February 18, 2019

By Email

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Re: Comments on Report for HDD PA-CA-0091.0016-RD-16 (HDD# S2-0100-16)

To whom it may concern:

Pursuant to the Corrected Stipulated Order entered on EHB Docket No. 2017-009-L on August 10, 2017 ("Order"), and on behalf of Clean Air Council, Mountain Watershed Association, Inc., and the Delaware Riverkeeper Network ("Appellants"), please accept these comments on Sunoco Pipeline L.P.'s ("Sunoco") re-evaluation report ("Report") for the horizontal directional drilling ("HDD") indicated by drawing number PA-CA-0091.0016-RD-16 (the "HDD Site").

1. Sunoco's proposed measures improve the drill but do not go far enough.

Given Sunoco's analysis that shallow depth of overburden and possibly bedrock fractures contributed to the inadvertent returns during the 20-inch drill, Sunoco is right to propose deepening and lengthening the HDD such that there is a significantly greater depth of cover and more competent bedrock, in particular under the Exceptional Value wetlands. *See* Section 4.1 of the HDD Hydrogeologic Reevaluation Report ("Hydrogeologic Report"). Sunoco is also right to set up enhanced monitoring when crossing zones of earlier spills and increased fracturing, though the Department should require Sunoco to identify what it means by "enhanced monitoring" before it approves this re-evaluated drill through such sensitive features including the endangered bulrush.

However, the Department should require Sunoco to undertake the additional measures recommended in the sealed Hydrogeologic Report that Sunoco does not commit to in the main Report. The Hydrogeologic Report recommends in Section 4.2:

> The drilling procedures should include the immediate suspension of drilling activity and assessment at the initial signs for fluid loss that was implemented by the ME II HDD program in the summer of 2018. Frequent suspension of drilling and grouting (or "squeeze grouting") before resuming will most likely be required to inhibit IRs while drilling through any zones of lost circulation, if encountered. Other standard ME II drilling practices to minimize IRs should be employed, as needed; including, but not limited to:

- Minimizing annular pressures to reduce the risk of IRs
- Reducing drilling fluid density, to maintain a clean borehole
- Controlling penetration rates to maintain a clean borehole.
- Re-establishing drilling fluid circulation slowly before advancing.

In addition, contractors should be prepared to manage the type of groundwater discharge that occurred at the northwestern entry/exit during the drilling of the 20-inch line for HDD S2-0100.

Sunoco commits to none of these measures in its Report, nor does it explain why they are not appropriate here. This is a glaring deficiency in the Report.

2. The alternatives analysis is based on inconsistent statements and introduces a new type of trenchless technology the Department should discuss with Sunoco.

Sunoco's alternatives analysis is deficient. Its statement that "conventional auger bore installation is … restricted to lengths that are ideally less than 200 ft." and that "300 feet … is beyond the technically practicable limits of an auger bore to complete regardless of substrate conditions" contradicts its other statements on the topic. Sunoco's Trenchless Construction Feasibility Analysis states at Section 4.1.2 that "the current maximum extent for a CAB installation of a 16" or 20" diameter pipeline is approximately 390 feet." *See* http://files.dep.state.pa.us/ProgramIntegration/PA%20Pipeline%20Portal/MarinerEastII/Cambria/11%20-%20EAF/Encl%20E%20-%20Comp%20Env%20Eval/Part%203%20-%20Alternatives%20Analysis/Appendix%20B%20-%20Trenchless%20Feasibility%20Analysis%20%202016-11-29-FINAL.pdf. And Sunoco has elsewhere in a letter to the Department dated August 24, 2018 stated "conventional auger bore is technically limited to less than 300 linear ft of relatively flat land surface at a single attempt." Which one is it?

Sunoco introduces a new form of trenchless pipe installation in this Report. It writes, "A direct pipe installation is also a practical means of pipeline installation that can avoid the occurrence of IRs. However, a direct pipe installation bore installation is limited to 750 ft in extent, and this is well under the total length of regulated and protected resources at this HDD location." "Direct pipe" is not listed in Sunoco's supposedly comprehensive list of "any method of trenchless pipeline construction techniques that have been used or will be used in the completion of the Project." *See* Trenchless Construction Methodologies, http://files.dep.state.pa.us/ProgramIntegration/PA%20Pipeline%20Portal/MarinerEastII/Summary_of_Order/Para%202%20-%20Exhibit%20A%20-%20Trenchless%20Construction%20Methodologies.pdf. Appellants presume Sunoco is referring to what Mears HDD has a registered trademark for, Direct Pipe®, *see* http://mearshdd.net/hdd/direct-pipe/. Though Sunoco says direct pipe "can avoid the occurrence of IRs," the promotional video on the Mears website acknowledges that the system uses a bentonite slurry. It is unclear what the pros and cons of it are. The Department should have a conversation with Sunoco about the use of this technique, which as far as Appellants are aware has not previously been authorized by nor disclosed to the Department.

3. The Department should require Sunoco to plan for groundwater returns and protect the wetlands and the endangered bulrush from groundwater drainage.

Sunoco has not identified any plan for handling excess returns of groundwater, a known problem with the drill of the 20-inch pipe. As the Hydrogeologic Report notes in section 2.3.2,

> To complete construction of the 20-inch line, a dual centrifuge system, 60 gallons per minute (gpm) each, was used to separate recovered solids and groundwater. Excess water (that which could not be used for mixing drilling fluid) was separated from solids (cuttings and drilling fluid additives) and the excess water was passed through a filter bag before discharging onto the ground under permit. A similar condition is likely to occur during drilling for the 16-inch line and similar measures will be required if a significant delay in completing the HDD occurs during active drilling.

The Report does not analyze how the drainage the borehole created affected the wetlands and the endangered bulrush or the effect drilling the 16-inch may have on the wetlands or endangered bulrush. Such a biological / hydraulic analysis is needed to avoid takes of the endangered species. The Department should require this before allowing Sunoco to proceed.

The Hydrogeologic Report also notes that the discharge of produced water was under permit. The Report does not mention plans for handling produced water, which would indeed require Departmental permitting, and possibly alterations to the E&S plans. The Department should also require this information before allowing Sunoco to proceed.

4. Problems from mining at the Site have not been adequately investigated.

Section 3.2.2 of the Hydrogeologic Report notes the presence of mine spoil in the upper layers of the soil at the Site. "Entries and exits pass through alluvium, colluvium, and soils developed on top of weathered bedrock and/or mine spoils. In general, the IRs have been related to shallow overburden, coarse grained unconsolidated materials near the surface (such as alluvium and mine spoil) …" This contrasts with the analysis of mining in Section 2.2.6, which finds a lack of evidence of deep coal mining. This contrast is potentially explainable, but has not been explained. Sunoco needs to explore the risk of mine subsidence and also acid mine drainage. That has not been done here. Acid mine drainage is particularly relevant given the wetlands and the groundwater returns at the Site during the drilling of the 20-inch pipe.

5. The HDD alignment diagrams are misconstructed.

The Plan View for the original and revised 16-inch profiles have a misaligned or erroneous photograph, impeding the viewer's ability to analyze some surface resources along the alignment. It is also unclear whether the error affects any other layers of the Plan View.

Conclusion

Overall, there is a lot of information that Sunoco needs to provide to the public and to the Department before there is a complete package to evaluate. Even setting aside the additional needed information, the Department should not approve the re-evaluated HDD without first requiring the precautions urged in the Hydrogeologic Report.

Thank you for considering these comments. Please keep us apprised of your next steps on the HDD Site.

Sincerely,

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