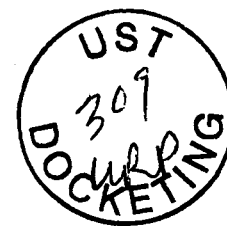




JERRY AYCOCK
PLANTATION PIPE LINE
1000 WINDWARD CONCOURSE
SUITE 450
ALPHARETTA GA 30005

MAY 03 2019



Re: Review of Monitoring Data and Response to Comments
Plantation Pipe Line Lewis Drive Release, 112 Lewis Dr., Belton, SC
Anderson County
Site #18693
Petroleum Pipe Line Release Reported December 8, 2014
Response to Comments Letter received January 17, 2019
2018 Third Quarter Monitoring Report received January 22, 2019
December 2018 Well Water Analytical Results received February 7, 2019
Response to Comments Letter received February 21, 2019
2018 Fourth Quarter Supplemental Data received March 8, 2019
Meeting with Plantation Pipe Line and Jacobs held April 5, 2019

Dear Mr. Aycock,

The South Carolina Department of Health and Environmental Control (DHEC) has reviewed the above referenced documents. The following comments and /or requests are provided as discussed in our April 5, 2019 Meeting:

- 1) The majority of the wells were not gauged October and November 2018. DHEC specifically stated that monthly gauging must continue and the Corrective Action Plan Addendum (CAPA) be followed in the November 19, 2018 conference call and in previous correspondences (Coleman to Aycock) on December 11, 2018, May 8, 2018, and December 14, 2017. Regarding Plantation Pipe Line's (PPLs) request to change the gauging and sampling of monitoring wells and recovery features, DHEC concurs with quarterly gauging and monitoring with the exception of MW-7, MW-15B, MW-17B, MW-20, MW-26, MW-34, MW-36, MW-37, MW-38, MW-39, MW-40, and MW-41. DHEC prefers monthly sampling, as stated in the December 11, 2018 correspondence (Coleman to Aycock). However, DHEC agrees to sampling of these wells every 6 weeks as proposed in the January 17, 2019 Response to Comments Correspondence and agreed to in the April 5, 2019 meeting. However, groundwater monitoring well MW-46 must be included in the more frequent monitoring schedule to be conducted every 6 weeks. In regard to sampling newly installed wells MW-51, MW-52, MW-53, and MW-54, DHEC agrees to the amended sampling schedule from monthly to every six weeks for the remainder of the initial four sampling events. Based upon the initial data collected from MW-51, MW-52, MW-53, and MW-54, sampling frequency can be re-evaluated for these wells. A revised CAPA will need to be provided as a stand-alone

document when the Annual Report (AR) is submitted. All proposed changes will need to be provided in a different colored font.

- 2) Surface water samples were not collected nor analyses run on surface water October and November 2018. DHEC specifically stated that monthly gauging must continue and the CAPA must be followed in the November 19, 2018 conference call and in previous correspondences (Coleman to Aycock) on December 11, 2018, May 8, 2018, and December 14, 2017. The only agreement regarding changes to the surface water sampling schedule was provided in the December 11, 2018 correspondence whereby DHEC agreed that surface water sampling locations FP-1, FP-2, FP-3, and SW-6 could be omitted from routine sampling. A revised CAPA will need to be provided as a stand-alone document when the AR is submitted. All proposed changes will need to be provided in a different colored font. DHEC does not concur with the proposal to sample all monitoring wells and surface water on a quarterly basis. Surface water must continue to be sampled monthly as discussed in the April 5, 2019 meeting.
- 3) PPLs request to remove two features located up-gradient of Brown's Creek, Recovery Trench 2 (RT-2) and the reactive core mats installed to address seeps, was evaluated by DHEC as discussed in the April 5, 2019 meeting. Regarding RT-2, DHEC has had concerns regarding its effectiveness, as the water table elevation in many points within the trench has in the past been frequently above the trench's screened interval as stated in the December 11, 2018 correspondence (Coleman to Aycock). DHEC's evaluation of this request is provided in comment 18.
- 4) PPLs request to remove 43 product recovery features was evaluated. In regard to the trench in the area of Brown's Creek please see comments 3 and 18. In regards to the recovery sumps (RSs) in the area of the Hayfield Zone, ground water elevation changes have been significant, in some locations that range being greater than 15 feet. In regard to the recovery wells (RWs) and Recovery Trench 1(RT-1), the variation tends not to be as great. Considering that the current groundwater elevation is significantly elevated when compared to the past groundwater elevation, DHEC requests that product recovery features remain in place. DHEC agrees to quarterly gauging for all RWs, RS-1, RS-2, RS-5, RS-14 and RT-1 and semi-annual gauging of the remainder of the RSs ensuring that one of the two events captures when groundwater elevation is expected to be at its lowest. DHEC notes PPLs concerns that the product recovery features were never intended for monitoring the effectiveness of the remediation system, that they are an eyesore and are detrimental to public perception of the site, and are no longer useful for their initial purpose. However, in that a pilot study was never conducted to determine the effective radius of influence of the air sparge system, these additional monitoring points are beneficial in recording the impact of the air sparge system as many are closer to the air sparge system than groundwater monitoring wells. Additionally, many of the product recovery features were installed in the known preferential path of contaminant movement which aids in monitoring the effectiveness of the corrective action system. A revised CAPA will need to be provided as a stand-alone document when the AR is submitted. All proposed changes will need to be provided in a different colored font.

- 5) Regarding PPLs request to remove all remaining one inch diameter wells / piezometers at the site, DHEC re-evaluated the value of these wells for gauging and based on this re-evaluation believes that comments provided in the May 8, 2018 correspondence (Coleman to Aycock), "As these piezometers have value as a resource to monitor the free phase petroleum levels in key areas and are beneficial as a measure of comparison due to their existence near the initiation of site assessment" remain valid. The majority of the one inch diameter wells / piezometers within the CAPA (TW-55, TW-59, TW-60, TW-64, TW-66, TW-67, TW-73, and TW-96) are useful to monitor areas where monitoring wells are not present and for those near the air sparge system aid in evaluating the radius of influence of the system. Further, based upon additional re-evaluation, DHEC requires that TW-28, TW-41, TW-42, TW-45, TW-46, TW-59, and TW-94 be included in the CAPA for routine free product gauging and groundwater elevation measurement due to their location in the path of the greatest contaminant migration towards Brown's Creek and for those one inch diameter wells / piezometers near the air sparge system these wells aid in evaluating the radius of influence of the system. A revised stand-alone CAPA will need to be provided when the AR is submitted. All proposed changes will need to be provided in a different colored font.
- 6) Conflicts between Table 4 (Groundwater Elevation and Product Thickness Data) and Table 5 (Dissolved Oxygen Results for Groundwater) in the Third Quarter Monitoring Report were noted in regard to the presence of FPP in MW-16, MW-18, and MW-20. Table 4 does not document the presence of FPP in MW-16 or MW-20 on July 11, 2018 whereas Table 5 does document the presence of FPP in these wells. Also Table 4 does not document the presence of FPP in MW-16 or MW-18 on September 11, 2018 whereas Table 5 does document the presence of FPP. This will need to be corrected in revised table(s) provided in a separate appendix within the AR.
- 7) Please clarify what data is being used to create contour lines for dissolved benzene in the area of MW-46 and the area of MW-45 / MW-23. Figure 4A in the Third and Fourth Quarter Monitoring Reports illustrate a discontinuous plume; however, data to support this determination is lacking. Data or a revised figure will need to be provided in as a separate appendix within the AR.
- 8) Data being used to create the 1,000 ppb contour line for dissolved benzene around MW-17B on Figure 4B in the Third Quarter Monitoring Report will need to be provided. To DHEC's knowledge there are no other bedrock wells in the area. Clarification or a revised figure will need to be provided in a separate appendix within the AR.
- 9) PPL stated in the January 17, 2019 correspondence (Waldron to Coleman) that bubbling or other qualitative observation would be provided in the gauging table. However this could not be located. In the future these observations will need to be provided on Table 4 (Groundwater Elevation and Product Thickness Data) and a revision to Table 4 will need to be provided in a separate appendix within the AR.
- 10) The Project Manager for the site must be copied on all correspondence, plans, and or reports sent to DHEC going forward. Copies of previously documents submitted to the Bureau of Air Quality and the Bureau of Water and any responses received must be provided in a separate appendix within the AR.

- 11) In that wells are no longer being sampled monthly, low flow sampling purging and sampling procedures will need to be conducted. A revised stand-alone Quality Assurance Project Plan (QAPP) will need to be provided when the AR is submitted. All proposed changes will need to be provided in a different colored font. Should sampling be conducted prior to submittal or approval of the revised QAPP, low flow purging and sampling should be conducted and stabilization achieved prior to sampling following low flow purging procedures.
- 12) PPL agreed in the January 17, 2019 correspondence (Waldron to Coleman) that a standardized field data sheet will be used during future sampling events. However, these sheets could not be located. In the future standardized field data sheets will need to be provided.
- 13) In the future water supply wells should be sampled using EPA Method 524.2.
- 14) Trend graphs must be enlarged in hard copy as agreed upon during the November 19, 2018 conference call in all future reports. Legible hard copies are necessary.
- 15) As discussed and agreed upon during the November 1, 2018 meeting and documented in the December 11, 2018 correspondence (Coleman to Aycock) neither MW-17 nor MW-19 will be abandoned. These monitoring wells will remain on the routine monitoring schedule.

In the future any proposed changes to the CAPA must be provided in a stand-alone document. Review of monitoring report or any other miscellaneous document provided by PPL that discusses changes to the CAPA does not constitute approval of any changes to the CAPA.

The following comments and/or requests were not discussed specifically in our April 5, 2019 Meeting but will need to be addressed:

- 16) Elevated contaminant concentrations in bedrock have continued to be unaddressed. DHEC requests an evaluation of the elevated contaminant concentrations in the bedrock aquifer be provided within the AR.
- 17) During evaluation of PPLs request for changes, it was noted that an updated Monitoring Well Survey that includes former and current wells is needed. It would be helpful if the air sparge system wells were also included on this map in a different color font for easier identification. DHEC requests that the updated well survey map be provided when the AR is submitted.
- 18) To evaluate PPLs request to remove RT-2, DHEC conducted an evaluation of all well data in the area of Brown's Creek. It was noted that in addition to the RT-2, groundwater monitoring wells MW-24, MW-38, MW-39, MW-40, MW-41, MW-42 and MW-43 fail to bracket the water table. DHEC requests that PPL provide a strategy to monitor the area immediately up-gradient of Brown's Creek to determine if free phase product (FPP) is present and sample for dissolved phase constituents. According the site's CAPA, the presence or absence of FPP is necessary to trigger an evaluation of recovery features. Section 5 of the CAPA states that FPP data will

determine if the radius of influence of the Browns Creek Recovery Zone (BCRZ) and the Cupboard Creek Recovery Zone (CCRZ) sparge curtains will need to be evaluated. Therefore, the presence or absence of FPP must be known in this critical area immediately up-gradient of Brown's Creek in order to make a decision regarding the removal of RT-2. It is DHEC's position that additional shallow wells installed in the area where the surficial aquifer is not currently being bracketed would provide this information. When it has been demonstrated to DHEC, via the installation of additional water table bracketing wells in the area immediately up-gradient of Brown's Creek, DHEC will be able to make an informed decision on the removal of RT-2.

- 19) DHEC also requires that an additional groundwater monitoring well be installed along Brown's Creek southeast of MW-40 near where a seep is shown on Figures 3 in the Third and Fourth Monitoring Reports and that a surface water sampling location is added southeast of SW-12 along Brown's Creek. It was also noted that groundwater monitoring well MW-46, in the area of the CCRZ fails to bracket the water table. Therefore, DHEC requires that additional shallow wells be installed in the area where the surficial aquifer is not currently being bracketed. A revised CAPA will need to be provided as a stand-alone document when the AR is submitted. All proposed changes will need to be provided in a different colored font.

In summary: items 1-5 and 19 will need to be addressed in a revised CAPA, items 6-10 will need to be provided in a separate appendix within the AR, item 11 will need to be addressed in a revised QAPP, items 9-10 and 12-14 will need to be provided in future reports, item 16 will need to be provided within the AR, and item 17 will need to be provided as a stand alone document. All documents should be submitted along with the AR.

DHEC should be notified a minimum of four days prior to any environmental work being conducted. Documents should continue to be provided in paper format and pdf via a disk with Site ID # 18693 and Plantation Pipe Line Lewis Drive Release noted in a prominent location. Should you have any questions, I can be reached at (803) 898-0628 or colemabj@dhec.sc.gov. Faxes can be sent to (803) 898-0673.

Sincerely,



Bobbi Coleman, Hydrogeologist
Assessment & Unregulated Petroleum Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

CC: Chris McCluskey, Upstate EA Region Anderson Office
William Waldron, Jacobs, 3120 Highwoods Blvd., Suite 214, Raleigh, NC 27604
Gary Poliakoff, Poliakoff & Associates, PO Box 1571, Spartanburg, SC 29304
Scott Lewis, 15 Edgewood Dr., Williamston, SC 29697
Eric Lewis, 421 Reedy Fork Rd., Greenville, SC 29605
Technical File