Document Receipt Information

☒ **Hard Copy** ☒ **CD** ☐ **Email**

Date Received 6-28-18

Permit Number 18693

Project Manager Bobbi Coleman

Name of Contractor Jacobs Engineering

UST Certification Number _____

Docket Number 264 URP

Scanned _____

May 2018 Monthly Status Update

3120 Highwoods Boulevard
Suite 214
Raleigh, North Carolina 27604
United States
T +1. 919 875 4311
F +1. 919 875 8491
www.jacobs.com

June 27, 2018

Delivered via FedEx Overnight Delivery

Ms. Bobbi Coleman
South Carolina Department of Health and Environmental Control (SCDHEC)
Assessment Section, UST Management Division
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Subject: **Lewis Drive – May 2018 Monthly Status Update**
Plantation Pipe Line Company
Belton, South Carolina
Site ID #18693, "Kinder Morgan Belton Pipeline Release"

Dear Ms. Coleman,

On behalf of Plantation Pipe Line Company (Plantation), CH2M HILL Engineers, Inc. (CH2M is now a wholly owned subsidiary of Jacobs) is submitting the attached Monthly Status Update covering activities conducted in May 2018 at the Lewis Drive site. If you have any questions or concerns, please call me at 919.760.1777 or Mr. Jerry Aycock/Plantation at 770.751.4165.

Regards

CH2M HILL Engineers, Inc.

William M. Waldron, P.E.
Program Manager

Copies to: Jerry Aycock, Plantation (Digital, Jerry_Aycock@kindermorgan.com)
Mary Clair Lyons, Esq., Plantation (Digital, Mary_Lyons@kindermorgan.com)
Richard Morton, Esq., Womble Bond Dickinson, LLP (Digital, ric.morton@wbd-us.com)
File

Attachments:

Monthly Status Update including:

- Figure 1 – Groundwater and Surface Water Elevation and Product Thickness Map
- Table 1 – Field Observations
- Table 2 – Stream Gauge Construction Information
- Table 3 – Analytical Results for Surface Water
- Table 4 – Well Construction Information
- Table 5 – Groundwater Elevation and Product Thickness Data
- Table 6 – Product Skimmer Recovery Results
- Table 7 – Analytical Results for Groundwater
- Field Logbooks and Gauging Sheets
- Surface Water Analytical Laboratory Report
- Groundwater Analytical Laboratory Report

Monthly Status Update
Plantation Pipe Line Company
Lewis Drive Remediation
Site ID #18693 "Kinder Morgan Belton Pipeline Release"
May 2018

Surface Water

- Routinely inspected Brown's Creek and the wetland area south of West Calhoun Road adjacent to Cupboard Creek for hydrocarbon sheen, odor, or distressed vegetation. No new signs of distressed vegetation, hydrocarbon sheen, or odor were noted at Brown's Creek or the wetland area south of West Calhoun Road adjacent to Cupboard Creek. The route of inspection is indicated on Figure 1. A summary of the field observations is provided in Table 1.
- Stream elevations from staff gauges are tabulated in Table 2 and are shown along with groundwater elevations on Figure 1.
- To date, 48 surface water sampling events have been performed and samples during each event were analyzed for benzene, ethylbenzene, toluene, xylenes, and naphthalene (see Table 3). Starting in February 2018 (event 46), methyl tertiary butyl ether (MTBE) was added to the analyte list for the surface water samples.
- During this reporting period, surface water samples were collected on May 3, 2018. Sixteen surface water samples were collected at locations SW-01, SW-02, SW-03, SW-04, SW-05, SW-07, SW-08, SW-09, SW-10, SW-11, SW-12, SW-13, SW-14, FP-01, FP-02, and FP-03 (location SW-06 in Cupboard Creek was dry). Field documents can be found in Attachment A.
    - ***No dissolved hydrocarbons were detected above their respective surface water standards in the surface water samples.*** Analytical lab report is attached.

Product Recovery

- Gauged depth to product and depth to water in recovery sumps/trenches/wells, piezometers, monitoring wells, and stream gauges. Two locations exhibited measurable product thicknesses of 0.5 foot or greater during the sitewide May gauging event: 0.5 feet at RS-05 and 2.04 feet at MW-18. All locations showing measurable product thickness are more than 150 feet away from surface water bodies at the site and have limited influence from the air sparging remediation system. Construction information for recovery and non-recovery features is presented in Table 4. Groundwater elevation and product thickness data for May 2018 are presented in Table 5. Groundwater elevation and product thicknesses for May 2018 are presented on Figure 1.
- The locations with the product skimming canisters (skimmers) and petroleum absorbent socks (socks) and the amount of product recovered from each of these locations are listed in Table 6. In May, 0.171 gallons were recovered at the site. Since February 13, 2018, 7.21 gallons of product have been recovered using the skimmers and socks. Of this quantity, 3.91 gallons (55% of the total) were recovered from recovery sump RS-05.
- Through the end of May 2018, approximately 222,981 gallons (5,309 barrels) of product have been collected.

Groundwater

- Operated and recorded data from six continuous water level data loggers (In Situ Rugged Troll 100) in MW-02, MW-12, MW-25, MW-29, MW-39, and MW-40, and two barometric pressure loggers in MW-01 and MW-10 during the month.
- Collected monthly groundwater samples in accordance with the Corrective Action Plan and Addendum. The analytical lab reports are attached and results are summarized in Table 7.
    - During this month, groundwater samples were collected on May 3, 2018, from 21 of the 22 scheduled monitoring wells. Monitoring well MW-20 was not sampled because of the presence of product. Samples were analyzed for benzene, ethylbenzene, toluene, total xylenes, 1,2-dichloroethane, MTBE, and naphthalene.
    - The following constituents were detected above their respective groundwater standards:
        - Benzene – in samples from six monitoring wells ranging from 8.25 to 6,330 µg/L.
        - Toluene – in samples from two monitoring wells ranging from 3,490 to 16,500 µg/L.

- 1,2-dichloroethane – five monitoring wells have a laboratory reporting/quantitation limit greater than the screening level so it cannot be determined if the analyte was absent or present.
- MTBE – in samples from four monitoring wells ranging from 62.1 to 288 µg/L and one monitoring well has a laboratory reporting/quantitation limit greater than the screening level so it cannot be determined if the analyte was absent or present.
- Naphthalene –five monitoring wells have a laboratory reporting/quantitation limit greater than the screening level so it cannot be determined if the analyte was absent or present.
- Apart from these locations, no dissolved hydrocarbons were detected above their respective groundwater standards in the remaining groundwater samples.

Remedial System Operation

- Continued sparging via vertical well curtains in the Brown's Creek Protection Zone and Cupboard Creek Protection Zone, and sparging via horizontal wells in the Hayfield Zone.
- The air sparging system was down for a total of 22 hours in May due to electrical storms the nights of May 10 and May 30, 2018. This resulted in an operational uptime of 97% during May 2018.
- Flows in the vertical sparging wells were maintained at 8-10 standard cubic feet per minute (scfm). Flows in the 3 horizontal wells in the Hayfield Zone were maintained at approximately 0.70 scfm per foot of screen. Flows in the 2 stream aerators in Brown's Creek were maintained at approximately 15 scfm each in May 2018.

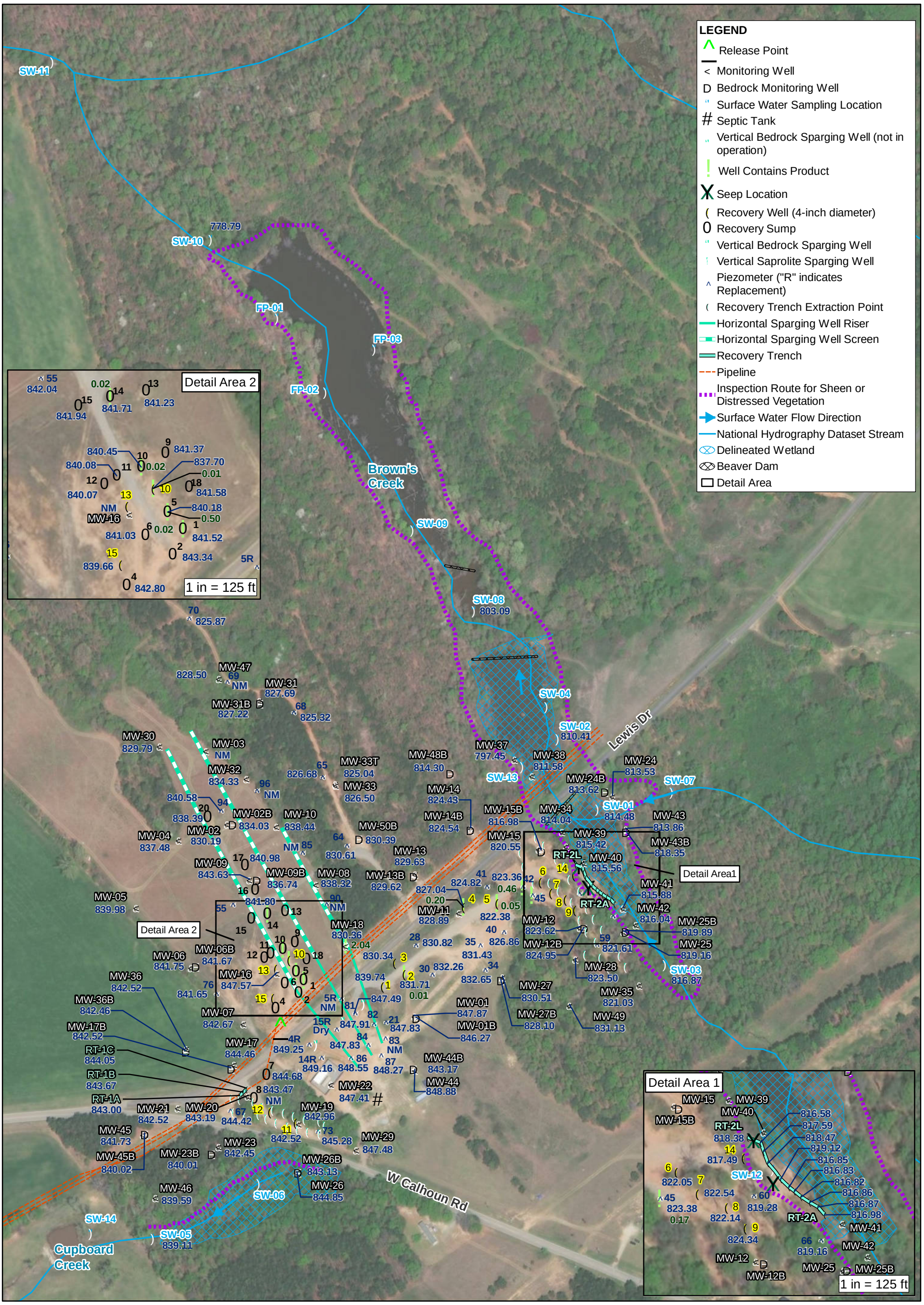
Regulatory Interaction

- Submitted *Request of UIC Permit Revision for Expansion of Biosparging Remediation System* to SCDHEC on May 4, 2018.
- Submitted *Request for Well Permit to Install Additional Vertical Sparging Wells for Biosparging System Expansion* to SCDHEC on May 4, 2018.
- Received letter from SCDHEC on May 8, 2018: *Reviews of Misc. Reports, Response to Comments Document, Free Product Recovery Plan, Product Recovery Skimmer Results and Request for Well Permit*.
- Submitted *Monthly Status Update for April 2018* to SCDHEC on May 29, 2018.
- Conducted internal stormwater pollution prevention plan (SWPPP) inspection on May 10, 2018.

Future Activities

- Submit an annual report covering the period from April 1, 2017 to March 31, 2018. This report will include a proposal to modify the current monitoring and reporting frequency.
- In accordance with the *Sparging Operating Limits* letter to SCDHEC dated July 26, 2017:
    - Maintain/increase flow in the stream aerators to up to a maximum of 15 scfm each.
    - Increase flow in the vertical sparging wells up to a maximum of 15 scfm each.
    - Increase flow in the horizontal sparging wells up to a maximum of 0.75 scfm per foot of screen.
- Expand the Brown's Creek air sparging network southwest toward MW-11 and expand the Cupboard Creek air sparging network northwest beyond MW-17.
- Recover product monthly using skimmers and socks from select product recovery sumps, trenches, and wells. Collect liquids in two on-site 1,550-gallon poly tanks for eventual off-site disposal.
- Relocate product skimmer from RW-08 to RW-10. No product has been recovered from RW-08 in the 3 months since it was installed, and no product thickness has been gauged in RW-08 since 0.01 foot in January 2018. A sheen of 0.01 foot was gauged in RW-10 on May 2, 2018.
- Remove skimmers/socks from monitoring wells MW-08, MW-11, MW-15, and MW-20 in accordance with SCDHEC's request in their letter date-stamped May 8, 2018.
- Gauge recovery sumps/trenches/wells, piezometers, monitoring wells, and stream gauges monthly for depth to groundwater and free product thickness.
- Conduct groundwater monitoring and reporting monthly.
- Continue routine visual inspections of Brown's Creek and Cupboard Creek.
- Conduct monthly surface water sampling at 17 established locations along Brown's Creek and Cupboard Creek in June 2018.
- Install additional monitoring wells to expand the monitoring network north and west of MW-30 and upgradient of MW-38.

- Abandon 1-inch diameter wells (piezometers) because the existing 2-inch monitoring well network is now sufficient for groundwater elevation and product thickness measurements. The piezometers are now redundant and cannot be used for product removal.
- Continue coordination with landowners and legal counsel on an as-needed basis.



821.70 Corrected Groundwater Elevation as of 5/2/2018 in feet above mean sea level

0.60 Product Thickness in feet as of 5/2/2018

Base Map Sources:
*ESRI World Imagery Layer, 2017
*United States Geological Survey (USGS) National Hydrography Dataset (NHD)

Figure 1. Groundwater and Surface Water Elevation and Product Thickness Map
Lewis Drive Remediation Site
Belton, South Carolina
Site ID #18693 "Kinder Morgan Belton Pipeline Release"