

August 22, 2019

Via Electronic Mail

Mr. Scott R. Williamson
Program Manager, Waterways & Wetlands Program
Pennsylvania Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110-8200

**Re: Item 2 Supplement
Responses to DEP Comments for Hydrogeological HDD Re-Evaluation Report
LeTort Spring Run 16" Horizontal Directional Drill Location (S2-0210-16)
Permit No. E21-449
Middlesex Township, Cumberland County**

Dear Mr. Williamson:

In compliance with the Corrected Stipulated Order dated August 10, 2017 a Re-Evaluation Report on the above-referenced horizontal directional drill (HDD) was submitted to the Pennsylvania Department of Environmental Protection (Department) on February 6, 2019. In a letter dated March 19, 2019, the Department requested further information. On June 8, 2019, SPLP submitted a letter responding to each item in the Department's letter and a revised Re-Evaluation report. In response to a conference call on August 15, 2019 discussing the responses and revised Re-Evaluation report, SPLP submits the following supplement to the response for Item 2 of the Department's letter.

- 2. Once the items discussed above are developed, please discuss any operational provisions or changes proposed for the intervals where the previous inadvertent returns occurred. Also, discuss any drilling intervals along the proposed 16-inch drill path where increased vigilance may be warranted, i.e.: the P.G. working in concert with the HDD contractor as sensitive geologic zones are approached by the drill bit.**

Prior to initiating the 16-inch pilot hole, the drilling contractor, environmental inspector and professional geologist will review the revised 16-inch profile and the 20-inch as built profile to pinpoint areas of potential concern. Further, SPLP will provide the drilling contractor with locations of potential concern along the 16-inch HDD profile, as identified during the review of the 20-inch HDD, the geotechnical investigation and the geophysical survey. As those areas are approached, additional efforts will be made such as increased monitoring of annular and/or mud pressure changes and increasing the frequency of drill path surveys to identify any surfacing of air, groundwater or drilling fluid in the event of a LOR. Further, the drilling contractor will evaluate the need to modify the characteristics of the drilling fluid (i.e., viscosity) and increase the frequency of swabbing the borehole to reduce the potential for cuttings to accumulate within the bore hole.

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Analysis of the as-built 20-inch profile and proposed 16-inch profile shows the IR at HDD Station 2+00 occurred at profile depth of 44 ft and approximately 54 ft of depth to the proposed 16-inch profile. Treatment of this IR point using bore grout failed, and ultimately it required recirculation of the IR materials to complete the pipeline installation. The IRs occurring at Station 6+00 were at the 20-inch profile depth of 103 ft, and 123 ft on the 16-inch profile. The IR clusters from Station 9+00 to 13+80 occurred over a profile depth 98 to 118 ft on the 20-inch, and at 118 to 128 ft of depth to the 16-inch profile. The injection of Loss Control Materials (LCM) and bore grout was attempted multiple times with only partial success and the HDD was completed by recirculation of the materials. The IR at HDD Station 17+00 occurred above a profile depth of 40 on the 20-inch pipeline which was treated by inserting steel casing past the IR point.

Considering the IR events and corrective actions attempted during installation of the 20-inch pipeline, and 20-ft separation to the proposed 16-inch profile, SPLP concludes that the use of LCMs and bore grout will not be effective to treat losses of circulation or prevent IRs during drilling of the 16-inch profile. As a result, SPLP will require the setting of casing to bedrock at the HDD entry down to bedrock during the pilot drilling phase, and the use of cement grout injections to control losses of circulation and prevention of IRs, or the sealing of IRs if any occur, during the drilling phases for installation of the 16-inch pipeline.

SPLP submits that we have been, and are, in complete compliance with the agreed terms and analysis requirements of the Order, as agreed to by the Department, and that no further analysis is required for the Department to consent to the start of this HDD. SPLP therefore requests that the Department approve the Reevaluation Report for LeTort Spring Run Crossing Horizontal Directional Drill (S2-0210) as soon as possible.

Sincerely,



Larry J. Gremminger, CWB
Vice-President – Environmental, Health & Safety
Energy Transfer Partners
Mariner East 2 Pipeline Project