

April 11, 2019

Mr. Matthew Gordon  
Sunoco Pipeline, L.P.  
535 Fritztown Road  
Sinking Spring, PA 19608

Re: Hydrogeological HDD Re-Evaluation Report  
Interstate 81 16" Horizontal Directional Drill Location (S2-0220-16)  
Permit No. E21-449  
Middlesex Township, Cumberland County

Dear Mr. Gordon:

The Pennsylvania Department of Environmental Protection (DEP) is requesting more information from Sunoco Pipeline, L.P. (SPLP) related to the HDD Re-Evaluation for the Interstate 81 (I-81) Crossing, HDD # S2-0220-16 and permitted under E21-449, posted on the DEP Mariner East II pipeline portal webpage on February 27, 2019.

1. Examination of the drilling record for the 20-inch pipeline boring indicates a persistent and significant loss of circulation (LOC) and inadvertent return (IR) that began approximately 500 feet from the east of the the bore. It continued for most of the duration of drilling. The s-wave seismic profile (figure 4 of 7, Geophysical Report) indicates that a deeper pathway of 20 additional feet would place the bore in a zone of higher velocity bedrock underneath the persistent IR location and interval to the east of that IR location. Please discuss the possibility of designing the profile even deeper to pass beneath the low velocity feature on figure 4, Geophysical Report.
2. Once the items discussed above are developed by using the geophysical profiles, please attempt to predict where any operational provisions or changes may be necessary for the intervals where the previous LOCs or IRs 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.
3. In the re-evaluation report, please further discuss SPLP's monitoring procedure for detecting an IR and the standard operating procedures that are implemented upon the loss of circulation with special emphasis on how these provisions will minimize the occurrence and magnitude of an inadvertent return.

4. SPLP is reminded that drilling of any sort in a karst environment can induce subsidence sinkholes. The site geologist should be reminded to exercise vigilance for surface indications of sinkhole formation.
5. Relating to the Analysis of well production zones and use of information obtained during construction of the 20-inch pipeline:

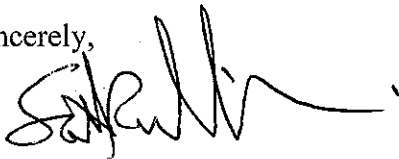
The re-evaluation report fails to include an evaluation of the information and data collected from the water supply located within 450 feet of the HDD, or the other nearby water supply identified in the report (>450 feet from the HDD).

Any private or public water supply data obtained within 450 feet or otherwise obtained in the vicinity of the 20-inch or proposed 16-inch HDD should be used and discussed as part of this HDD re-evaluation. This information and data should include, but not be limited to, any applicable water supply sampling data that SPLP may have obtained and any water supply complaints that SPLP may have received for water supplies within 450 feet of the HDD or the general vicinity during construction of the 20-inch pipeline. The results of the SPLP's water supply sampling program, investigation, disposition of the complaint, and any correlation or non-correlation to SPLP's construction activities should be evaluated and discussed in the HDD re-evaluation report. Use the report to demonstrate how the proposed 16-inch HDD activity will minimize the potential for IRs and impacts to water supplies. Please revise the re-evaluation report to include this information.

Upon receipt, DEP will post SPLP's response to this letter on the DEP pipeline portal webpage for public comment. The public will have 5 additional business days from the date of posting on the website to provide DEP any additional comment.

If you have any questions or would like to discuss this letter, please contact me at [scwilliams@pa.gov](mailto:scwilliams@pa.gov) or 717.705.4799.

Sincerely,



Scott R. Williamson  
Program Manager  
Waterways & Wetlands Program

cc: Larry Gremminger, Energy Transfer Partners/Sunoco Pipeline, L.P. (pdf copy)  
Monica Styles, Sunoco Pipeline, L.P. (pdf copy)  
Douglas Hess, P.G., Skelly and Loy  
Matt Stough, Cumberland County Conservation District (pdf copy)