	TT	2772	G	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
PROJECT NUMBER: 2009-0057
PROFILE NUMBER: NC2019021B
Jacobs VT 1010

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.
Generator's/Offeror's Printed/Typed Name: X On Behalf of Kinder Morgan Doug Johnson — Signature: X Doug Johnson — Month 3 Day 4 Year 20

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: X Doug Johnson — Signature: X Doug Johnson — Month 3 Day 4 Year 20
Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in item 17a
Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY TO GENERATOR

A&D Environmental Services, Inc.
2718 Uwharrie Rd., Archdale, NC 27263
336-434-7750 FAX: 336-434-7752

Reserved for Facility Use Approval Date: _____ By: _____ Expiration Date: 1 yr from Approval Date

☐ Solidification ☑ Recovery **Profile Number:** _____

A. Billing Information

Company Jacobs Account # _____
Address 6600 Peachtree Dunwoody Rd
City/State Atlanta, GA Zip 30328 Contact _____
Phone 770-604-9182 Fax _____

B. Generator Information/Location of Waste

Generator Name Kinder Morgan Site Contact Johnny Tapia
Address 112 Lewis Drive
City/State Belton, SC Zip 29627
Contact Phone (704) 249-9936 EPD ID _____
Type of Business Underground Pipe Line Facility SIC Code _____

C. Waste Description

Common Name of Waste Petroleum Contact Water
Process Generating Waste Purging groundwater monitoring wells

D. Physical Properties

Physical State	Odor	Color	Viscosity	Specific Gravity
☐ 100% Solid	☐ None	Describe:	☐ Low	
☑ 100% Liquid	☑ Mild	Clear	☑ Medium	8.34 lb/gallon
☐ Sludge	☐ Strong		☐ High	
_____ % Free Liquid	Describe: _____			

Flash Point		pH		Water	
☐ <73 F	☐ 140-199 F	☐ < 2	☐ 9.1 - 12.4	☐ < 5%	☐ 30-80%
☐ 73-99 F	☑ >199 F	☐ 2.1 - 4.9	☐ > 12.5	☐ 5-10%	☑ 80-100%
☐ 100-139 F	☐ N/A	☑ 5 - 9	☐ N/A	☐ 10-30%	☐ N/A

Is this waste incompatible with other material? ☑ No ☐ Yes If Yes, explain: _____

E. Volume

Anticipated Volume: 2,800 Gal ☐ Drums ☐ 5-Gallon ☐ 30-Gallon ☐ 55-Gallon ☐ Tote ☐ Bulk ☐ Tanker ☑ Pump Truck ☐ Other: _____

Estimated Frequency: ☐ Weekly ☐ Semimonthly ☐ Monthly ☐ Quarterly ☑ Other semi-annual

F. Constituents

Total must be equal to 100%. All constituents, including debris must be identified.

Constituents	Actual %	Range
Water	>99.99	
Gasoline	<0.01	
	0%	

G. Other Hazards

☐ Radioactive
☐ Water Reactive
☐ Oxidizer
☐ OSHA
☐ Carcinogen
☐ Explosive
☐ Pesticide
☐ Polymerizable
☐ Organic Peroxide
☐ Infectious
☐ Pryophoric

H. Process Flow Chart

Using the space provided, draw a flow chart showing how waste is generated

I. Constituents

These values are based on ☑ Generator Knowledge ☐ Analytical Results

All analytical data provided relevant to this profile must be conducted by laboratories that have NELAP/NELAC accreditation.

Accreditation Number: _____ Name: _____

Address: _____ Phone: _____

Inorganic

Metals		Level	(mg/l)
D004	Arsenic	5.0	<5.
D005	Barium	100.0	< 100.0
D006	Cadmium	1.0	< 1.0
D007	Chromium	5.0	< 5.0
D008	Lead	5.0	< 5.0
D009	Mercury	0.2	< 0.2
D010	Selenium	1.0	< 1.0
D011	Silver	5.0	< 5.0

Other	Conc.
Ammonia	n/a
Phosphorus	n/a
Formaldehyde	n/a
Total Solids	n/a
PCBs	n/a
Copper	n/a
Nickel	n/a
Zinc	n/a

Pesticides/Herbicides		Level	(mg/l)
D012	Endrin		n/a
D013	Lindane		n/a
D014	Methoxychlor		n/a
D015	Toxaphene		n/a
D016	2,4-D		n/a
D017	2,4,5-TP		n/a
D020	Chlordane		n/a
D031	Heptachlor		n/a

Organic

Volatile Compounds		Level	(mg/l)
D018	Benzene	0.5	< 0.5
D019	Carbon Tetrachloride	0.5	< 0.5
D021	Chlorobenzene	100.0	< 100.0
D022	Chloroform	6.0	< 6.0
D028	1,2-Dichloroethane	0.5	< 0.5
D029	1,1-Dichloroethylene	0.7	< 0.7
D035	Methyl Ethyl Ketone	200.0	< 200.0
D039	Tetrachloroethylene	0.7	< 0.7
D040	Trichloroethlene	0.5	< 0.5
D043	Vinyl Chloride	0.2	< 0.2

Semi-Volatile Compounds		Level	(mg/l)
D023	o-Cresol	200.0	< 200.0
D024	m-Cresol	200.0	< 200.0
D025	p-Cresol	200.0	< 200.0
D026	Cresol	200.0	< 200.0
D027	1,4-Dichlorobenzene	7.5	< 7.5
D030	2,4-Dinitrotoluene	0.13	< 0.13
D032	Hexchlorobenzene	0.13	< 0.13
D033	Hexachlorobutadiene	0.5	< 0.5
D034	Hexachloroethane	3.0	< 3.0
D036	Nitrolbenzene	2.0	< 2.0
D037	Pentachlorophenol	100.0	< 100.0
D038	Pyridine	5.0	< 5.0
D041	2,4,5-Trichlorophenol	400.0	< 400.0
D042	2,4,6-Trichlorophenol	2.0	< 2.0

J. General Information

1 ☑ No ☐ Yes Is this waste a hazardous material as defined in 49 CFR Section 172.101?
If yes, include shipping name, placard hazard class and packaging group:
_____

2 ☑ No ☐ Yes Is this waste regulated as a reportable quantity as defined in 49 CFR Section 172.101 Appendix A?

3 ☑ No ☐ Yes Is this waste a marine pollutant as defined in 49 CFR Section 172.101 Appendix B?

4 ☑ No ☐ Yes Is this hazardous waste, as determined by performing the Hazardos Waste Determination prescribed at CFR262.11? (Attach Documentation)

5 ☑ No ☐ Yes Does this waste contain any amount of Listed Hazardous Waste in 40 CFR 261.31, Hazardous Waste from Non-specific Sources; 261.32, Hazardous Waste from Specific Sources; and 261.33, Discarded Commercial Chemical Products, Off specification Species, Container Residues, and Spill Residues?

6 ☑ No ☐ Yes Does waste fail any of the four Hazardous Waste Characteristics of ignitibility, corrosivity, reactivity, and toxicity, as defined in 40 CFR 261.21, 261.22, 261.23, 261.23, respectively?

7 ☑ No ☐ Yes Is this waste state regulated? If Yes, define: _____

8 ☑ No ☐ Yes Are Material Safety Data Sheets and/or all analytical data relevant to this profile data sheet attached?

9 ☐ No ☑ Yes Is this waste derived from an Investigation of an Undergroud Storage Tank release (IDW)?

K. Sample

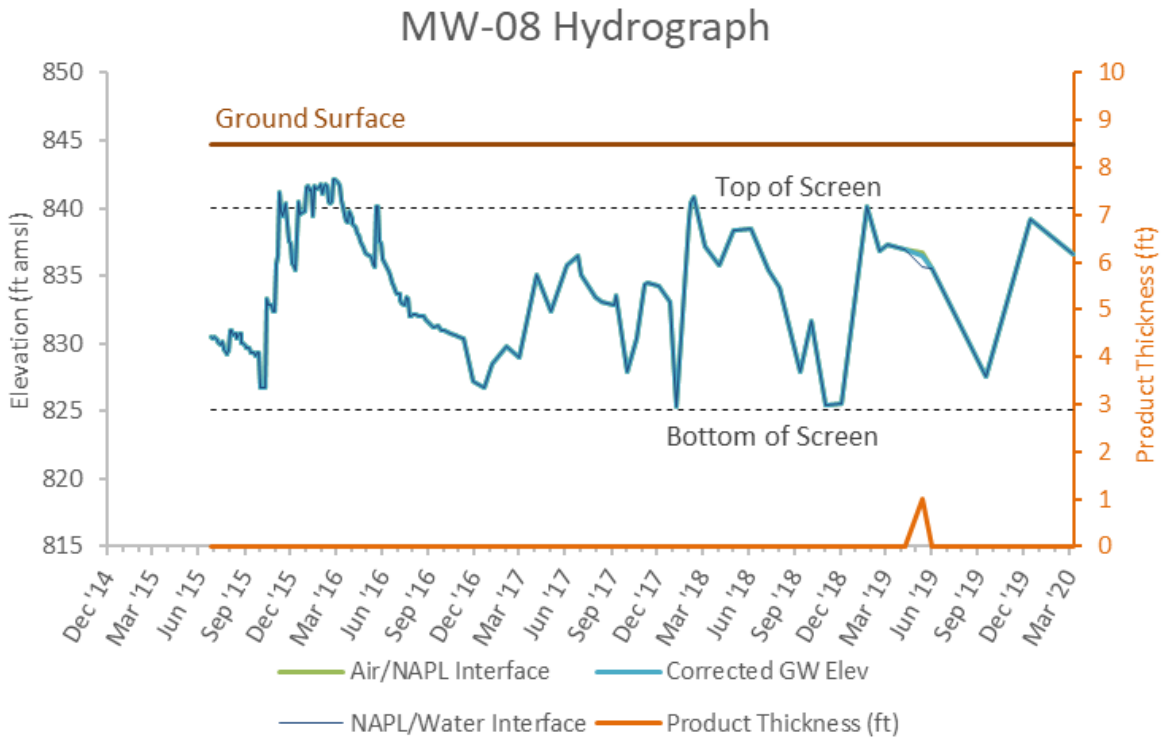
Has a sample been included? ☐ Yes ☑ No If yes, sampled by: _____ Date: _____

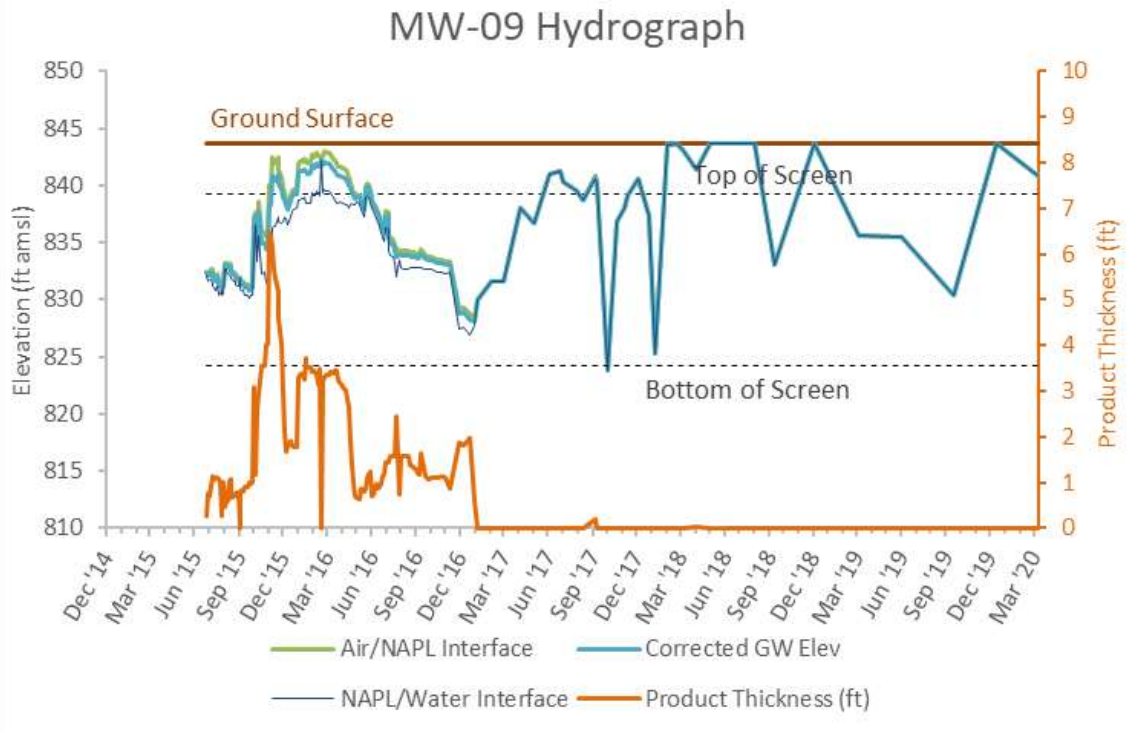
L. Generator's Certification

I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I also certify that any samples submitted are representative of the actual waste. If A&D Environmental Services discovers a discrepancy during the approval process, Generator grants A&D Environmental Services the authority to amend the profile, as A&D Environmental Services LLC deems necessary, to reflect the discrepancy.

Generator Signature	Print Name	Date
	Johnny Tapia	5/24/14

Appendix E
Product Thickness Trends


MW-08 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
850
845
840
835
830
825
820
815
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)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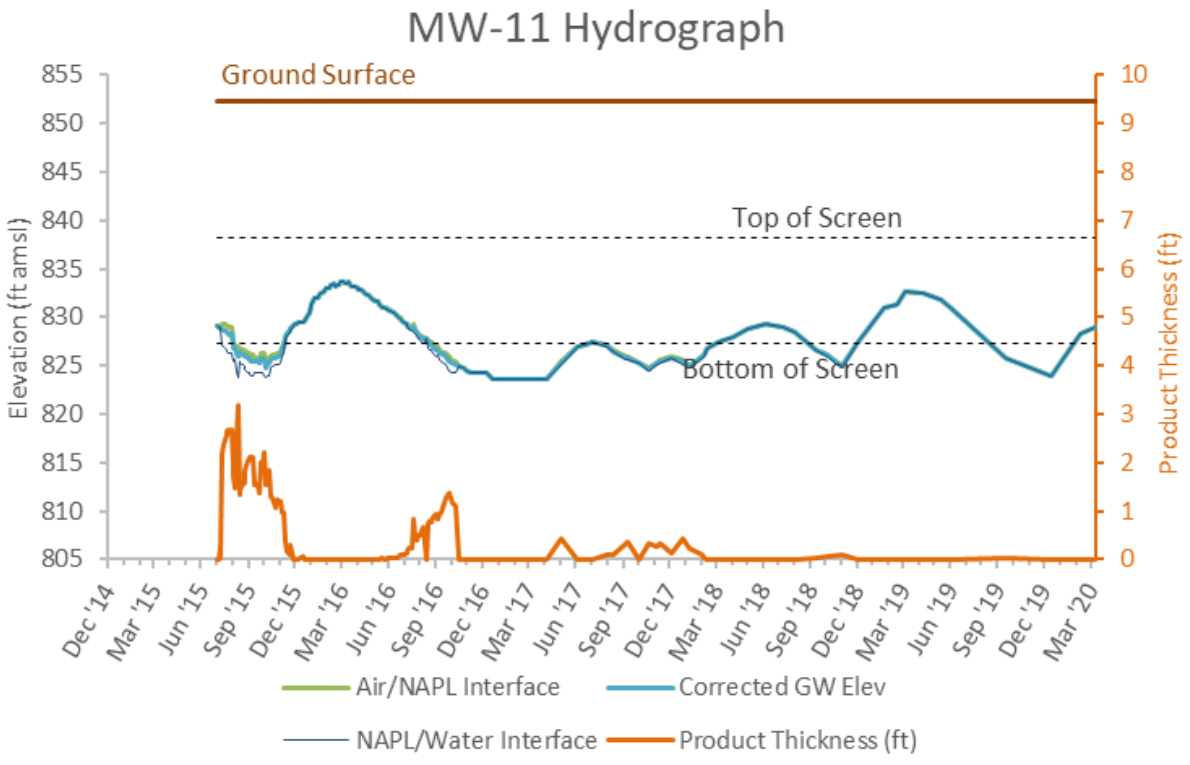
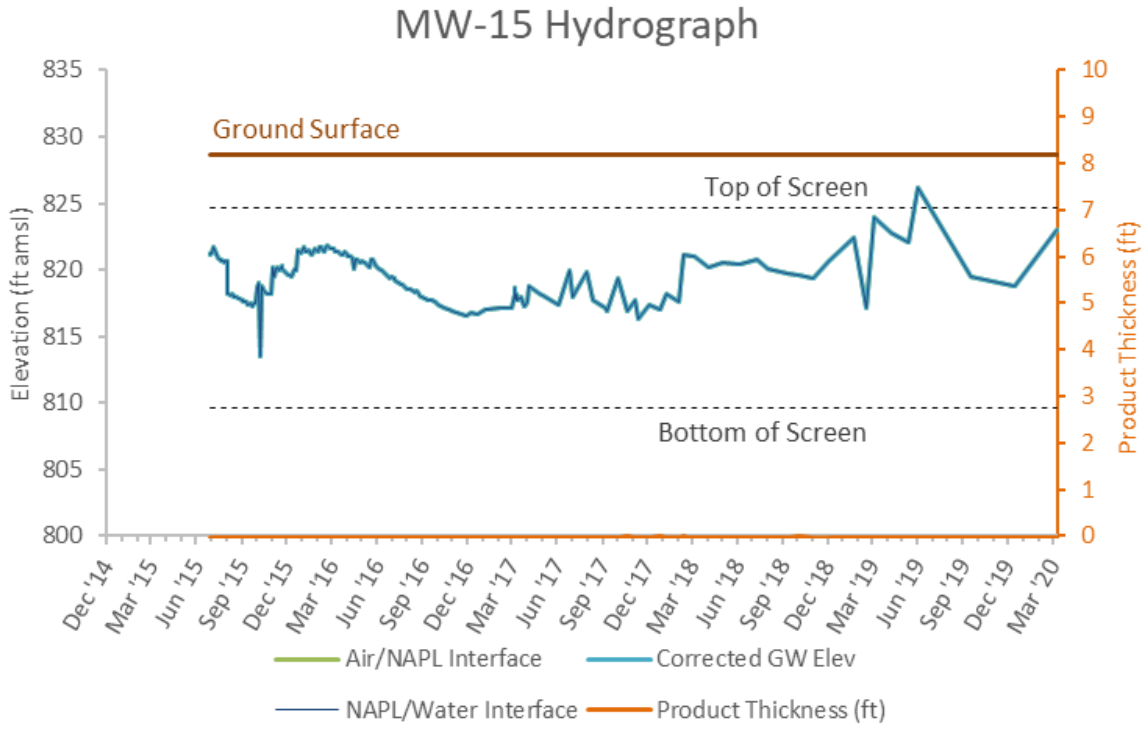
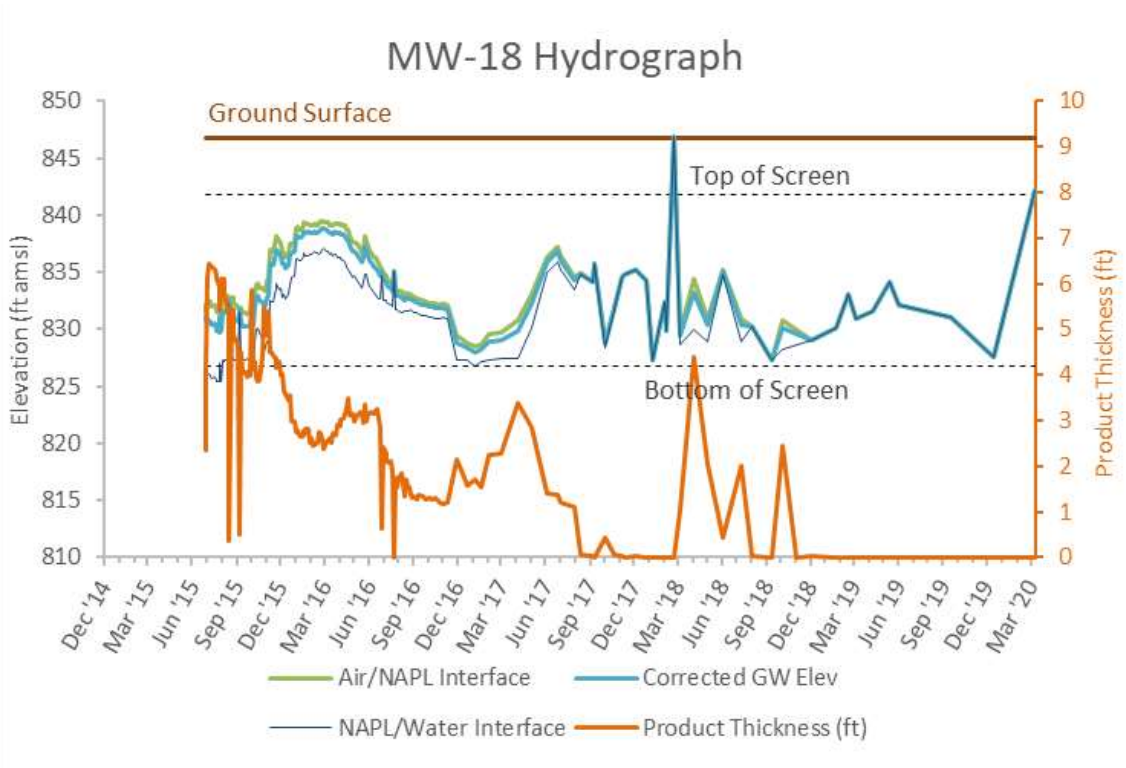
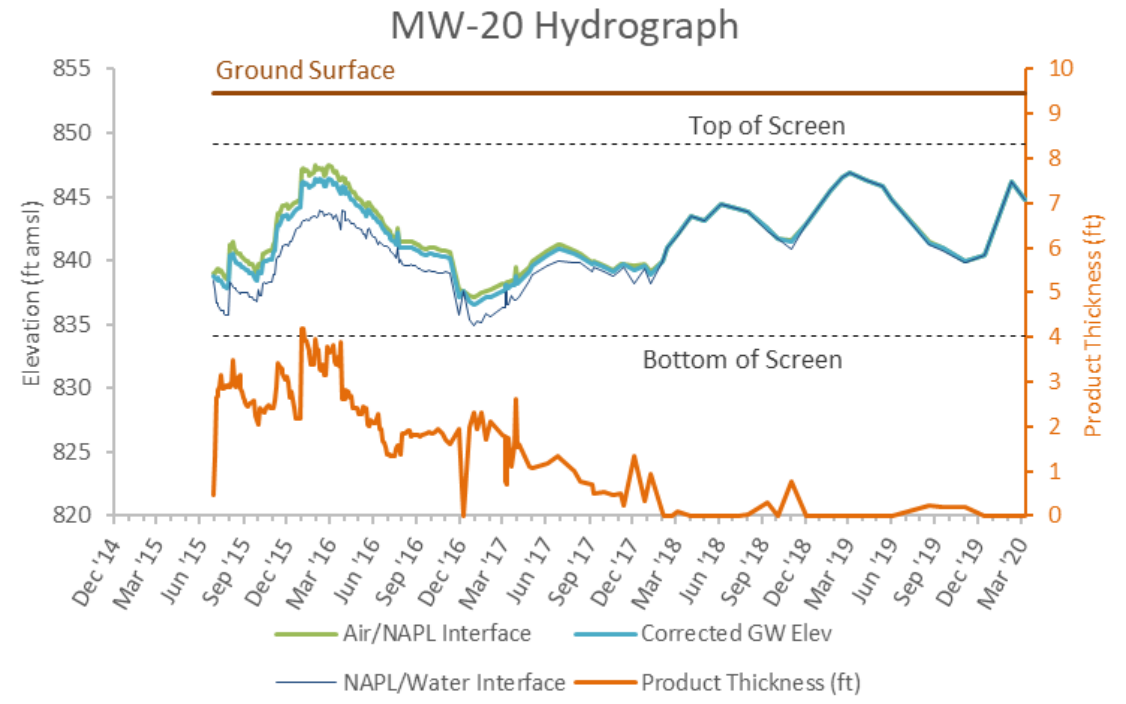
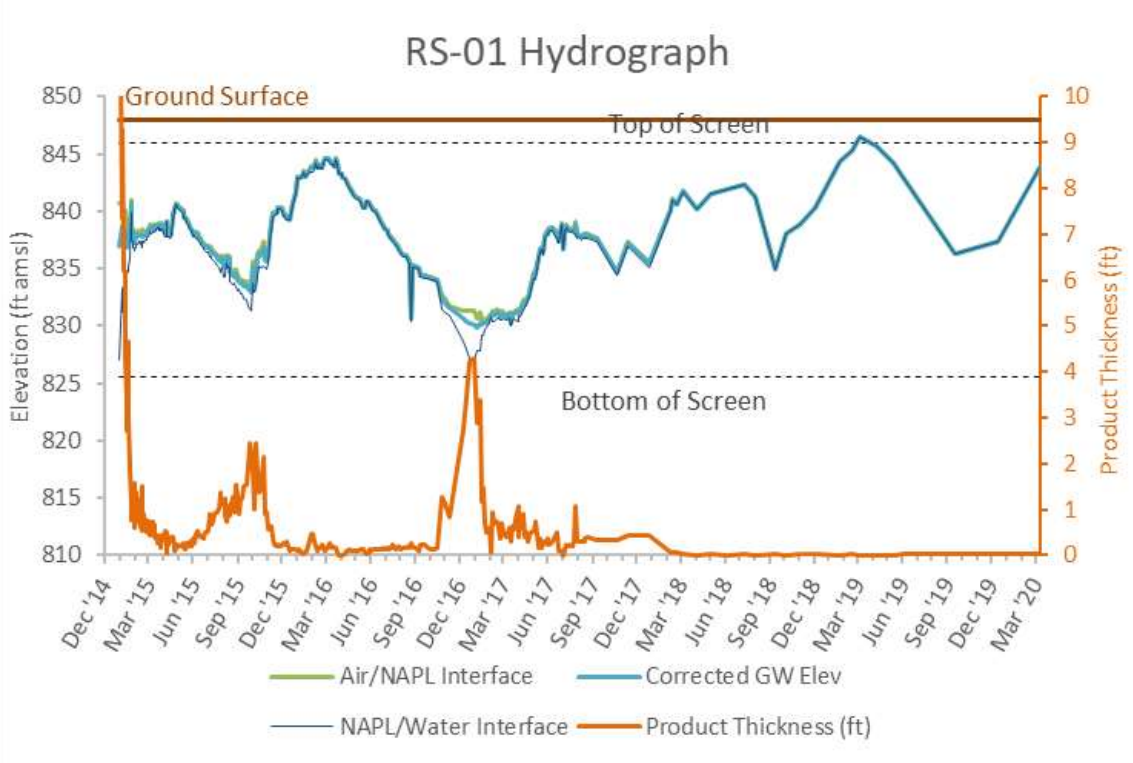
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
850
845
840
835
830
825
820
815
810
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

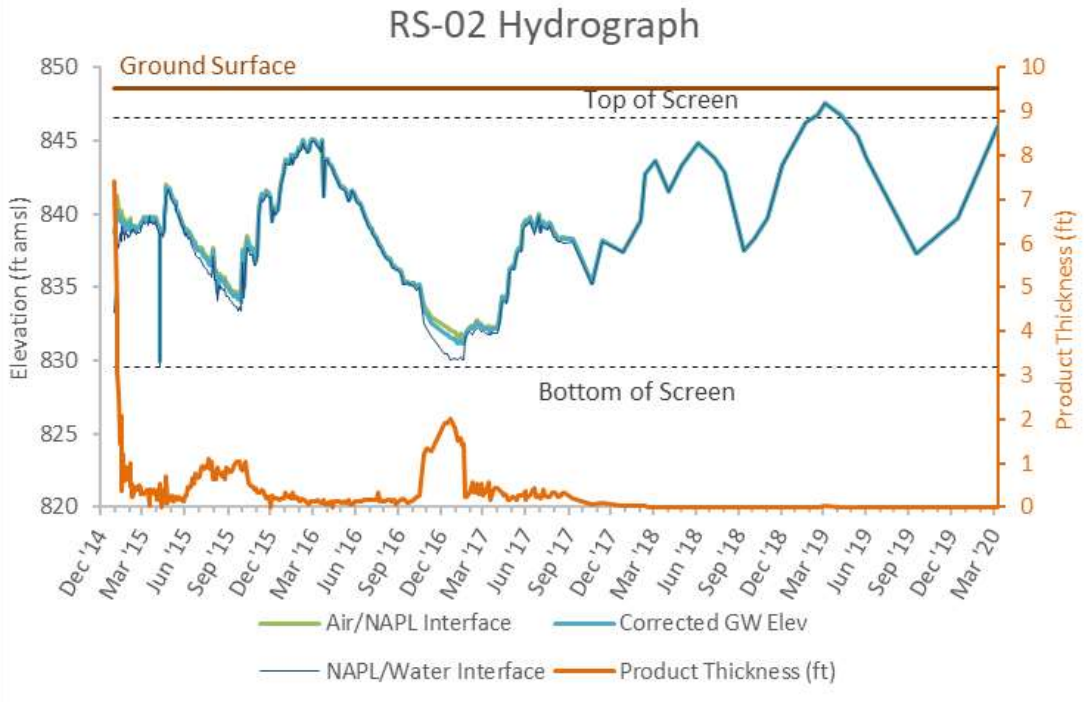

MW-11 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
855
850
845
840
835
830
825
820
815
810
805
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

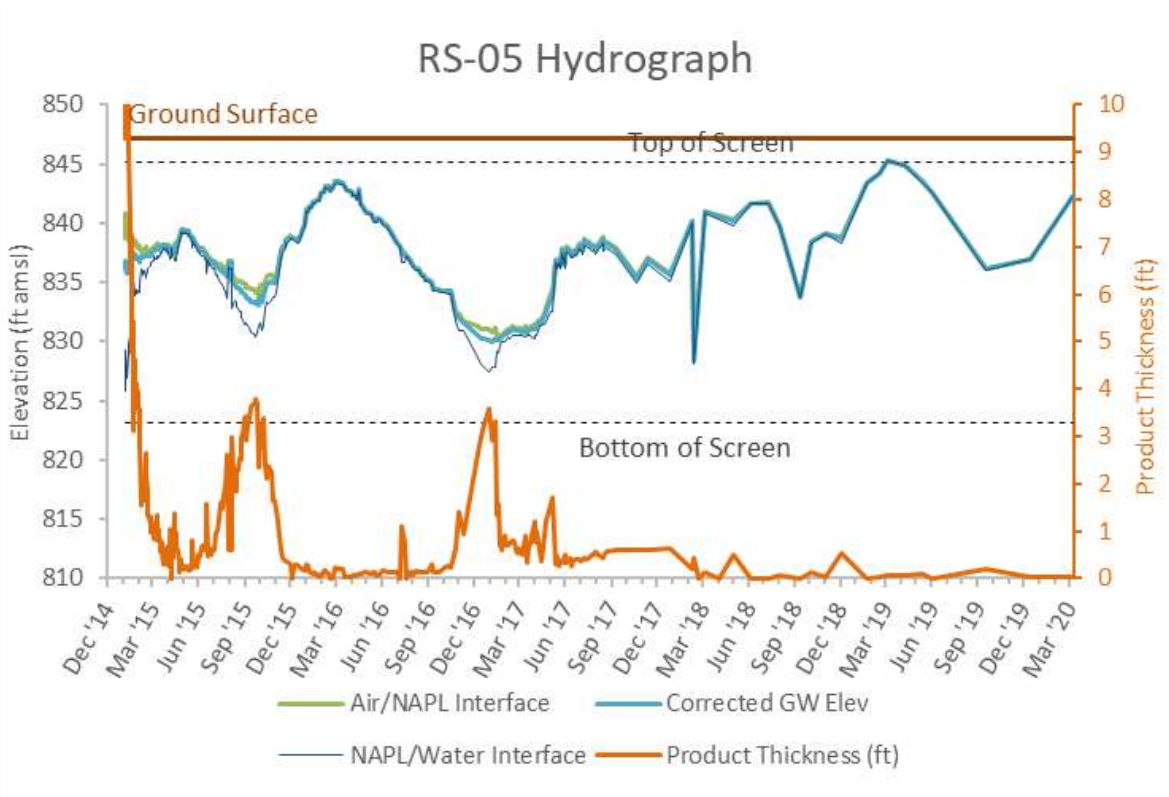

MW-15 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
835
830
825
820
815
810
805
800
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

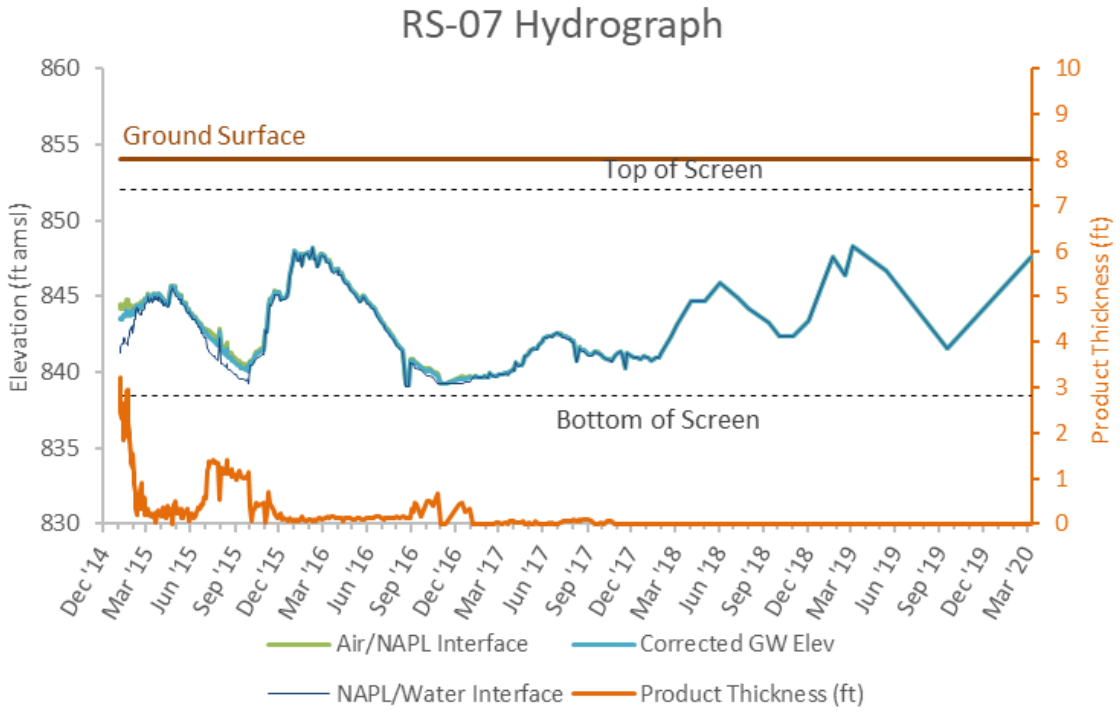

MW-18 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
850
845
840
835
830
825
820
815
810
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

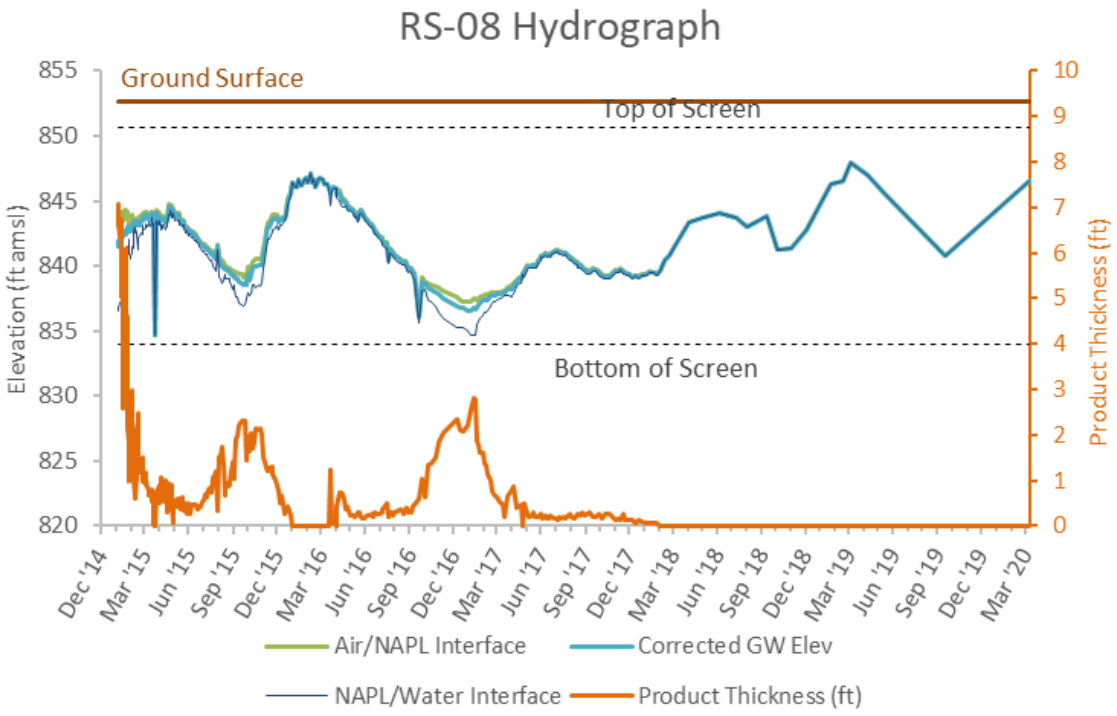

MW-20 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
855
850
845
840
835
830
825
820
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

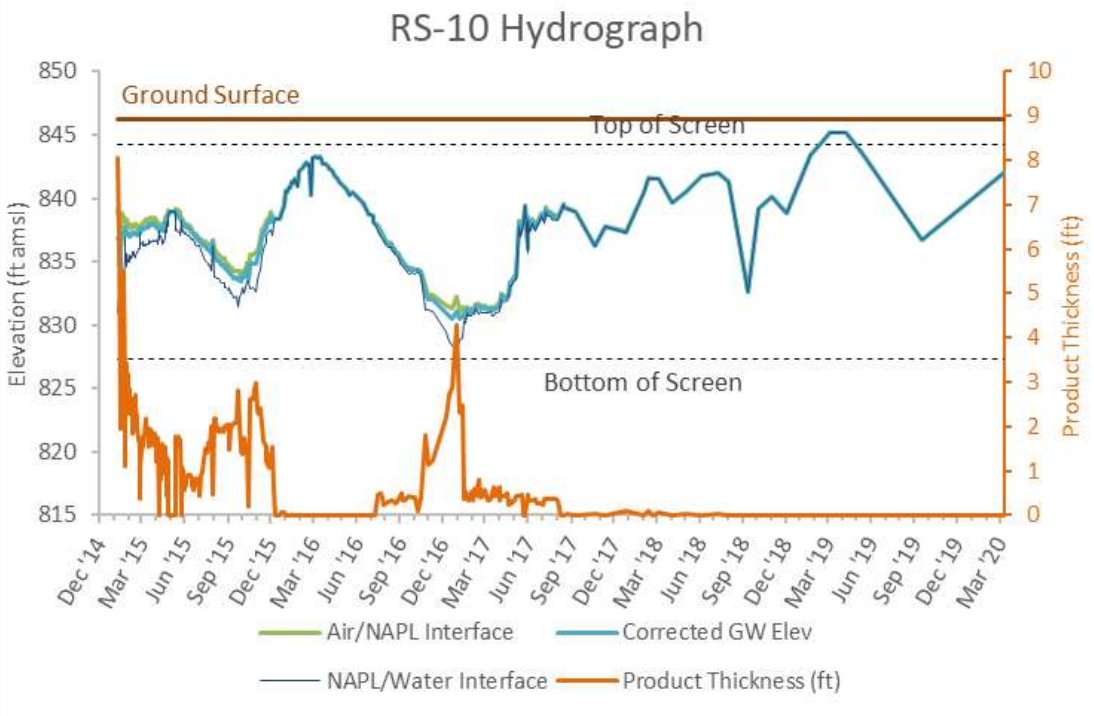

RS-01 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
850
845
840
835
830
825
820
815
810
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

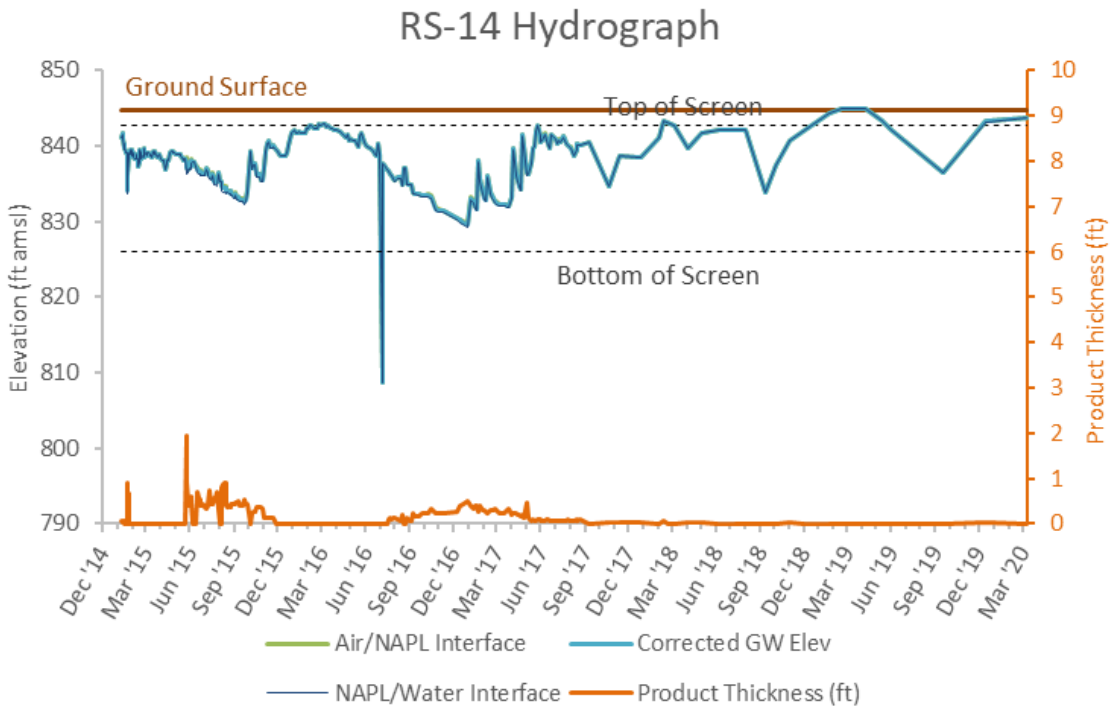

RS-02 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
850
845
840
835
830
825
820
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

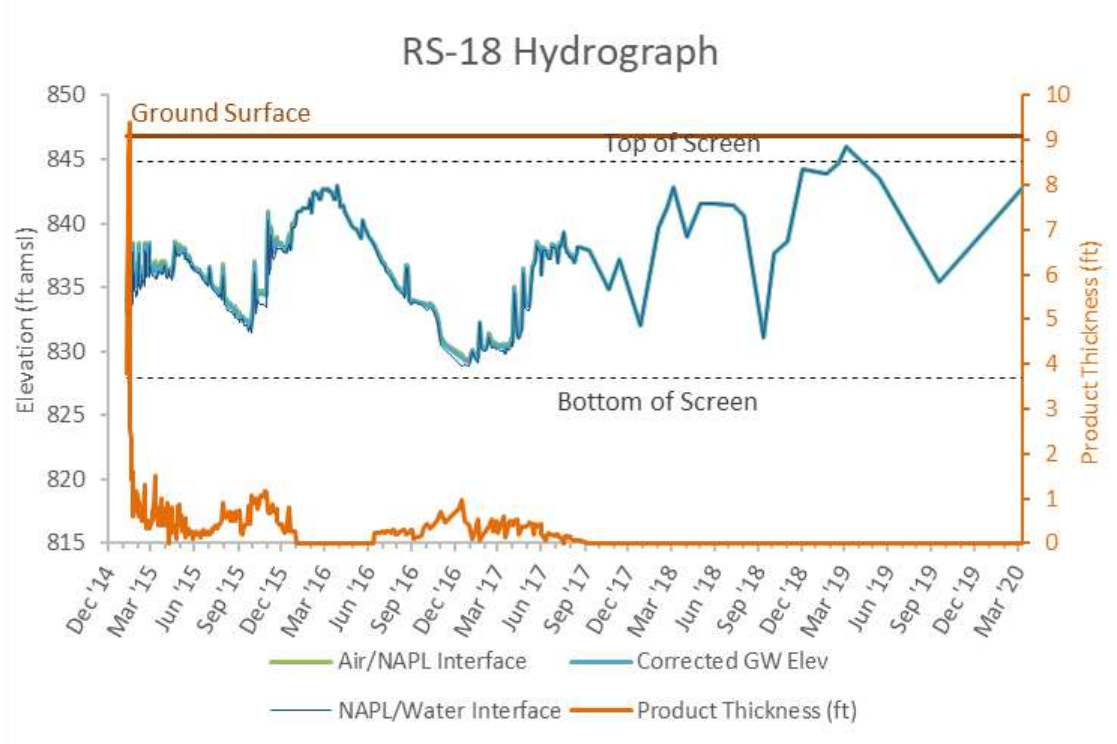

RS-05 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
850
845
840
835
830
825
820
815
810
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

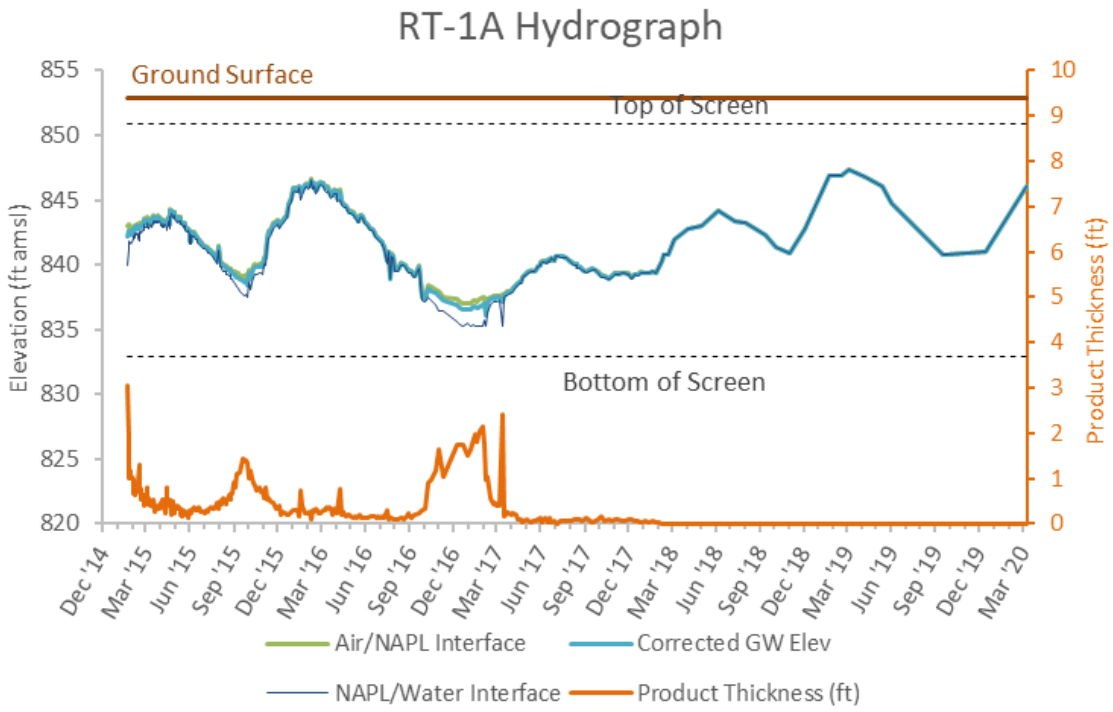

RS-07 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
860
855
850
845
840
835
830
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

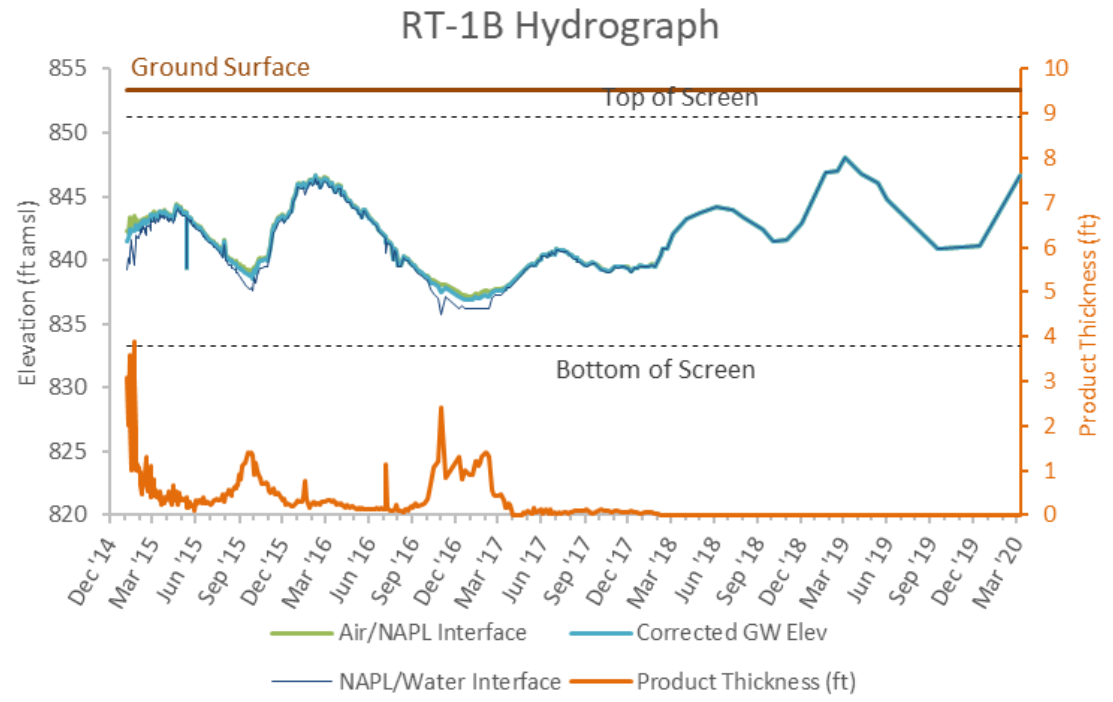

RS-08 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
855
850
845
840
835
830
825
820
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

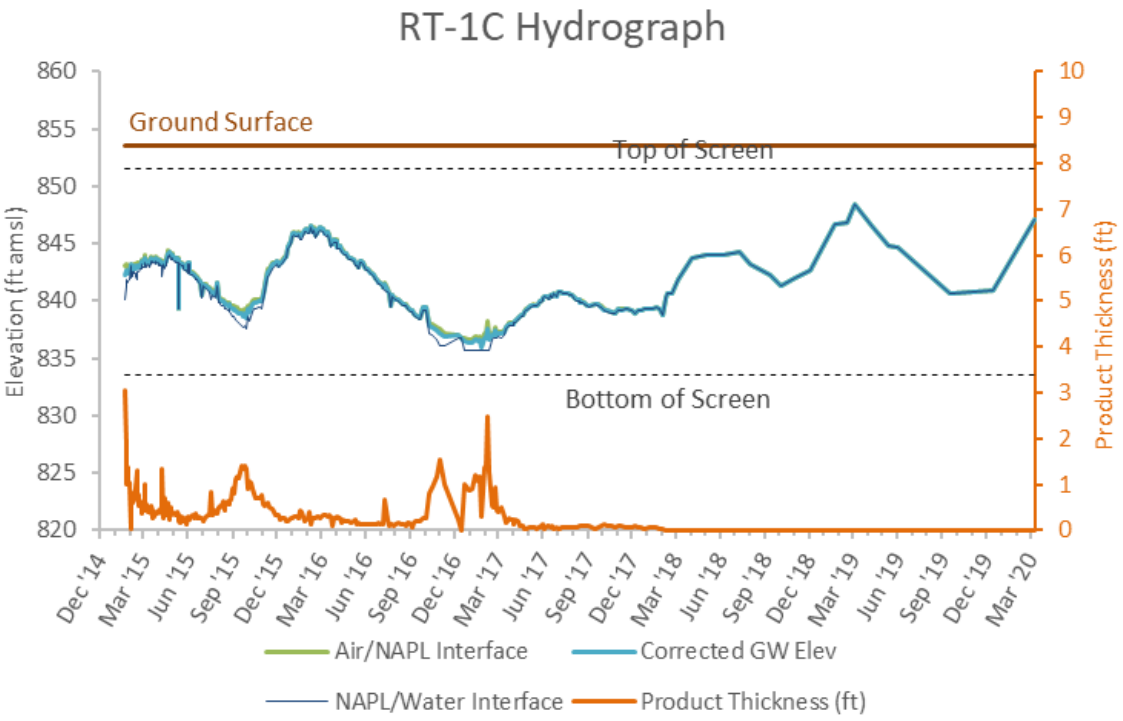

RS-10 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
850
845
840
835
830
825
820
815
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

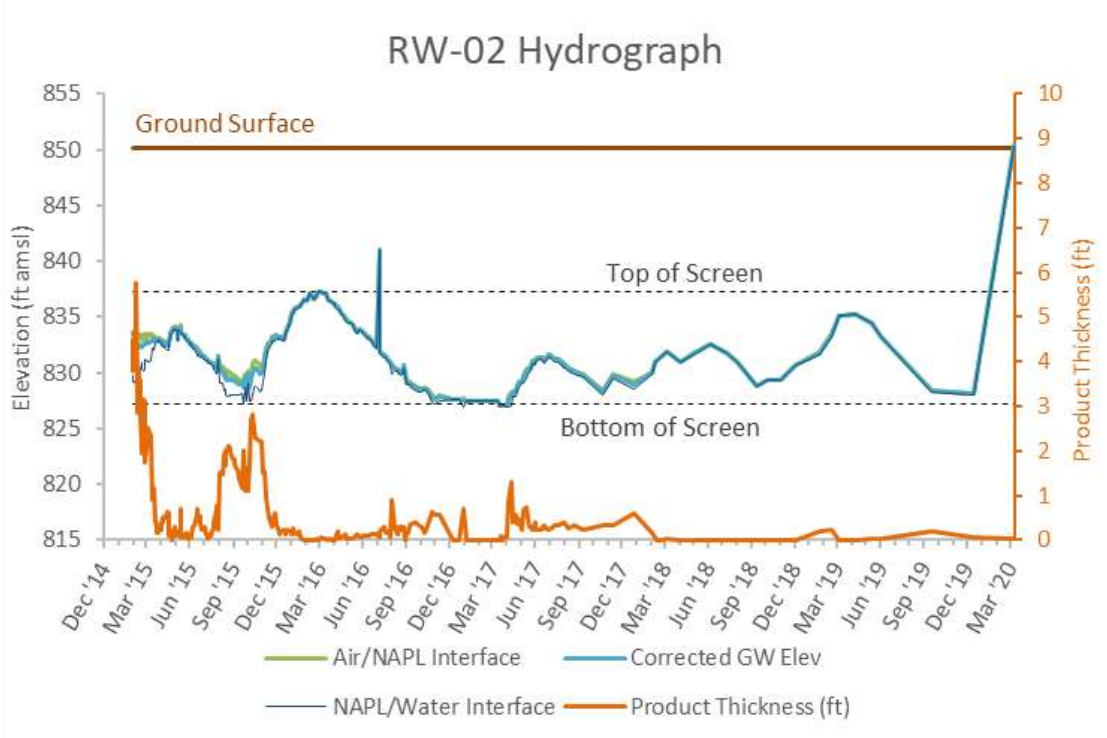

RS-14 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
850
840
830
820
810
800
790
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

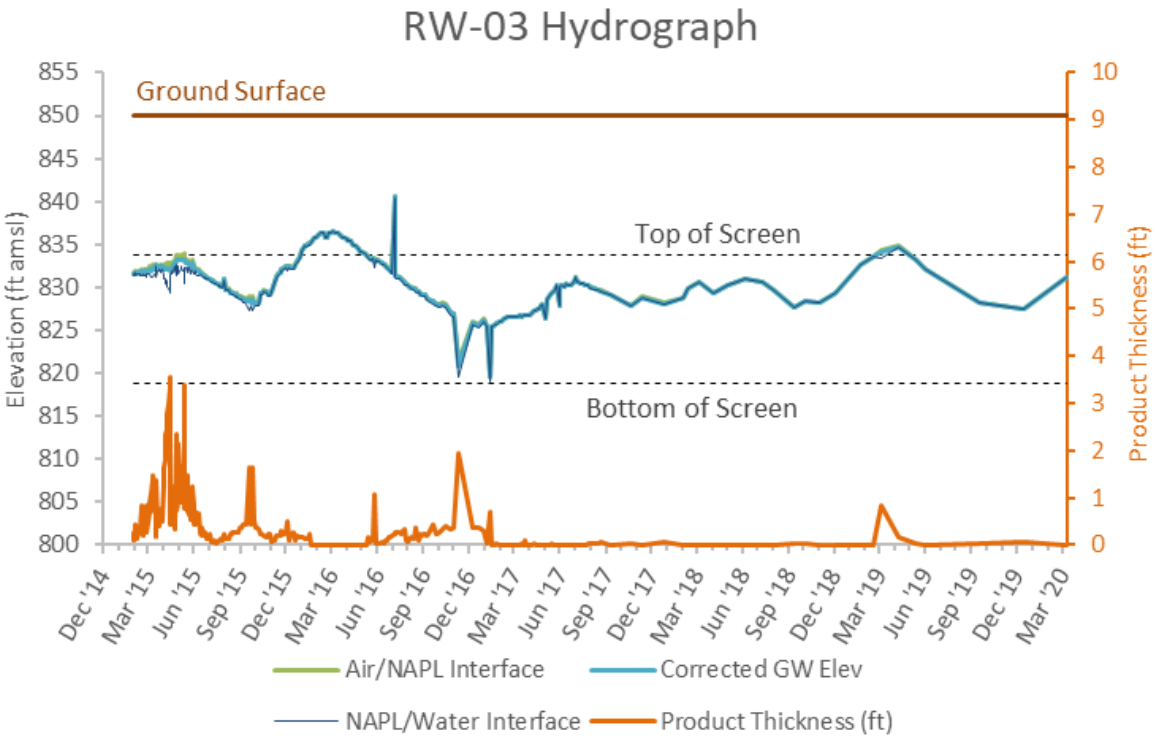

RS-18 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
850
845
840
835
830
825
820
815
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

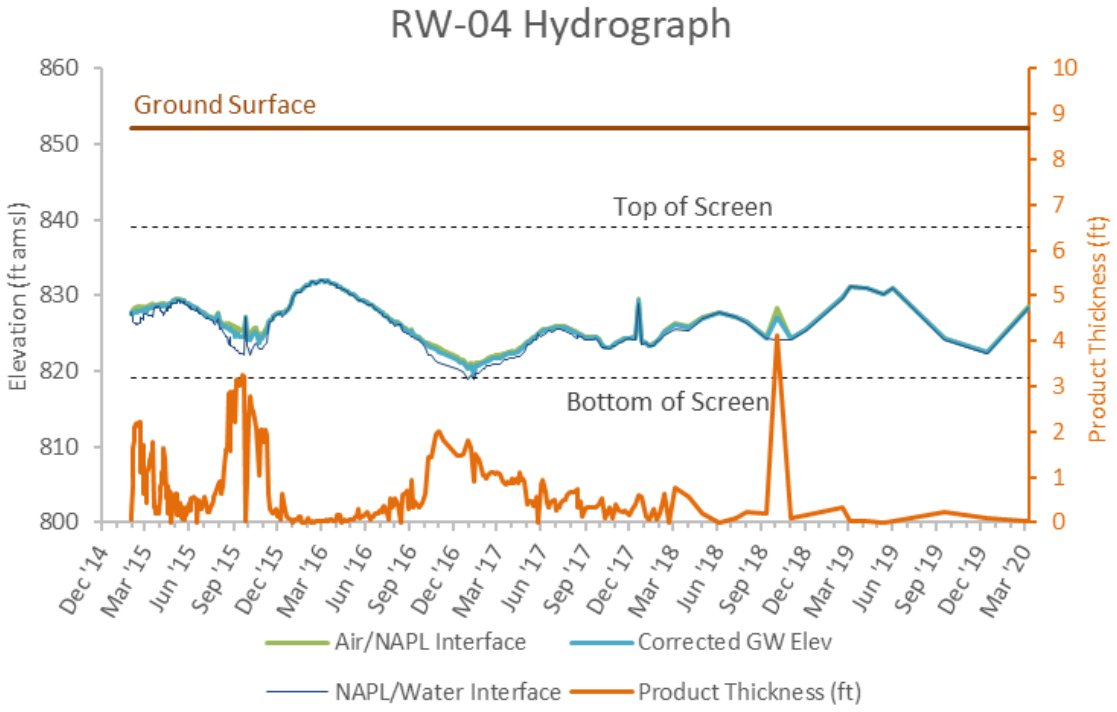

RT-1A Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
855
850
845
840
835
830
825
820
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

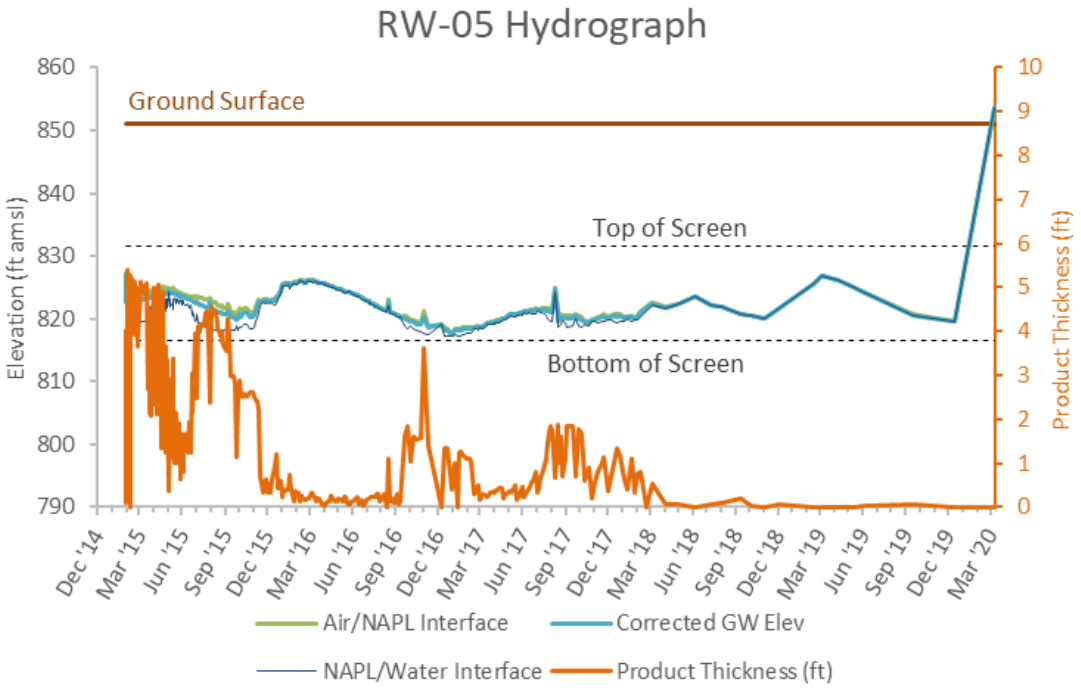

RT-1B Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
855
850
845
840
835
830
825
820
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

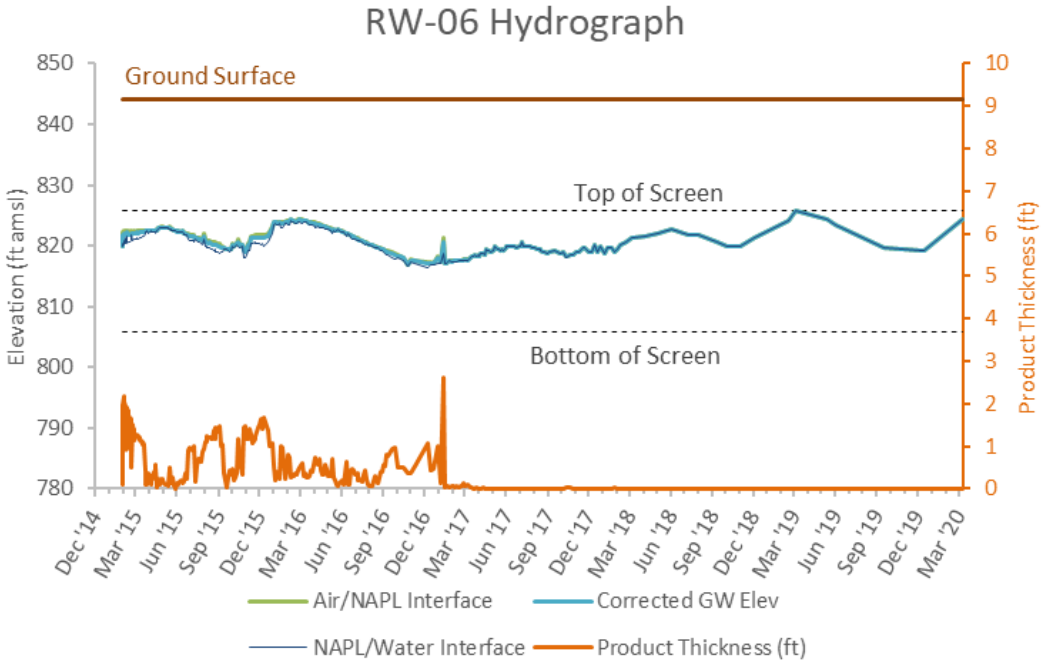

RT-1C Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
860
855
850
845
840
835
830
825
820
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

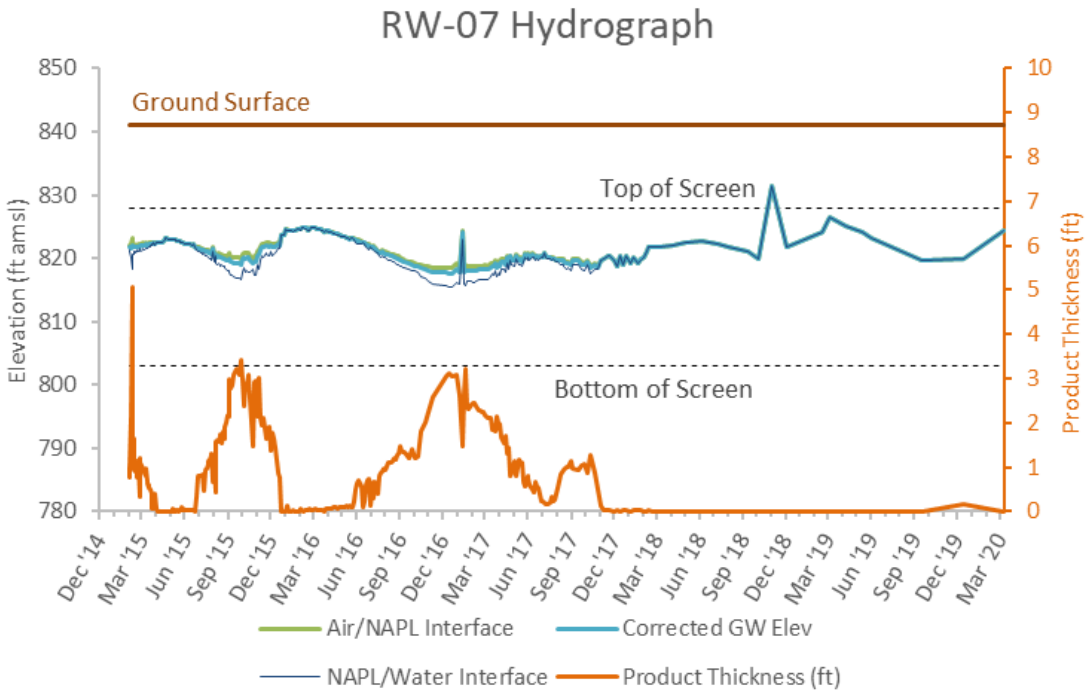

RW-02 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
855
850
845
840
835
830
825
820
815
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

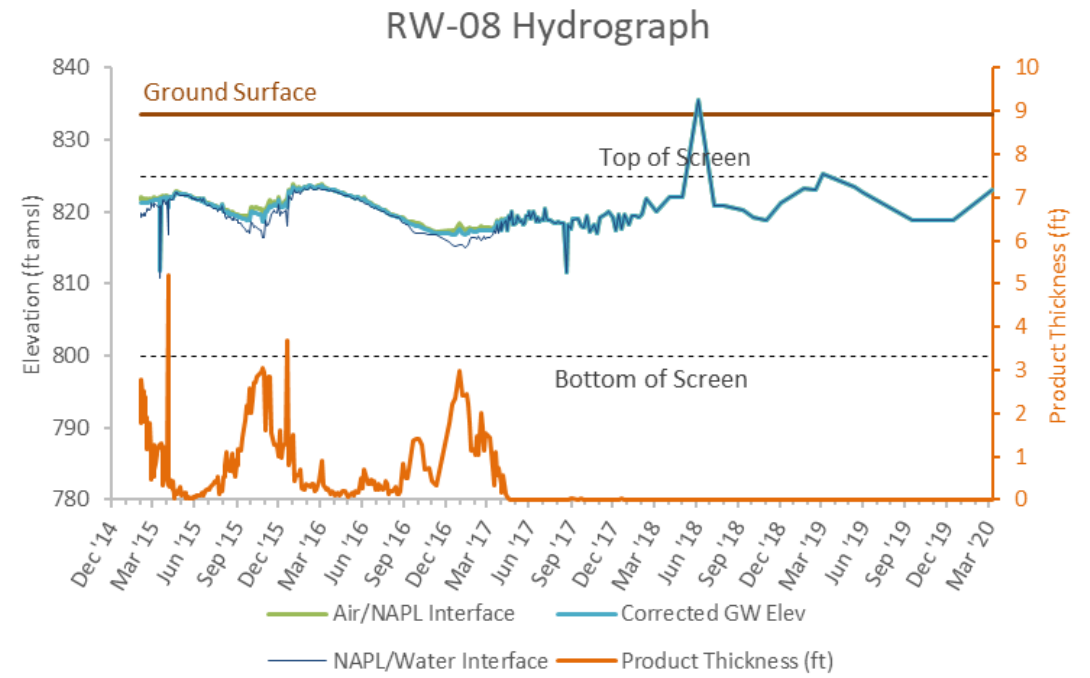

RW-03 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
855
850
845
840
835
830
825
820
815
810
805
800
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

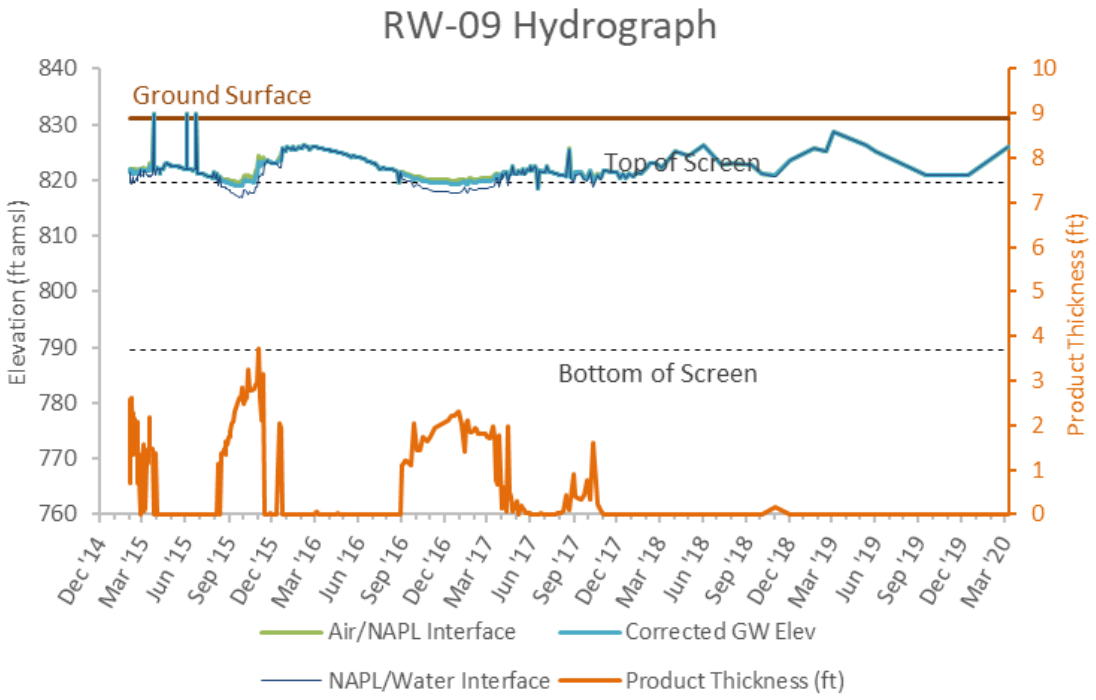

RW-04 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
860
850
840
830
820
810
800
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

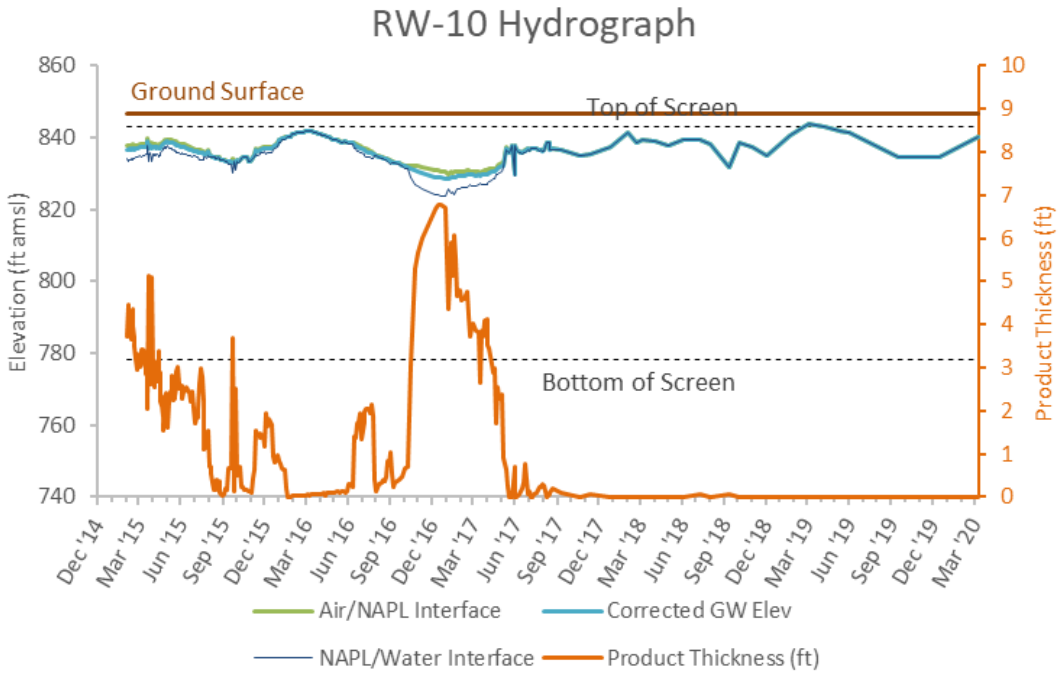

RW-05 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
860
850
840
830
820
810
800
790
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

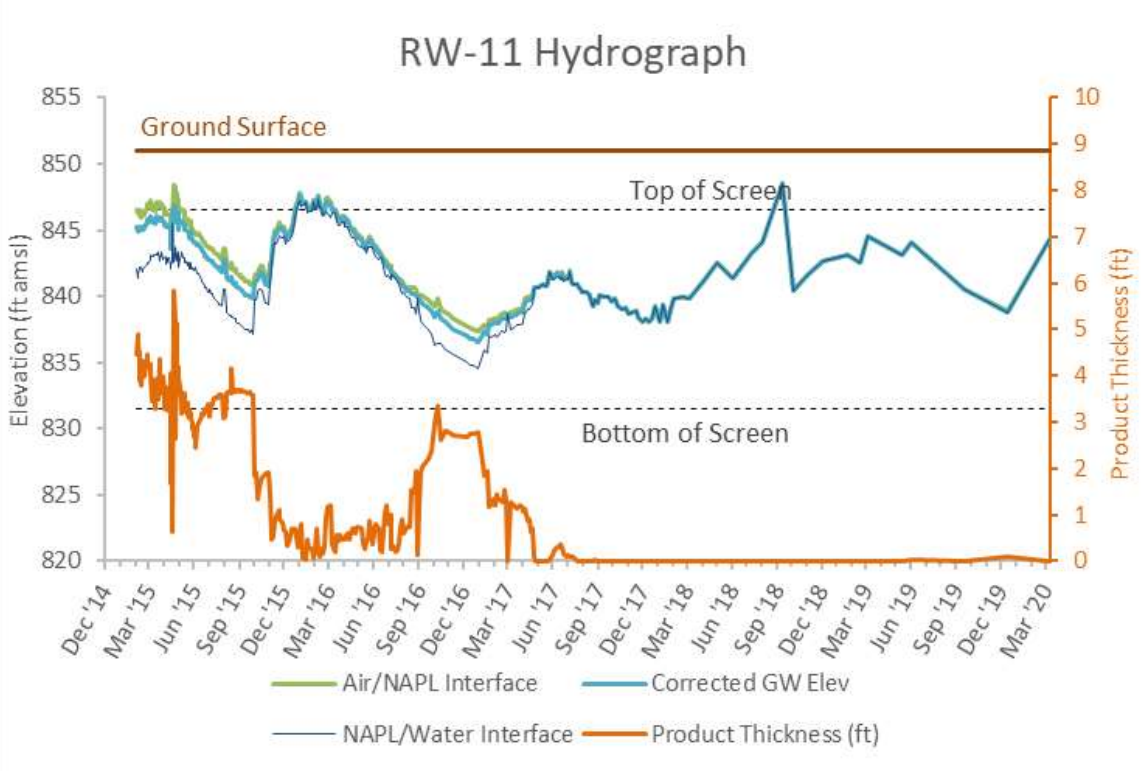

RW-06 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
850
840
830
820
810
800
790
780
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

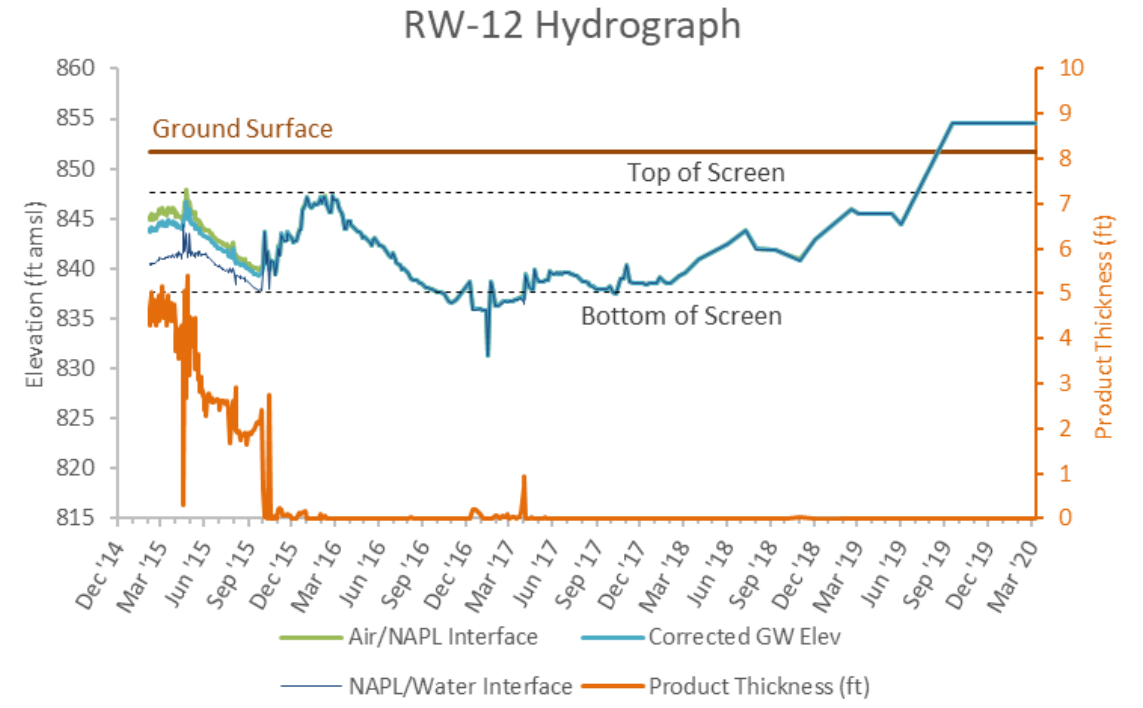

RW-07 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
850
840
830
820
810
800
790
780
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

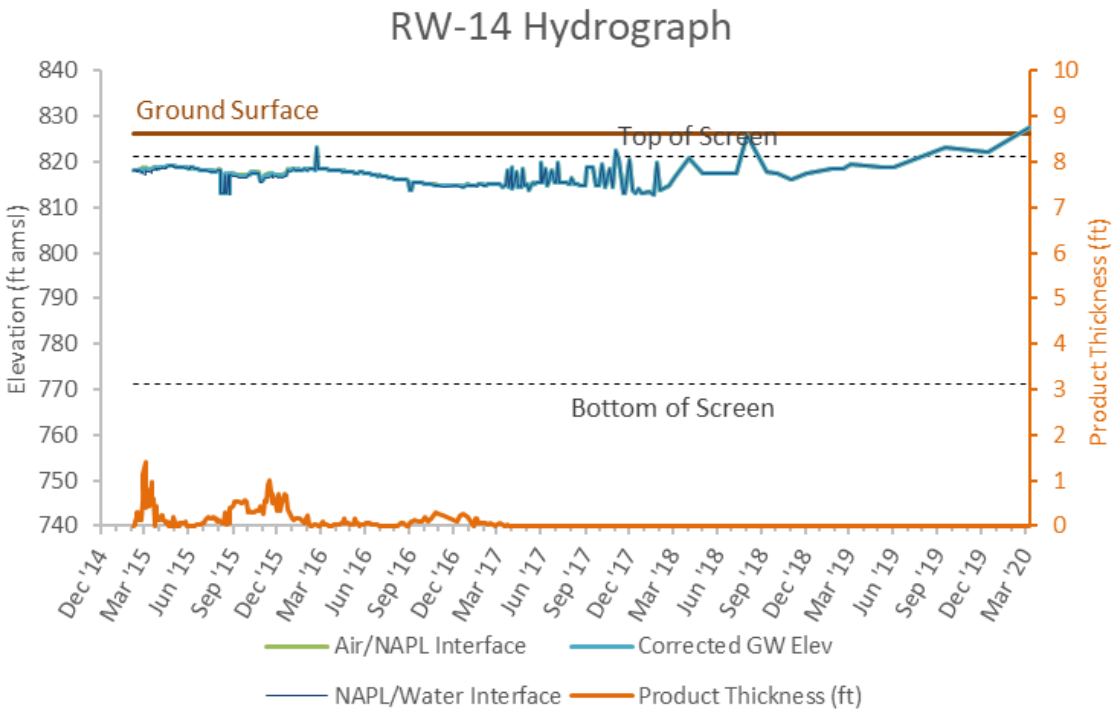

RW-08 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
840
830
820
810
800
790
780
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

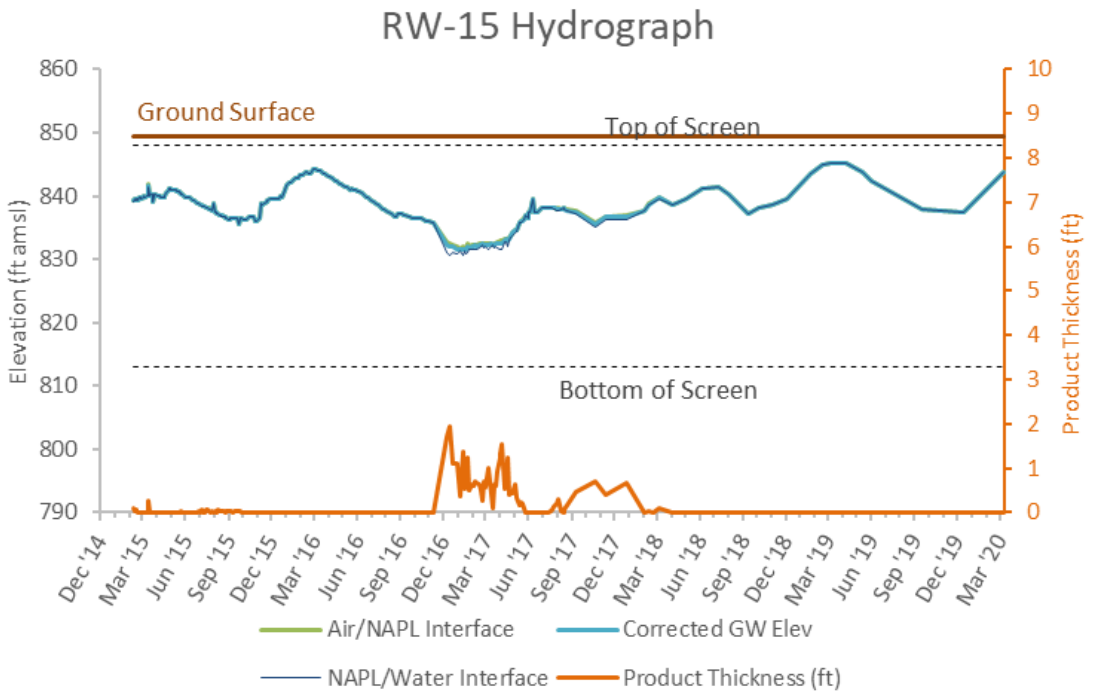

RW-09 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
840
830
820
810
800
790
780
770
760
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)


RW-10 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
860
840
820
800
780
760
740
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

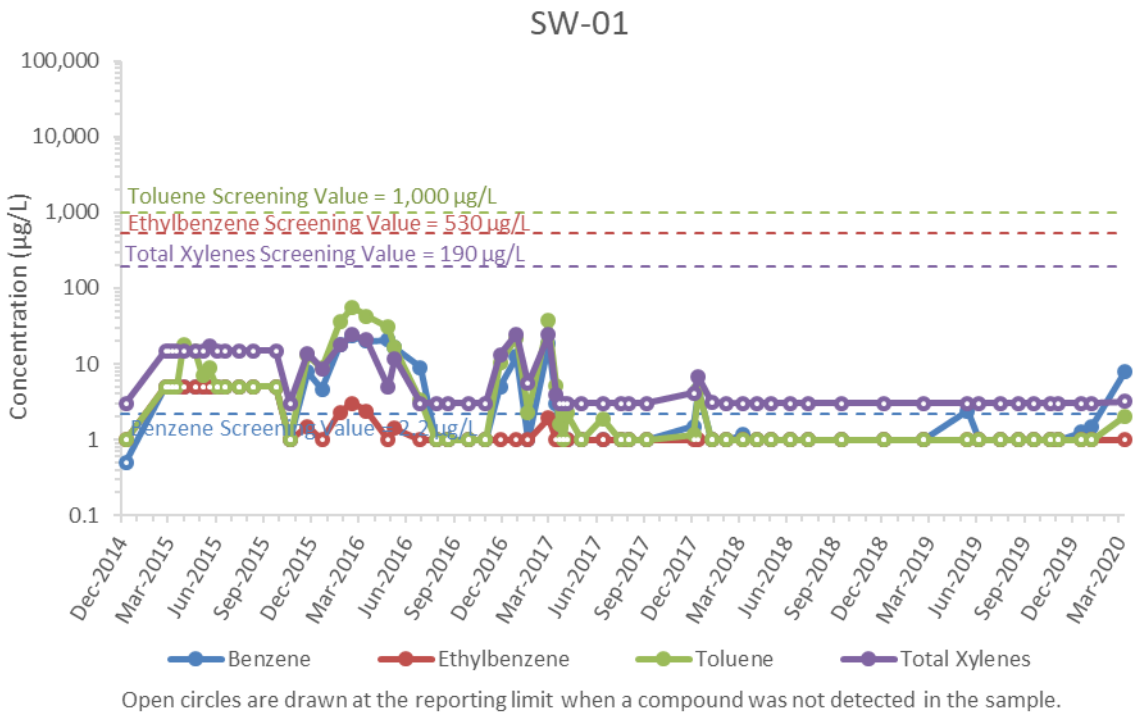

RW-11 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
855
850
845
840
835
830
825
820
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)


RW-12 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
860
855
850
845
840
835
830
825
820
815
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

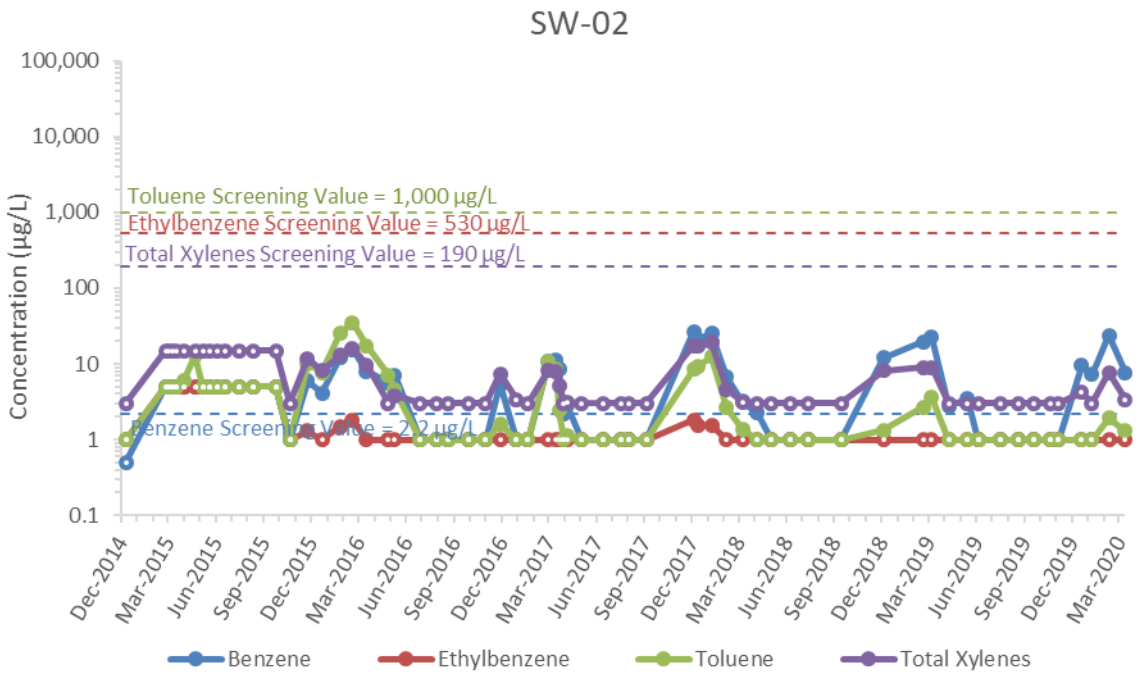

RW-14 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
840
830
820
810
800
790
780
770
760
750
740
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)


RW-15 Hydrograph
Ground Surface
Top of Screen
Bottom of Screen
Elevation (ft amsl)
Product Thickness (ft)
860
850
840
830
820
810
800
790
10
9
8
7
6
5
4
3
2
1
0
Dec '14
Mar '15
Jun '15
Sep '15
Dec '15
Mar '16
Jun '16
Sep '16
Dec '16
Mar '17
Jun '17
Sep '17
Dec '17
Mar '18
Jun '18
Sep '18
Dec '18
Mar '19
Jun '19
Sep '19
Dec '19
Mar '20
Air/NAPL Interface
Corrected GW Elev
NAPL/Water Interface
Product Thickness (ft)

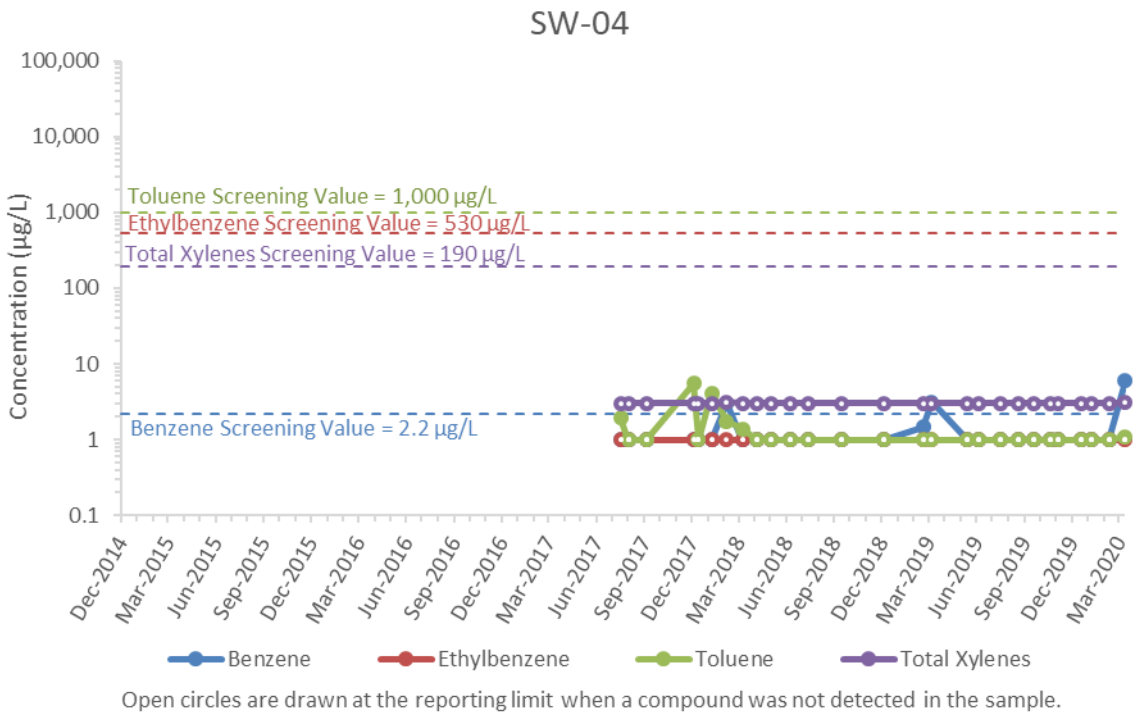
Appendix F
Surface Water Analytical Trends



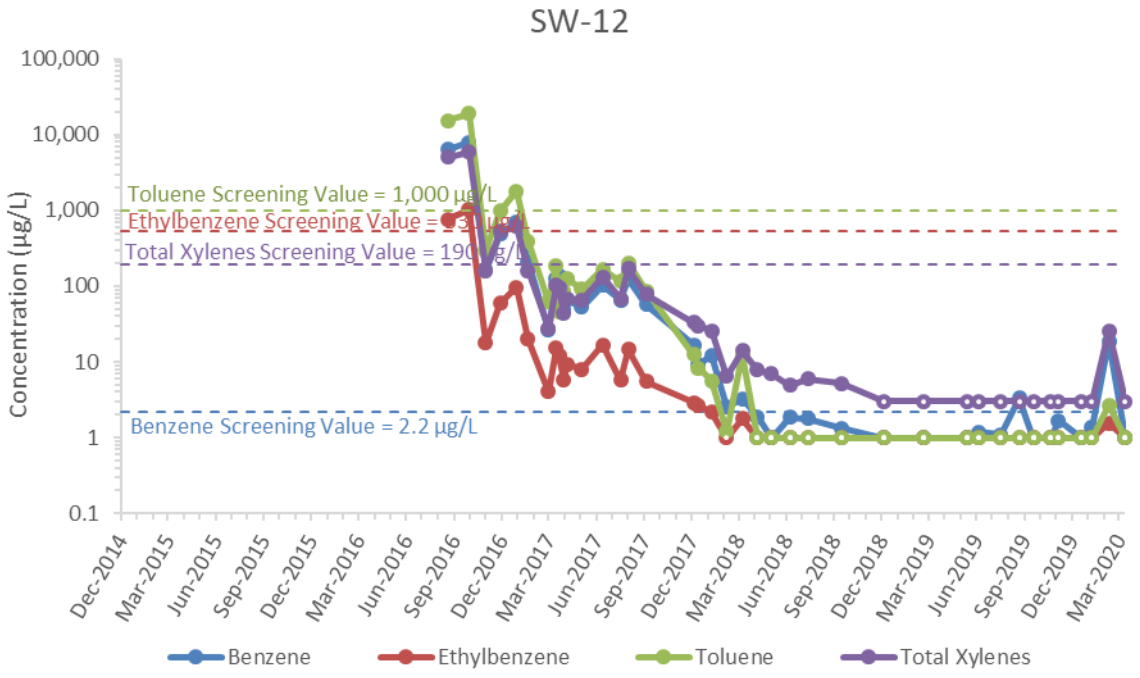
Open circles are drawn at the reporting limit when a compound was not detected in the sample.



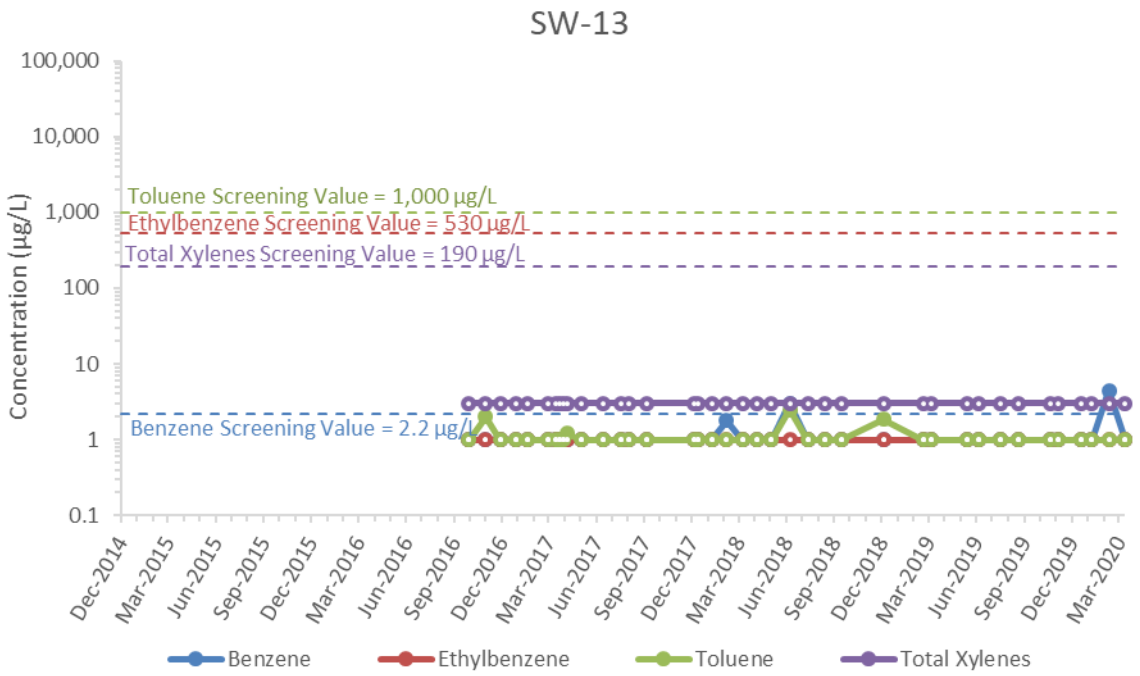
Open circles are drawn at the reporting limit when a compound was not detected in the sample.



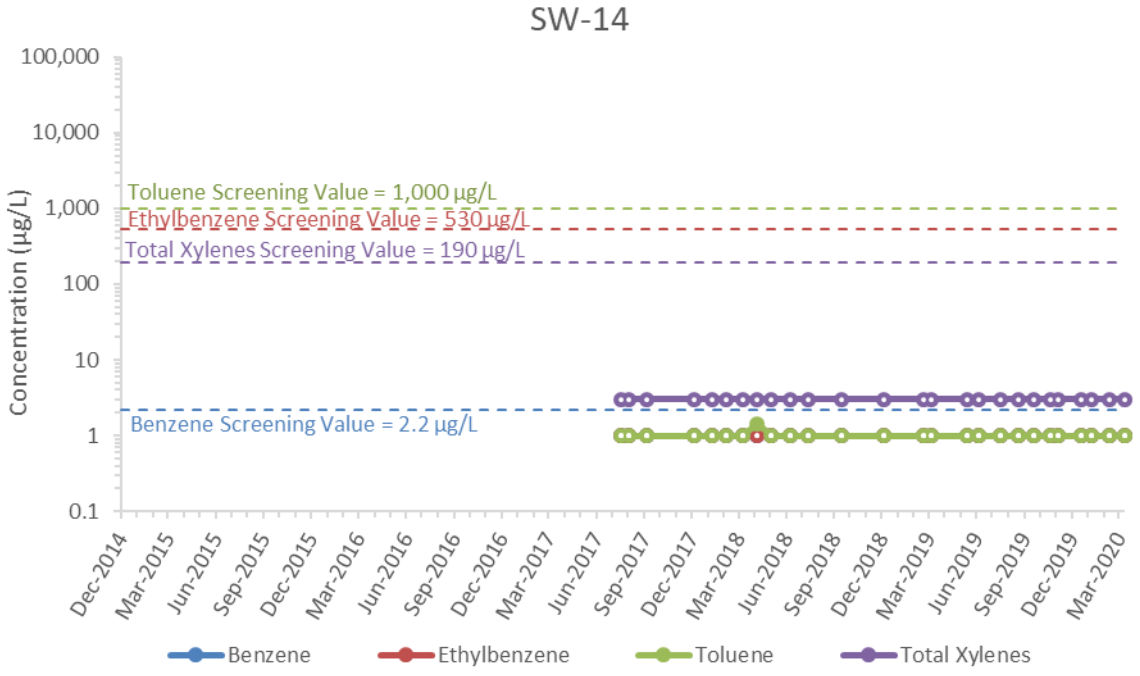
Open circles are drawn at the reporting limit when a compound was not detected in the sample.



Open circles are drawn at the reporting limit when a compound was not detected in the sample.



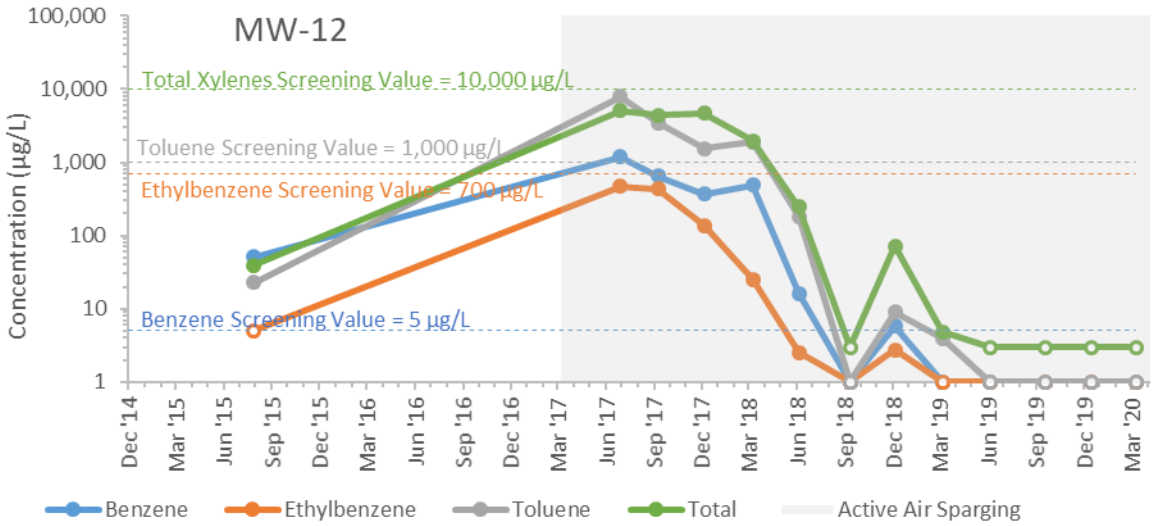
Open circles are drawn at the reporting limit when a compound was not detected in the sample.



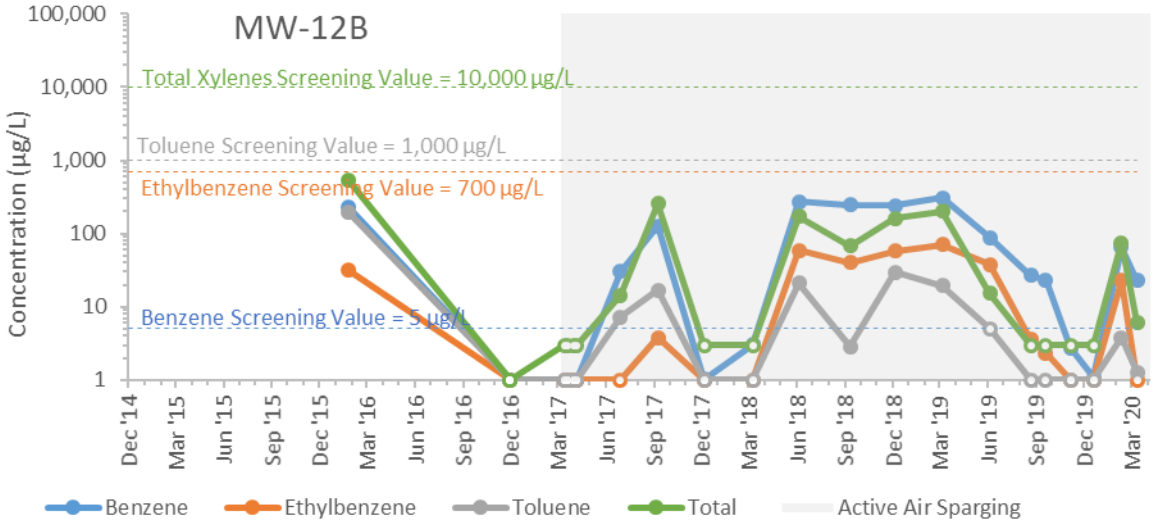
Open circles are drawn at the reporting limit when a compound was not detected in the sample.

Appendix G
Groundwater Analytical Trends

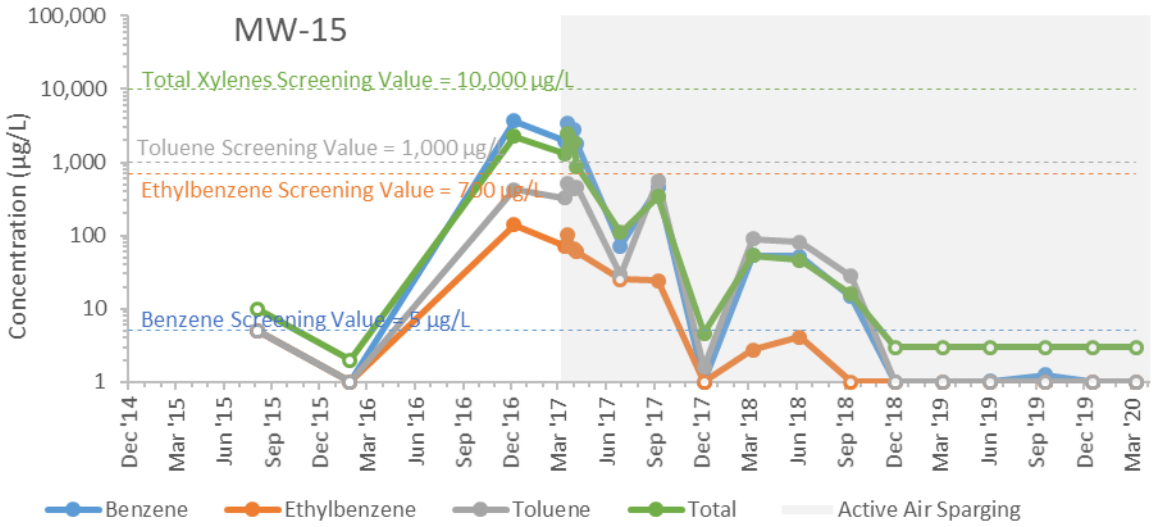
Browns Creek Monitoring Well Trends



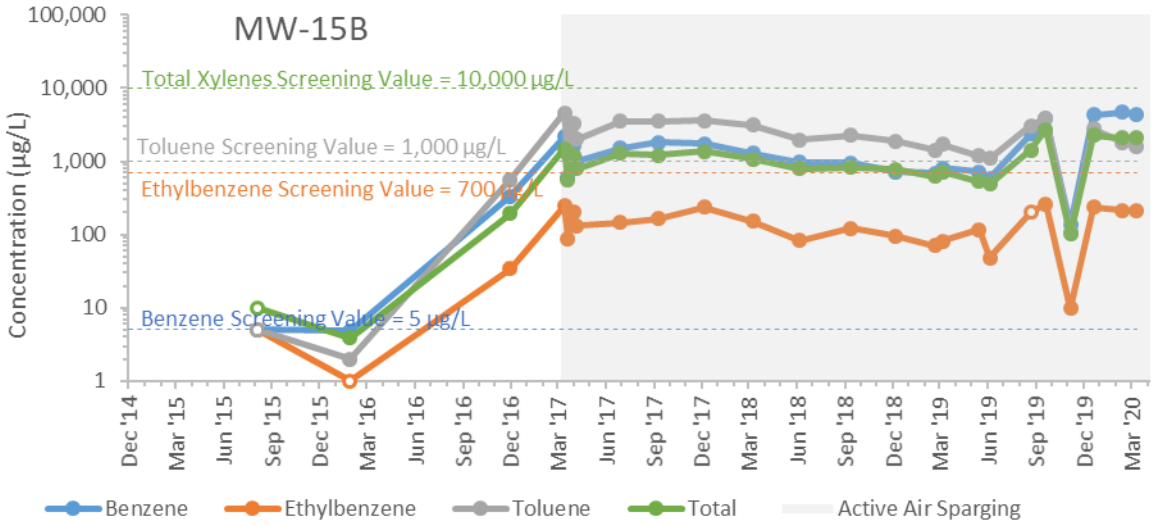
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



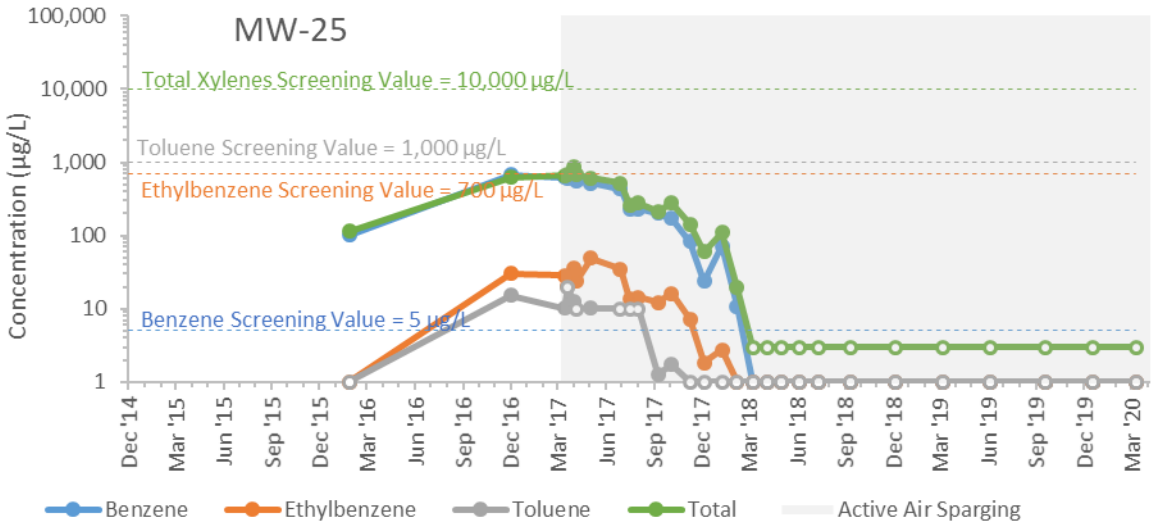
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



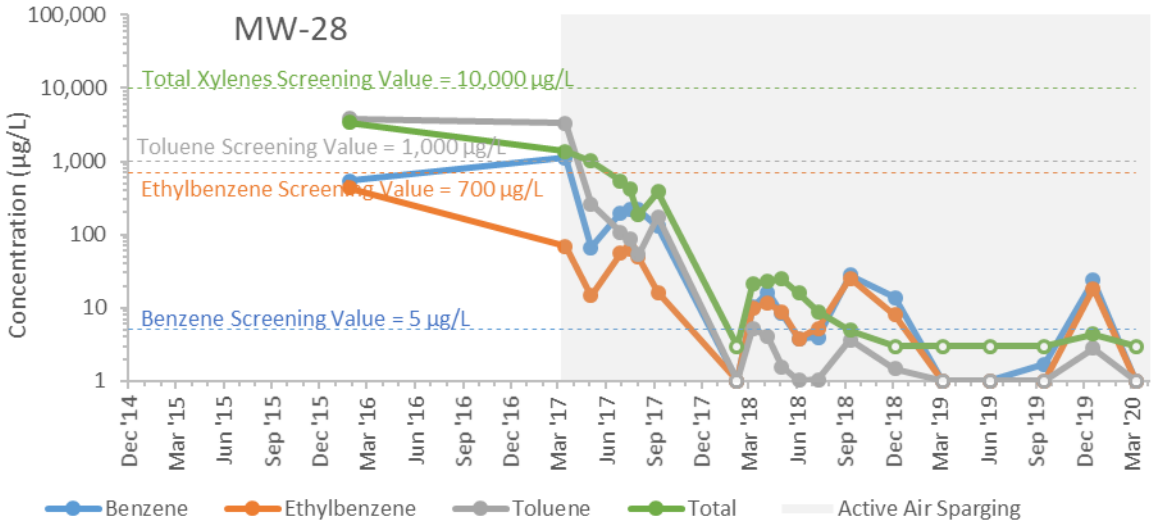
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



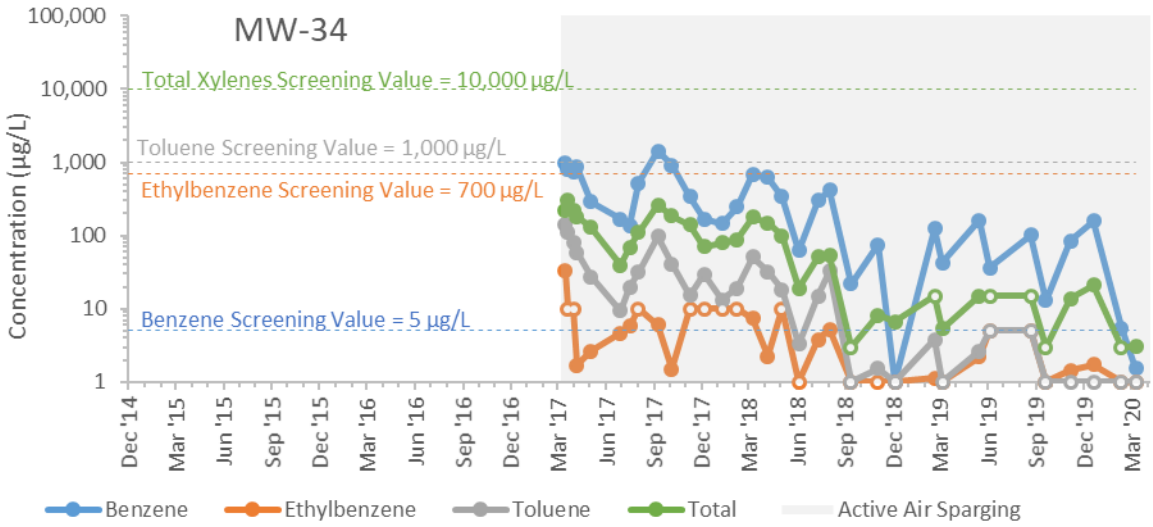
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



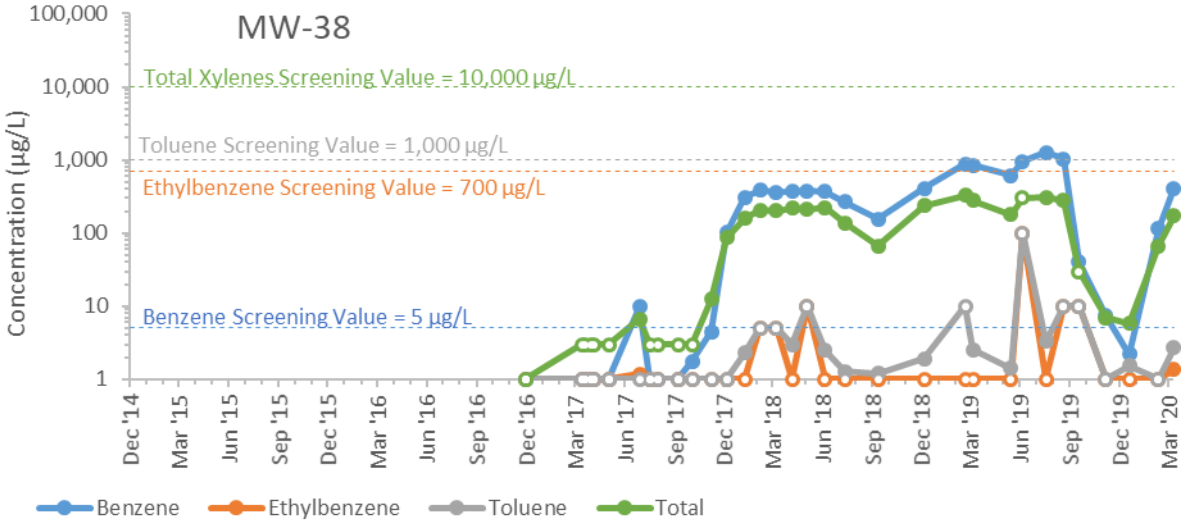
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



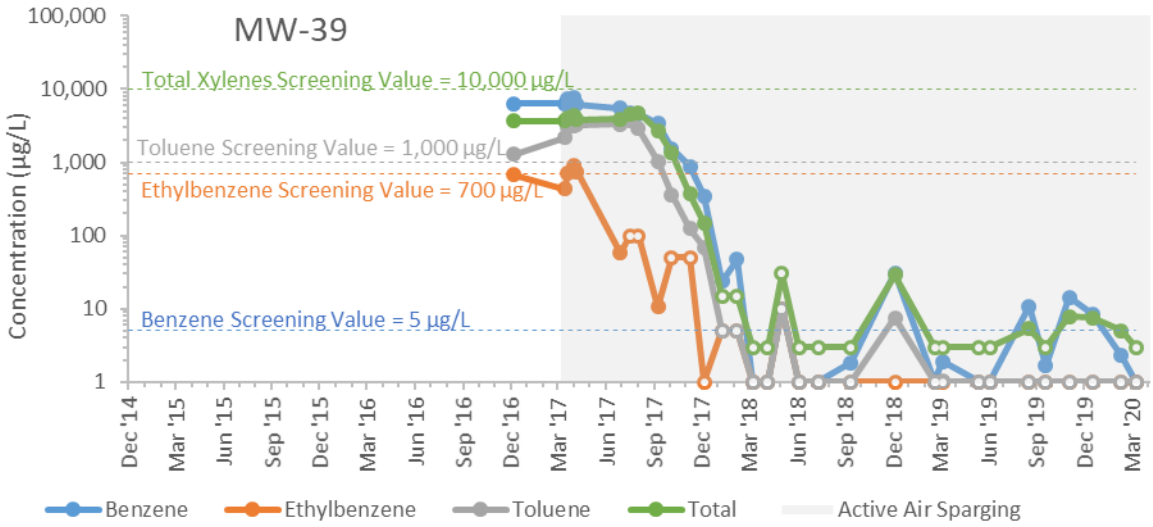
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



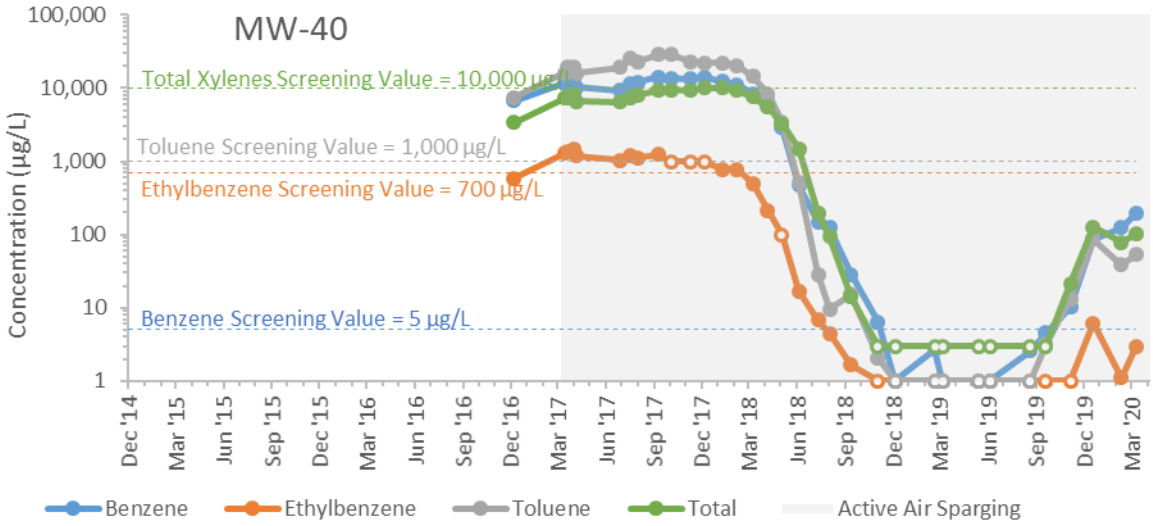
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.

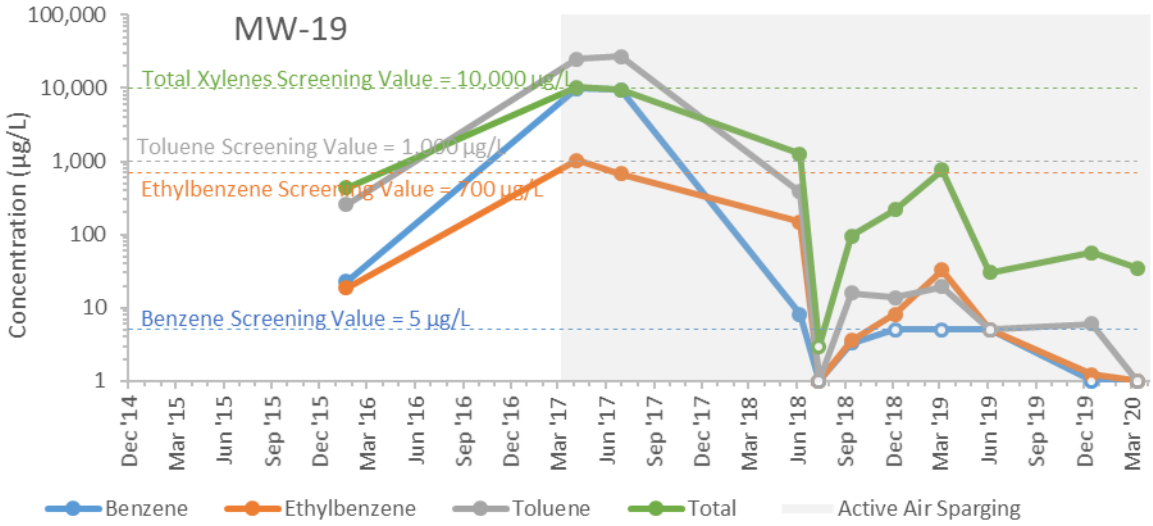


Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.

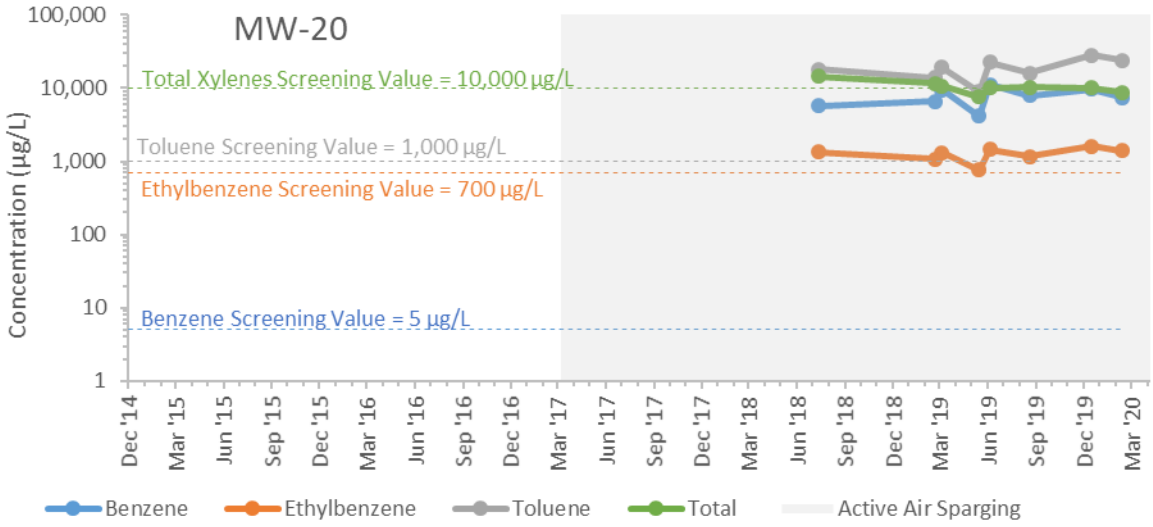


Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.

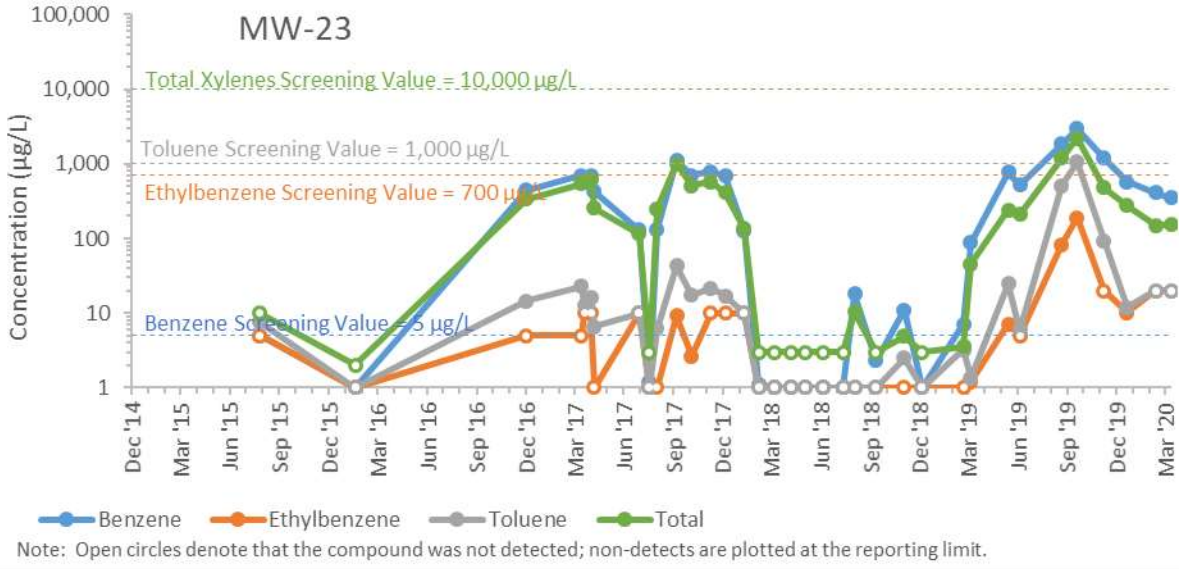
Cupboard Creek Monitoring Well Trends



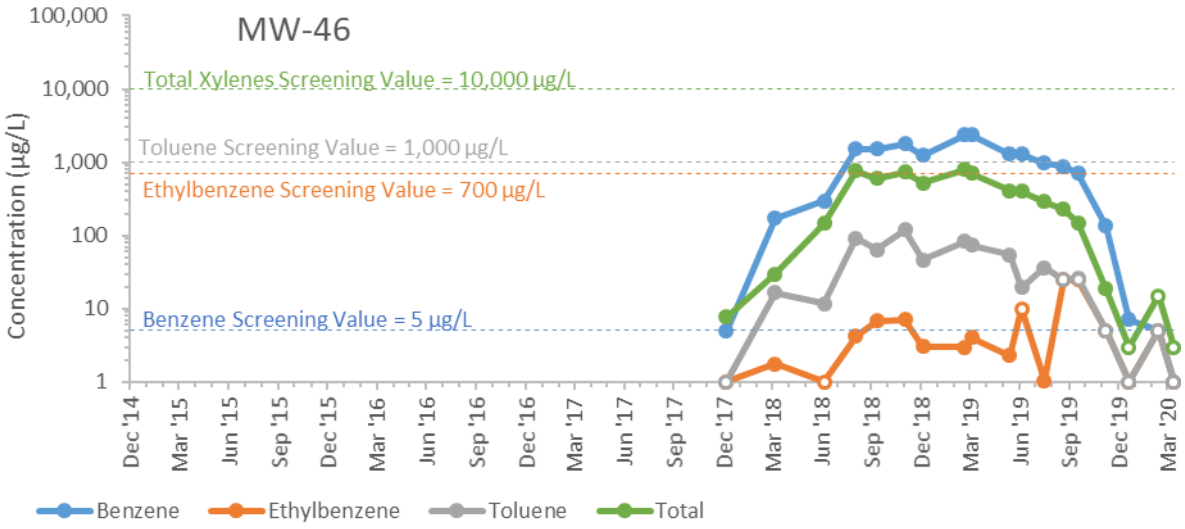
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



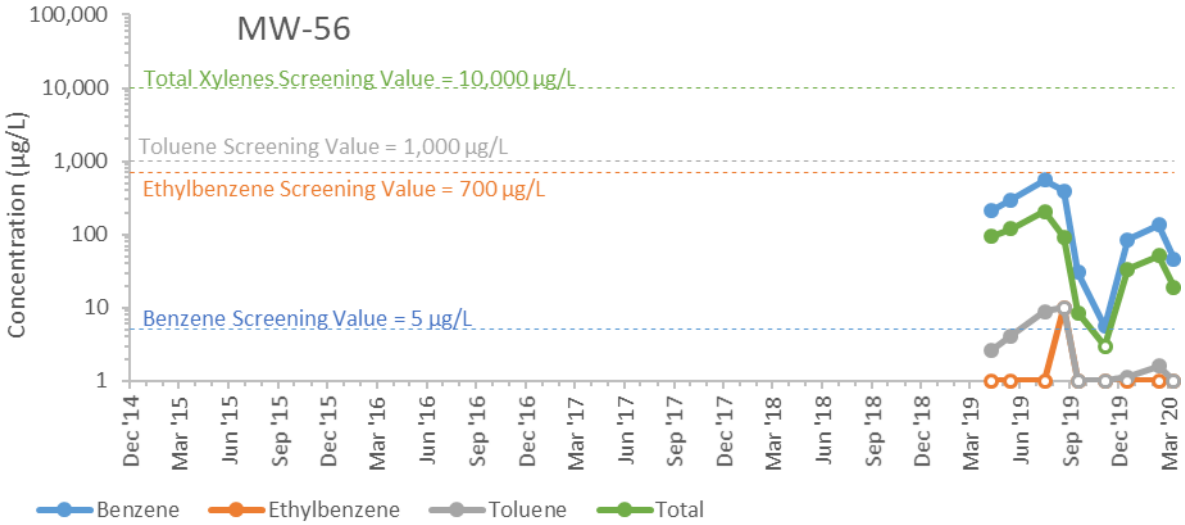
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



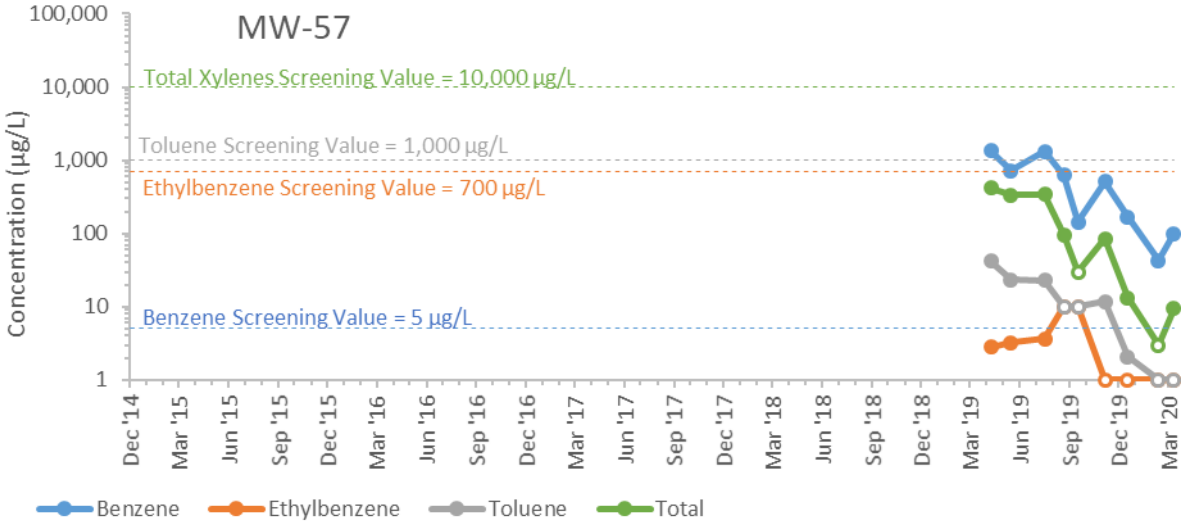
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.

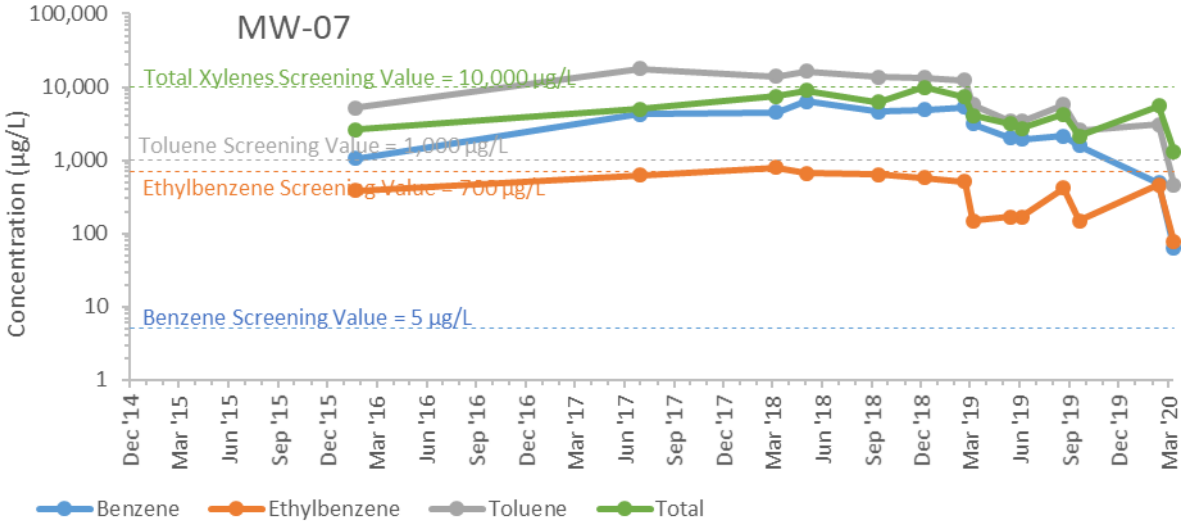


Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.

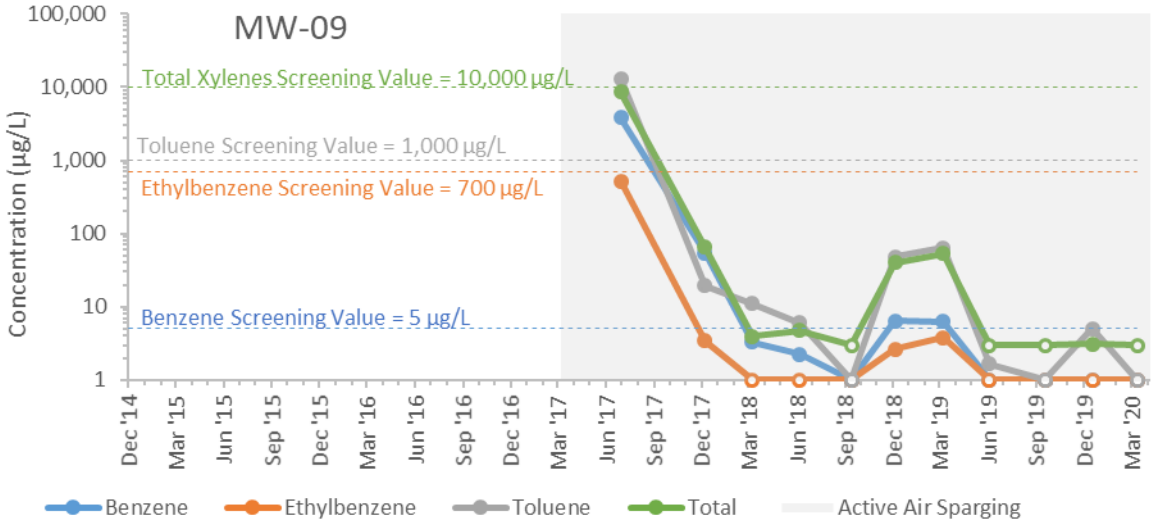


Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.

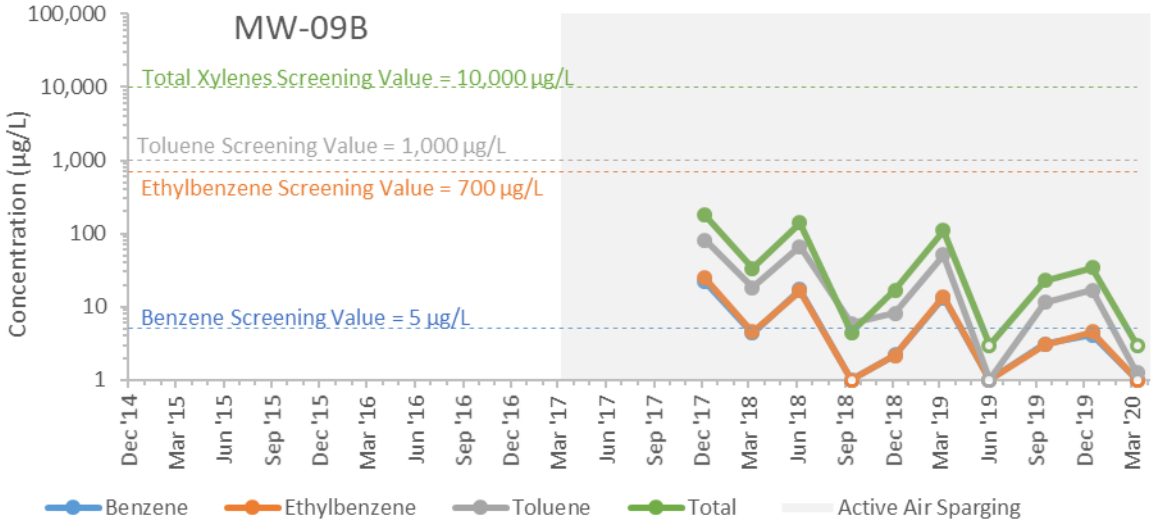
Hayfield Monitoring Well Trends



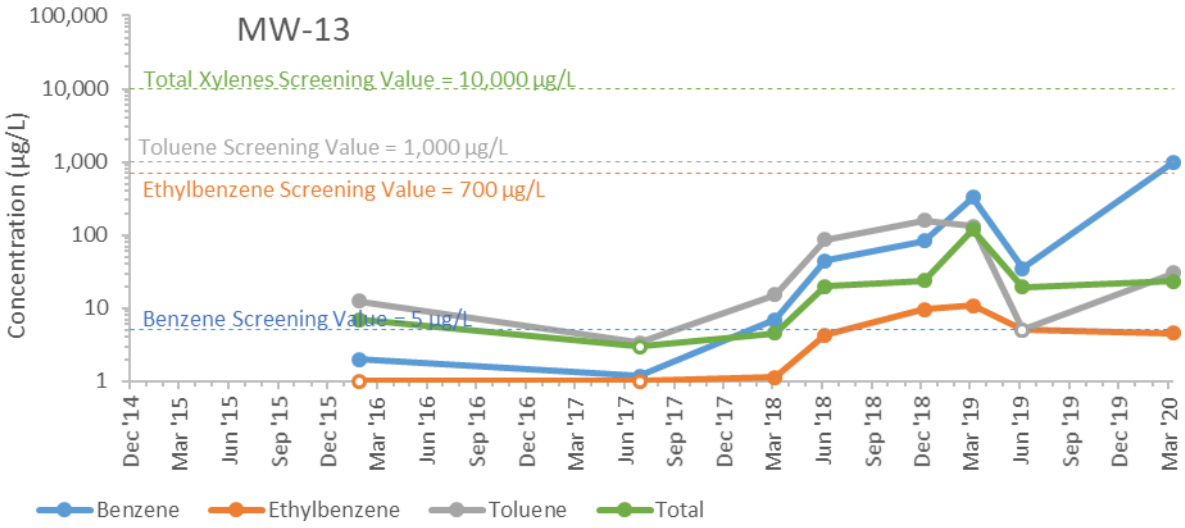
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



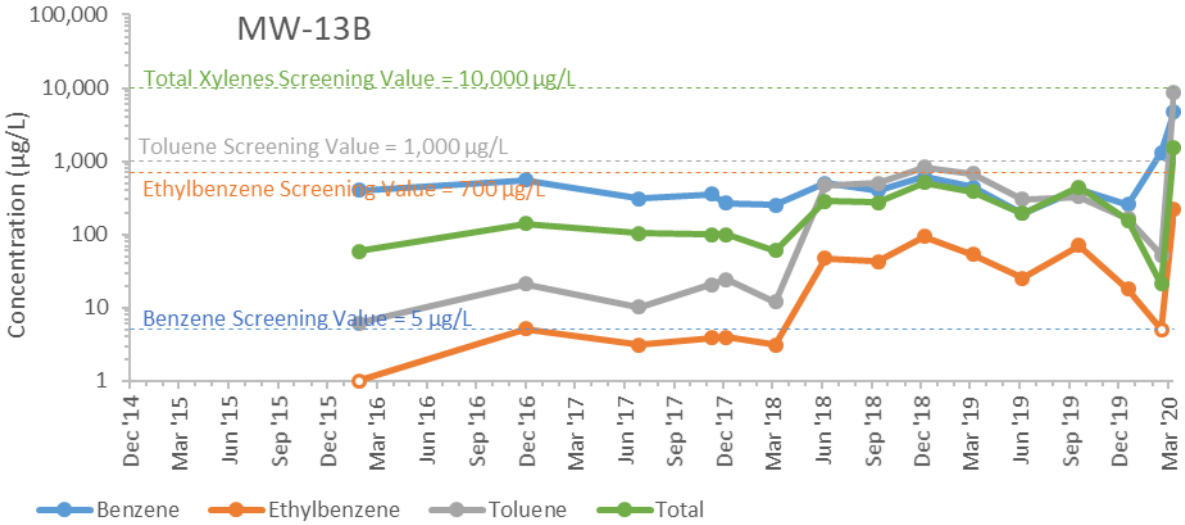
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



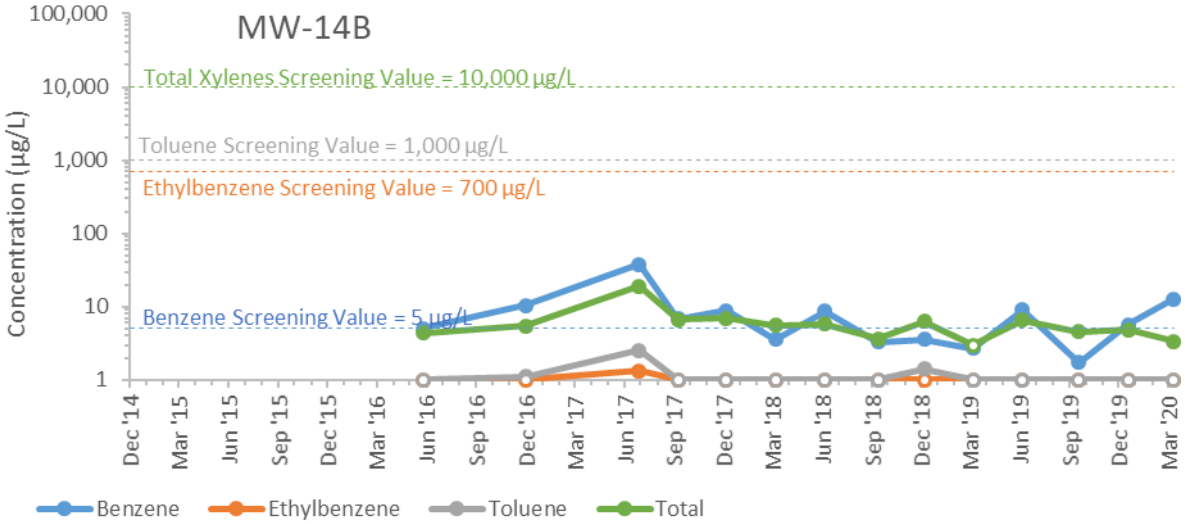
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



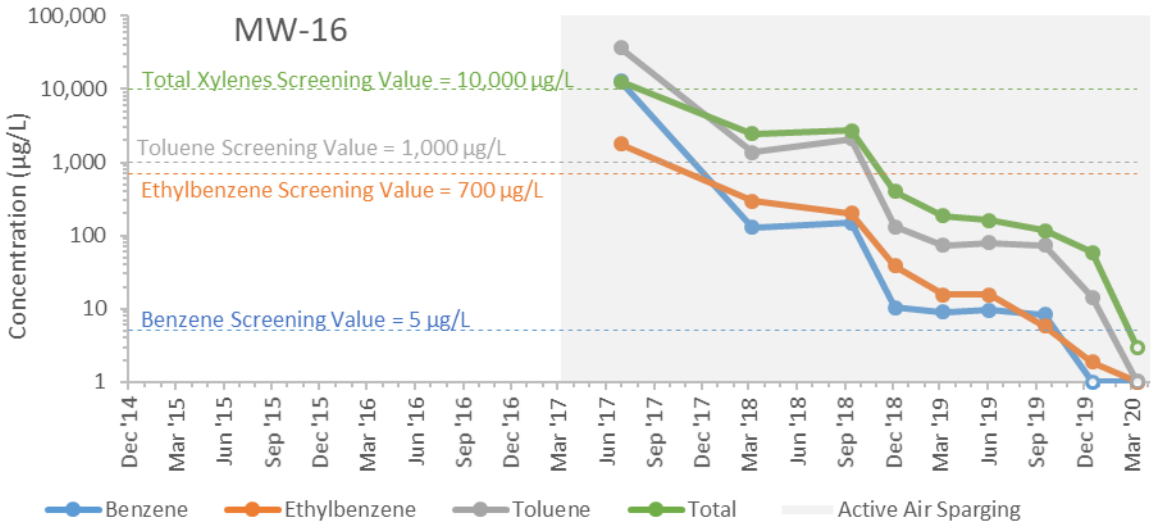
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



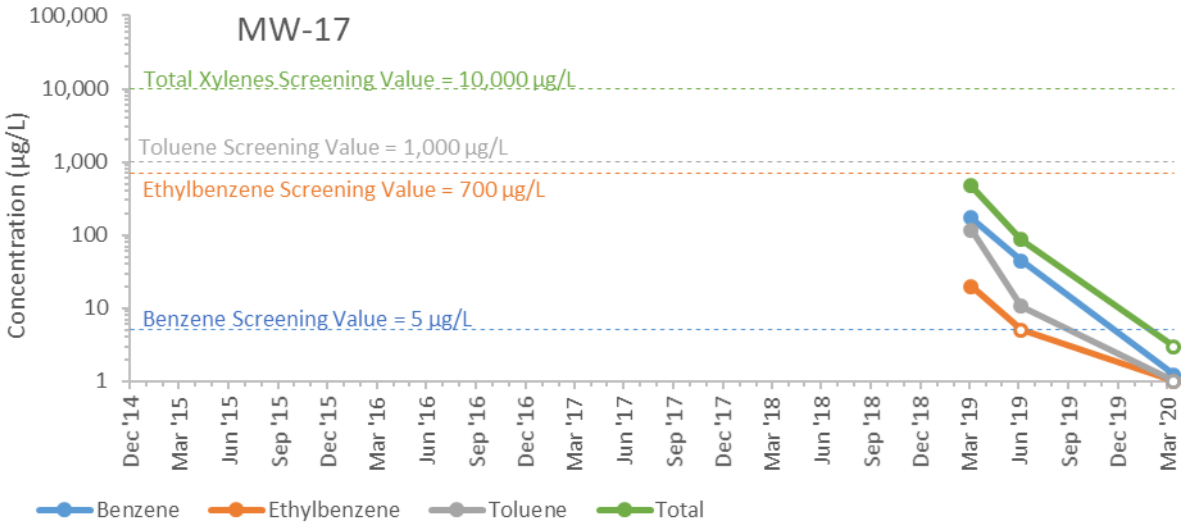
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



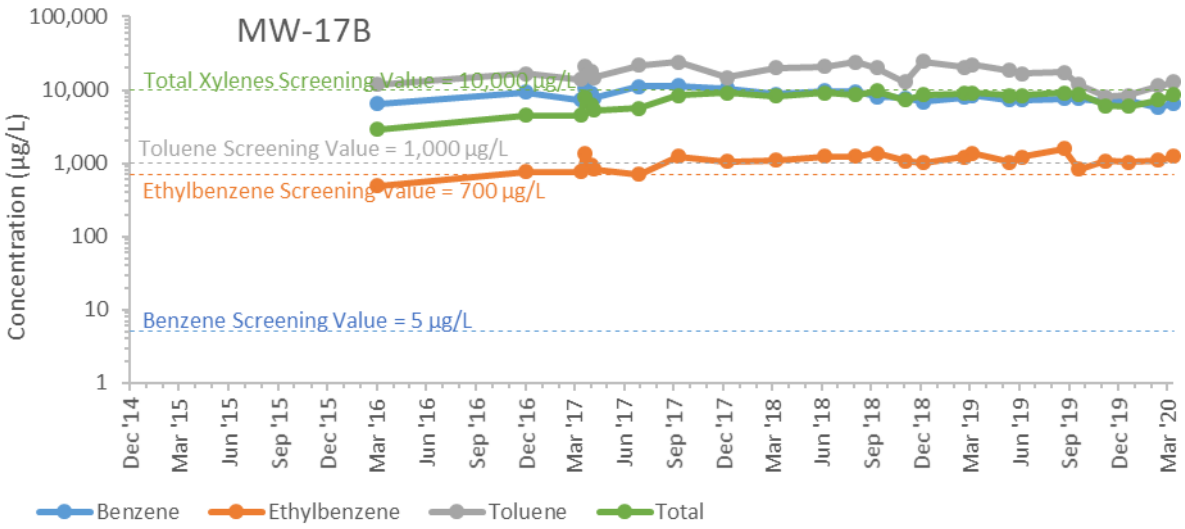
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



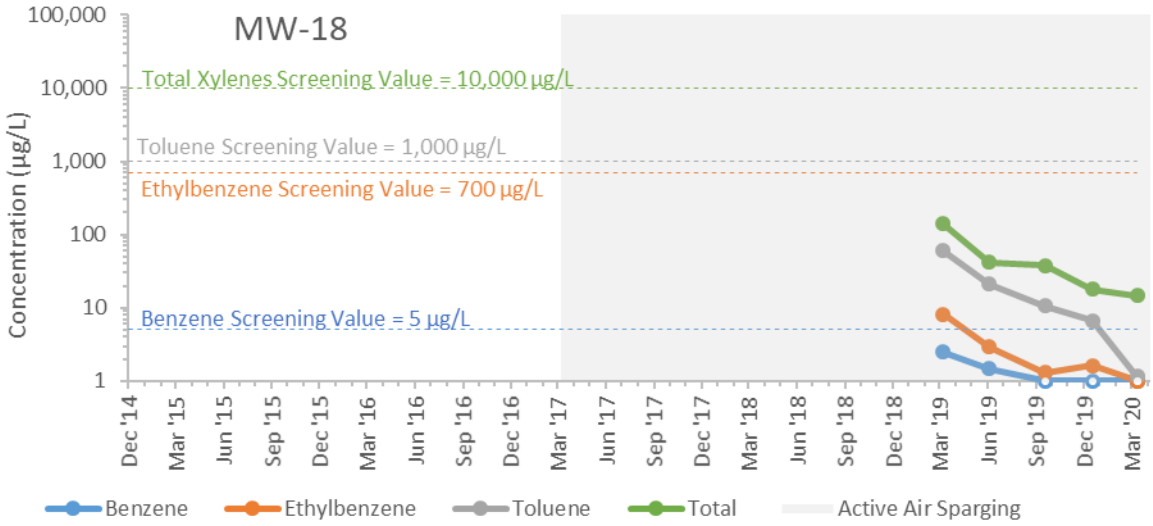
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



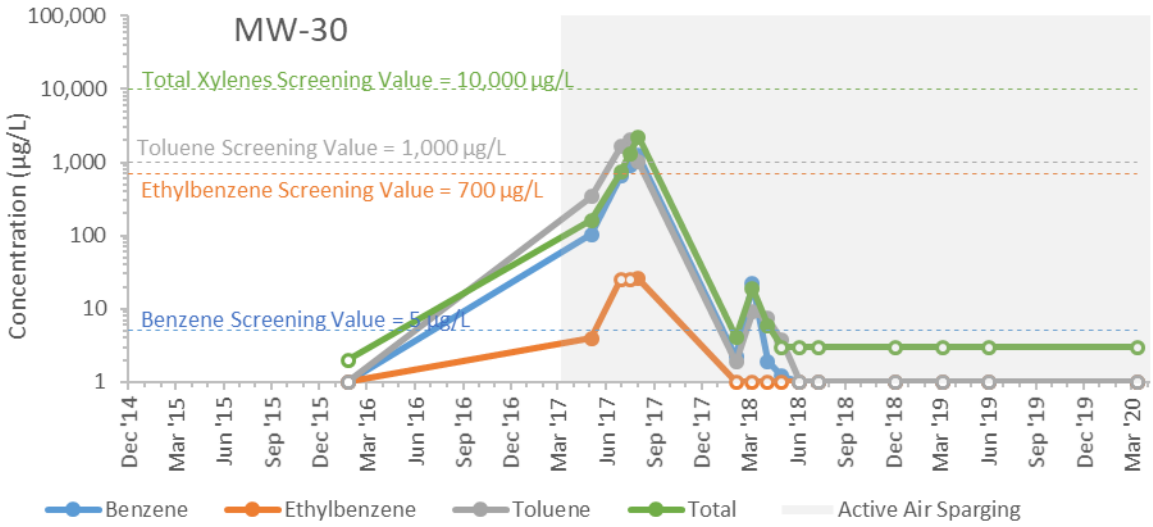
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



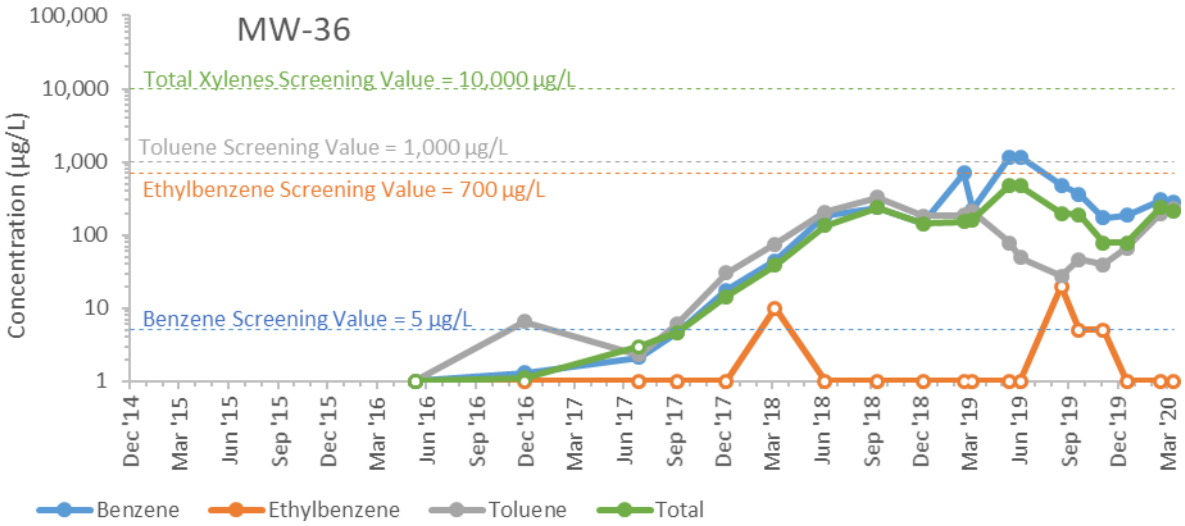
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



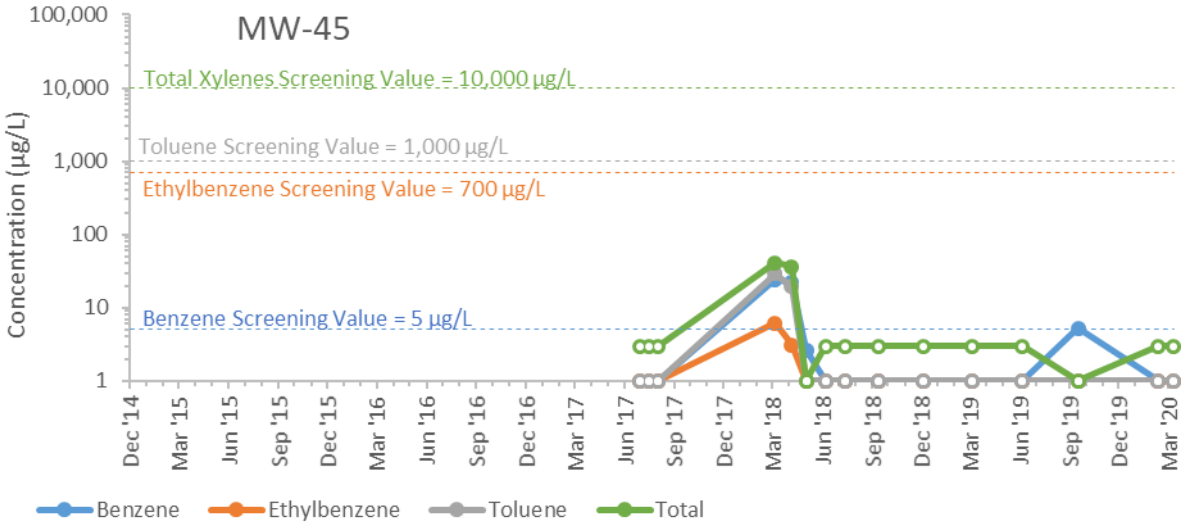
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



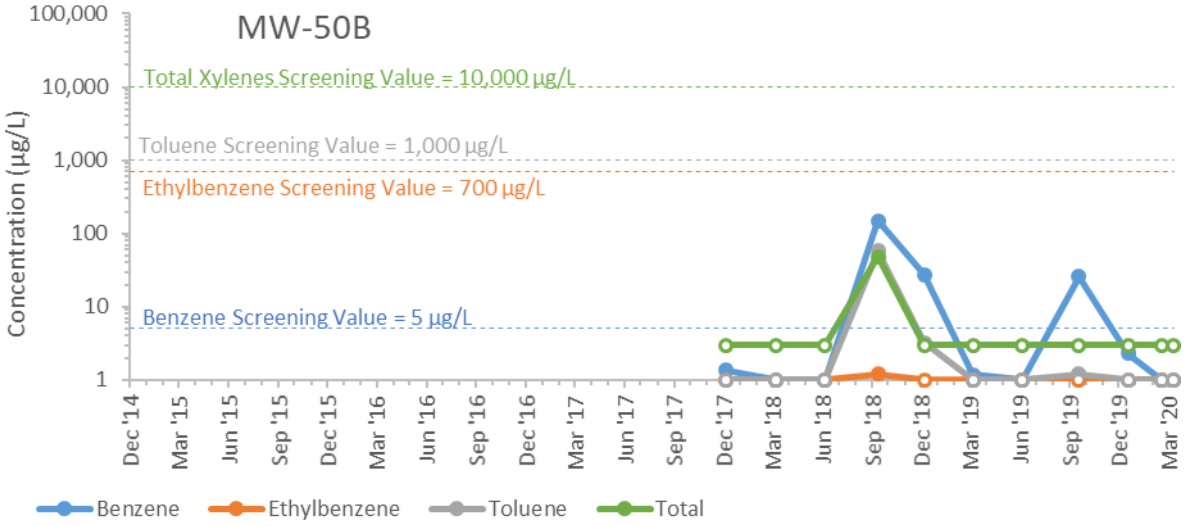
Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.

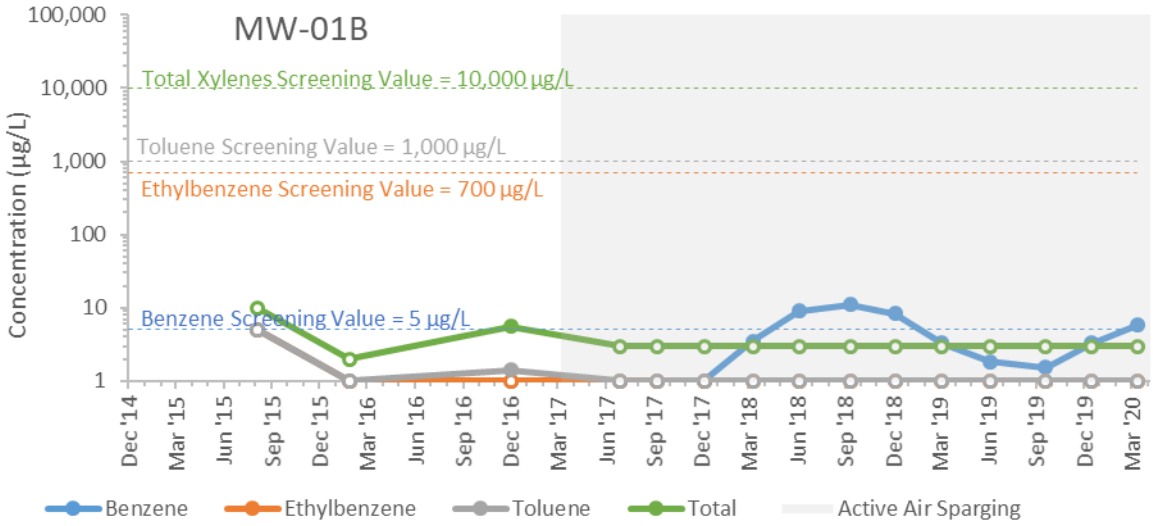


Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.

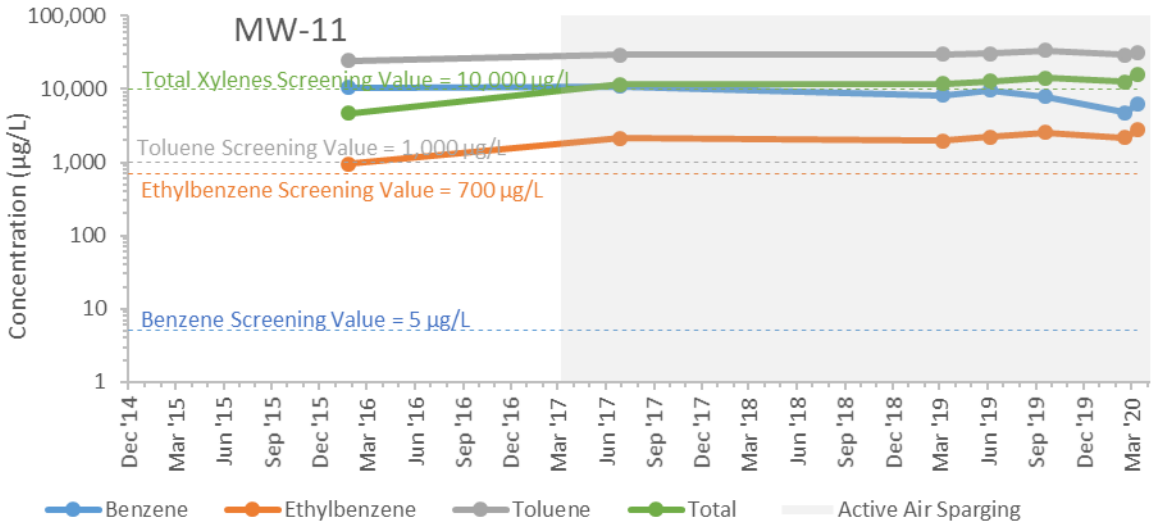


Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.

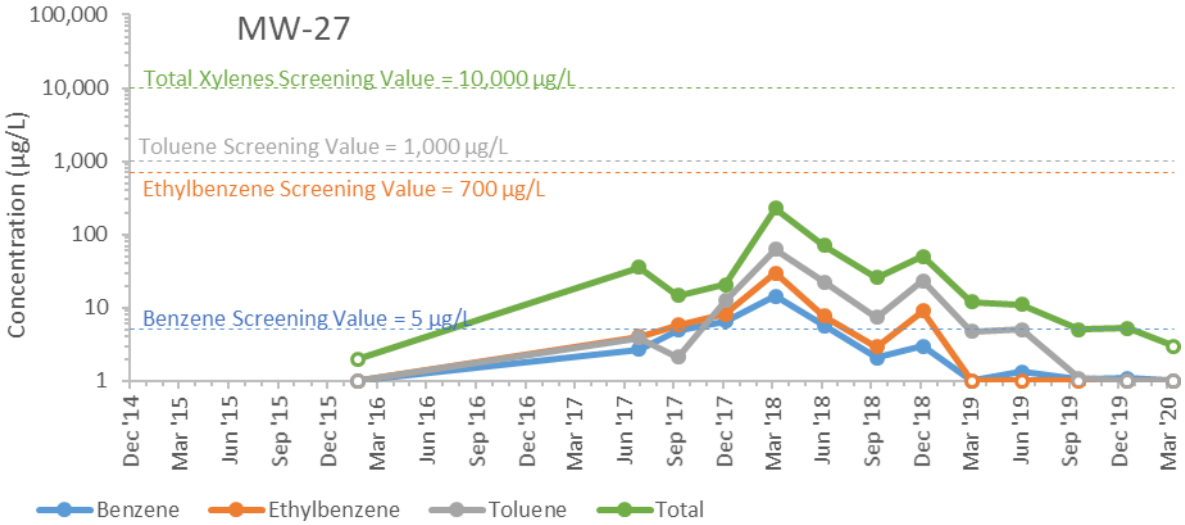
Shallow Bedrock Monitoring Well Trends



Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.



Note: Open circles denote that the compound was not detected; non-detects are plotted at the reporting limit.