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Lewis
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June 2018 Monthly
Status Update



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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 – June 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 June 2018 at the Lewis Drive site. This will be the last monthly status update submitted. Going forward quarterly reports will be submitted per the Corrective Action Plan and Addendums. 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

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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
- Attachment A – Field Logbooks, Gauging Sheets, and Purge Logs
- Attachment B – Surface Water Analytical Laboratory Report
- Attachment C – Groundwater Analytical Laboratory Reports

Monthly Status Update
Plantation Pipe Line Company
Lewis Drive Remediation
Site ID #18693 “Kinder Morgan Belton Pipeline Release”
June 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, 49 surface water sampling events have been conducted and samples during each event were analyzed for benzene, ethylbenzene, toluene, xylenes, and naphthalene (see Table 3). Starting in February 2018 (event 45), methyl tertiarybutyl ether (MTBE) was added to the analyte list for the surface water samples.
- During this reporting period, surface water samples were collected on June 7, 2018. Fifteen surface water samples were collected, at locations SW-01, SW-02, SW-03, SW-04, SW-07, SW-08, SW-09, SW-10, SW-11, SW-12, SW-13, SW-14, FP-01, FP-02, and FP-03 (locations SW-05 and SW-06 in Cupboard Creek were dry). Field documents can be found in Attachment A.
 - Benzene was detected at 2.99 µg/L (screening level = 2.2 µg/L) at SW-13.
 - Apart from this location, no dissolved hydrocarbons were detected above their respective surface water screening levels in the remaining 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. One location exhibited measurable product thickness of 0.5 foot or greater during the site wide June gauging event: 0.65 feet at TW-42. 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 sparging remediation system. Construction information for recovery and non-recovery features is presented in Table 4. Groundwater elevation and product thickness data for June 2018 are presented in Table 5. Groundwater elevation and product thicknesses for June 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 June, 1.5 gallons were recovered at the site. Since February 13, 2018, 8.7 gallons of product have been recovered using the skimmers and socks. Of this quantity, 3.9 gallons (45% of the total) were recovered from recovery sump RS-05.
- Through the end of June 2018, approximately 222,983 gallons (5,309 barrels) of product have been collected.
- An absorbent sock was removed from MW-11 and product skimmers were removed from MW-08, MW-15, and MW-20 in accordance with SCDHEC’s request in their letter date-stamped May 8, 2018.
- Relocated product skimmer from RW-08 to RW-10.

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 June 5 through 7, 2018, from 62 of the 68 scheduled monitoring wells (22 sampled monthly and 46 sampled quarterly). Six monitoring wells were not sampled because of insufficient water in the well or the presence of product. Samples were

analyzed for benzene, ethyl benzene, toluene, total xylenes, 1,2-dichloroethane, MTBE, and naphthalene.

- The following constituents were detected above their respective groundwater standards:
 - Benzene – in samples from 17 monitoring wells ranging from 5.74 to 8,910 µg/L.
 - Ethyl benzene – in one monitoring well with a concentration of 1,250 µg/L.
 - Toluene – in samples from two monitoring wells ranging from 1,990 to 20,200 µg/L.
 - 1,2-dichloroethane – 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.
 - MTBE – in samples from eight monitoring wells ranging from 63.8 to 1,230 µg/L.
 - Naphthalene – in one monitoring well with a concentration of 206 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.
 - 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 sparging system was down for a total of 11 hours in June due to a thunderstorm the night of June 22, 2018. This resulted in an operational uptime of 98% during June 2018.
- Flows in the vertical sparging wells were maintained at 4-11 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 a approximately 15 scfm each in June 2018.

Regulatory Interaction

- Submitted response to comments on June 6, 2018 regarding SCDHEC letter titled: *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 May 2018* to SCDHEC on June 27, 2018.
- Submitted *Annual Monitoring Report* to SCDHEC on June 27, 2018.
- Conducted internal stormwater pollution prevention plan (SWPPP) inspection on June 14, 2018.
- The Anderson County Stormwater Department granted a SWPPP extension on June 6, 2018. The new expiration date for the SWPPP is June 16, 2020.

Future Activities

- In accordance with the *Sparging Operating Limits* letter to SCDHEC dated July 26, 2017:
 - Maintain flow in the stream aerators at 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 sparging network southwest toward MW-11 and expand the Cupboard Creek 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.
- Gauge recovery sumps/trenches/wells, monitoring wells, and stream gauges monthly for depth to groundwater and free product thickness.
- Conduct groundwater monitoring and reporting quarterly.
- Continue routine visual inspections of Brown's Creek and Cupboard Creek.
- Conduct quarterly surface water sampling at 17 established locations along Brown's Creek and Cupboard Creek.
- 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.

Figure

