

May 17, 2019

Via Electronic Mail

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

Re: Responses to Clean Air Council, Mountain Watershed Association, Inc., and Delaware Riverkeeper Network Comments to Sunoco's Response to DEP's Request for Additional Information on HDD PA-CU-0062.0000-WX-16 (HDD# S2-0170)

Dear Mr. Williamson:

In a letter dated May 3, 2019, the Clean Air Council, Mountain Watershed Association, Inc., and Delaware Riverkeeper Network (Appellants) commented on Sunoco Pipeline, LP (SPLP) responses to the Department of Environmental Protection (Department) request for additional information for horizontal direction drill (HDD) site HDD PA-CU-0062.000-WX-16 (HDD# S2-0170) submitted on April 30, 2019. Please accept this letter as a response to these comments. The Appellants comments are bolded below followed by SPLP's responses.

1. Justification of the proposed bore path.

The Department reasonably asked for information justifying why Sunoco proposed to make the specific changes set forth in the Re-evaluation Report. Sunoco provides some information, but frustratingly fails to present a straightforward answer, and instead spends four paragraphs of its six-paragraph response listing information it used to come up with that proposal. That is all well and good, but how that information led to Sunoco's proposal remains obscure.

A clearer answer could state that the depth in question was selected because greater depths could not be done for a certain reason, and lesser depths were problematic for another reason. The endpoints were optimal because they allowed a certain benefit, and others did not allow such benefit. And so forth. It would not be hard to write.

Instead, Sunoco uses non-specific, all-purpose language touting an "increased depth" without explaining the purpose of the specific depth, and increased entry and exit angles without justifying the specific angles. The result is many words with little enlightenment, an unfortunate par for the course for Sunoco. If there is a reasonable justification for the proposal Sunoco selected, it should have no trouble articulating it. The explanation provided, however, is what one would expect when there is no justification to give.

SPLP's response letter dated April 30, 2019, presents our analysis and root cause of the IR events. Two IR events were tool "punch in" occurrences, which are difficult to prevent, regardless of the location of an HDD entry or exit. The only available HDD design solution is to maximize the entry and exit angles to accelerate tool entry or exit into or out of bedrock. This was done. The HDD entry is maximized at 16 degrees which is the pipeline pull segment "break over" allowable curvature stress limit to tie-into the conventionally laid pipeline, and the west side entry point was relocated to add buffer between the entry point and adjacent wetlands. The east side exit point was relocated to a "point of intersect" in the centerline alignment to add a buffer to the adjacent wetlands and the exit angle maximized at 14 degrees which is the curvature stress limit for the compound (curved) pipeline pull back direction.

The third IR occurred during the pilot phase, with the pilot tool at 1,880 feet (ft.) from entry and resulted from drilling fluids being pushed through weathered bedrock and overburden to the land surface due to the shallow depth of the 20-inch profile which was proceeding through weathered and/or fractured bedrock. SPLP increased the depth of the redesigned 16-inch HDD to approximately 128 feet below ground surface, an additional 58 ft of depth based on a review of rock quality designation (RQD) values and lithologic descriptions from the 2017 geotechnical investigation. Specifically, the depth selected was identified based on the horizontal run being advanced through bedrock having fair to excellent RDQ values (i.e. 62-90) and bedrock that was not highly fractured or weathered.

2. Interception of fractures

Sunoco's response to the Department's Item 2 does not make sense. Sunoco writes in full: "Based upon the 2017 geotechnical core data, the pilot and reaming tools will intercept fractured, weathered, and broken layers within the bedrock until approximately 130 ft. of depth below the land surface is achieved. As discussed in the response to Item 1 above, the horizontal run is set at a general depth of 126 ft. below ground, which provides for a minimum of 20 ft. of competent rock above the profile to mitigate the potential for IRs to occur." (Emphasis added).

20 feet above 126 feet bgs is 106 feet bgs, not 130 feet bgs. Sunoco's response suggests that it has selected a depth for the 16-inch pipe that keeps it just outside the zone of competent rock rather than safely within it. If Sunoco's statement is accurate, this proposal revised drill plan should not be approved.

As a minor note, Sunoco writes that the depth of the horizontal run was "discussed in the response to Item 1 above." It would have been helpful to have been discussed, but it was not.

This was a math/typing error, in which the elevation of the horizontal run was not corrected for the change in surface elevation for the third IR location and geotechnical boring B-1. Thank you for pointing this error out. The surface elevation for boring B-1 is approximately 550 feet above mean sea level (AMSL), while the surface elevation at the third IR is approximately 500 feet AMSL. Once the elevation difference is accounted for, the "corrected elevation" for the horizontal run will be more than 20 feet into competent bedrock.

3. Overburden strength

The Department requested information on overburden strength as required in the Order. Sunoco's response does not contain that information. Sunoco provides qualitative information on density and consistency of the overburden material, as opposed to strength of the overburden as a structure. This is simply non-responsive.

The results of the standard penetration tests, which are the most frequently used subsurface drilling test, provide quantitative, as opposed to qualitative, information on the density of the overburden material. The additional testing, which includes water content, grain-size, and Atterberg Limits, further provide quantitative information on the overburden.

The Order is not clear when defining overburden strength, which is not a common geotechnical engineering term. Each of the drilling and laboratory tests are typically used to determine the stress-strain relationship of soils, and in turn shear strength; however, the Order did not request a calculation of the shear strength over various overburden layers.

4. Pipe stress allowances

Unfortunately, Sunoco's response again does not answer the question the Department asked. The Department asked for "further explanation of how the following statement [on pipe stress allowances] applies to this HDD re-evaluation." (Emphasis added). Sunoco spends most of a page describing in general terms the theory of pipe stress allowance in pipeline design without mentioning this HDD re-evaluation. Then it appends a pro forma statement that could apply to literally any of its HDD re-evaluations: "All of the information and the stress assessment procedures above are incorporated into the profile design and implemented in analysis of the drilling profile to ensure the integrity of the pipeline as installed." How so? Sunoco does not explain.

The appellants did understand SPLP explanation "how" pipe stress allowance information is used, since as stated in their comment, they recognize this same analysis could be (and is) applied to every HDD design.

In our response to comment "1" above, SPLP provided some additional specific information relative to the redesigned profile to explain how the new design is taking action to prevent the occurrence of IRs and potential for unpermitted discharges to Waters of the Commonwealth.

The specifications for the pipeline and HDD design are shown on each profile. The appellants could utilize this and the other publically submitted data to provide specific critiques of any submitted HDD design.

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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 Graham Creek Crossing Horizontal Directional Drill (S2-0170-16) as soon as possible.

Sincerely,



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