

**DEP Permit # E38-194**  
**DEP Permit HDD Reference # PA-LE-0055.0000-RD-16**  
**DEP HDD # S3-0101**  
**Township – West Cornwall**  
**County - Lebanon**  
**HDD Site Name – North Zinns Mill Road Crossing**

**4<sup>th</sup> Public Comment Period**

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**1. Comment**

On behalf of the Concerned Citizens of Lebanon County (CCLC), we respectfully submit these comments on the above-referenced Sunoco Pipeline, LP (SPLP) Hydrogeologic HDD Re- Evaluation Report for the Snitz Creek/North Zinns Mill Road Crossing site in West Cornwall Township, Lebanon County. According to the PA DEP’s HDD Re-Evaluation Report Table, Sunoco’s HDD Re-Evaluation Report for this site was submitted and posted on the PADEP Mariner East II pipeline portal webpage on February 5 and 7, 2019. Supplemental analysis and revisions to the HDD Report were submitted by SPLP and posted on the webpage on August 29, 2019, and March 2, 2020. The current comment period ends on March 7, 2020.

We have two major concerns regarding Sunoco's Re-Evaluation Report and supplemental information/revisions for the Snitz Creek/North Zinns Mill Road HDD site. One concern relates to the impact on private water supplies from the 20-inch and 16-inch HDD pipelines at this site. Like many rural areas in Pennsylvania and Lebanon County, no public water supply is available in the vicinity of the Snitz Creek/North Zinns Mill Road HDD site. All residences are dependent on unregulated private wells. Another concern relates to the significant revision of the length and depth of this 16-inch pipeline HDD and its impact on water resources.

### **1. Sunoco fails to adequately evaluate impact to private water supplies.**

By letter dated March 19, 2019, PADEP requested information from Sunoco (which was not included in the initial Snitz Creek HDD Re-Evaluation study) regarding three water supply complaints that were submitted to Sunoco during construction of the 20-inch HDD. The PADEP also asked for any data obtained in the vicinity of the proposed 16-inch HDD to be discussed in the re-evaluation report. In its initial Re-Evaluation Report, not only did Sunoco not include a discussion about the three complaints but it falsely claimed: "No water supply well complaints were received during drilling of the 20-inch pipeline." PADEP's 3/19/19 letter stated:

"5. ... The re-evaluation fails to include mention of the three water supply complaints that were submitted to SPLP or the information and data gained during investigation of those complaints. 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 data should include but not be limited to: any applicable water supply sampling data and any water supply complaints that SPLP may have obtained and received for water supplies within 450 of the HDD or within 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 and used to demonstrate that the proposed 16-inch HDD activity will minimize the potential for IR's and impacts to water supplies. Please revise the re-evaluation report to include this information."

Sunoco responded to this request in its submission to PADEP dated August 29, 2019, but only discussed two water supply complaints. By its letter to Sunoco dated December 12, 2019, PADEP again requested information about water supply data and complaints. PADEP's 12/12/19 letter advised SPLP:

“5. ... The re-evaluation only includes two of three water supply complaints that were submitted to SPLP and is missing any of the information and data gained during investigation of the third complaint. In addition, given the substantial change to the proposed drilling profile at this site and the number of private water supplies within 450 feet of the HDD, SPLP should evaluate and discuss how the proposed 16-inch bore path and profile will minimize impacts to these private water supplies.” (emphasis added.)

In its most recent submission to PADEP, Sunoco stated, “The absence of the third water well complaint was an unintentional oversight ...” and then described the third private well investigation undertaken. It summarized, “Based on the investigation results for the three water well complaints received during completion of the 20-inch HDD, no direct impact to water well quality can be associated with pipeline construction activities.” PADEP did not agree with this assumption but said there was not enough evidence to make that conclusion. Three water well complaints out of 26 private wells near the 20-inch HDD is significant. Why did it take Sunoco a year and two letters from DEP to clarify this information in its Re-Evaluation Report?

Sunoco also pointed to its “Water Supply Assessment, Preparedness, Prevention and Contingency Plan” (2016-17) and the increased depth of the redesigned 16-inch profile, and concluded, “Taken on the whole, these design and engineering modifications will make construction-related impacts to a water well unlikely.” But the plan has not prevented impacts to private water wells; it simply sets a protocol for dealing with such complaints. And we know such impacts (diminution and contamination of private drinking water wells) have occurred during the Mariner East pipeline construction across the state. SPLP has proposed no reliable way of preventing these impacts nor has PADEP required SPLP to ensure a reliable solution be implemented.

Sunoco has not done what PADEP requested in its letters dated 3/19/19 and 12/12/19. In submissions for the Snitz Creek/North Zinns Mill Road HDD Re-Evaluation study, SPLP did NOT “evaluate and discuss how the proposed 16-inch bore path and profile will prevent or minimize impacts to these private water supplies.” Sunoco’s conclusion that impacts are “unlikely” is not based on any evaluation of the proposed extended and deepened 16-inch HDD. For instance, the number and depth of any additional water wells near the revised lengthened 16-inch HDD have not been identified or evaluated. Sunoco’s conclusion is without a scientific basis.

**2. Sunoco fails to show that extending the length and deepening the 16-inch pipeline HDD will protect water resources and eliminate inadvertent returns.**

Sunoco’s attempts to cross Snitz Creek using HDD have resulted in more Inadvertent Returns (IRs) than almost any of its other troubled HDD sites requiring re-evaluation reports. The RETTEW Geology and Hydrogeological Evaluation Report dated

February 4, 2019, at page 7 (attachment 1 to the Re-Evaluation Report), recounted the history of at least a half dozen or more IRs at the Snitz Creek HDD site during construction of the 20-inch pipe. On page 9 of its report, RETTEW stated the HDD site is “a complex karst fracture system” and “is susceptible to the inadvertent return of drilling fluids during HDD operations.” Now SPLP proposes a deeper and substantially longer profile for the 16-inch pipeline in the same right-of-way as the 20-inch pipe.

According to the initial Snitz Creek Re-Evaluation Report, the original HDD design for the 16-inch pipe called for the horizontal length of 1,180 feet, the maximum depth of cover of 90 feet and the depth under Snitz Creek of 8 feet. The recommended revised parameters call for a horizontal length of 3,050 feet, a maximum depth of cover of 137 feet and the depth below Snitz Creek of 115 feet. The Report candidly stated in its Conclusion section, “The redesign of the HDD will not prevent all IRs. IRs are common on entry and exit of the drilling tool and other measures are required to minimize IR potential.” The Report then lists the “HDD best management practices” that Sunoco will employ from its April 2018 Plan, practices which were presumably employed during the 20-inch pipe installation to no avail.

Just as the Snitz Creek/North Zinns Mill Road HDD Re-Evaluation report proposes to extend the length of the 16-inch pipeline HDD to facilitate a deeper HDD to minimize the potential for IRs in Snitz Creek and impact to water resources and wetlands, so has Sunoco proposed the same “remedy” for many other HDD sites required to have re-evaluation studies done. In a letter dated January 28, 2020, Mr. Williamson indicated to Sunoco officials DEP’s approval of a minor amendment to an Erosion and Sediment Control (E&S) Permit covering 19 HDD sites in 8 counties in PADEP’s Southcentral Region (this did not include the Snitz Creek site). Many sites identified in that permit amendment proposed extending the length of the 16-inch pipeline HDD “to facilitate a deeper HDD to minimize the potential for an inadvertent return.” One such revised HDD site identified in the 1/28/20 letter is in Conewago Township, Dauphin County, and South Londonderry Township, Lebanon County, called “Wetland J47.” Reportedly, nearby landowners have been notified by certified letter from Sunoco that an Inadvertent Return has occurred at that site, although officials from South Londonderry Township who recently met with Sunoco officials apparently were not so informed. The certified letter reportedly explained how “normal” and expected it is to have IRs when HDD is used. We have been unable to confirm this information, but it is consistent with the statements in the Snitz Creek HDD Re- Evaluation Report.

It is little comfort to know that the “remedy” of extending and deepening the HDD pipe will not prevent Inadvertent Returns in nearby streams, wetlands or water resources, nor protect nearby private water supplies from interference as a result of HDD pipeline construction. Tripling the Snitz Creek HDD drilling path in limestone bedrock known to have many fissures and voids throughout its profile will likely increase the incidences of IRs. In fact, the HDD re- evaluation report stated that such impacts are to be expected. How is this an acceptable answer to prevent or minimize

IRs and subsequent impacts on the groundwater and drinking water wells? The proposed Snitz Creek HDD “revision” should be rejected, and Sunoco should be sent back to the drawing table before they commence one more HDD. Apparently, the fines Sunoco has been assessed have not deterred the harm to water resources that will continue to plague HDD activities on the Mariner East pipeline.

Thank you for considering these comments. Please keep us apprised of any next steps. (1-2)

Letter – [Concerned Citizens of Lebanon County](#)

## **2. Comment**

On December 12, 2019, the Department requested additional information from Sunoco regarding its reevaluation (“Report”) of the horizontal directional drilling (“HDD”) indicated by drawing number PA-LE-0055.0000-RD-16 (the “HDD Site”). Sunoco responded to the December 12, 2019 email on February 28, 2020, revising the Report. 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 regarding Sunoco’s February 28, 2020 supplemental response (“February Response”). The comments are in sections with numbers corresponding to the items in the Department’s December request and in the February Response.

### **1. Sunoco fails to answer the Department’s questions on monitoring data and the location of the 16-inch profile, and further analysis reveals the depth of the 16-inch profile is only supported by cherry-picking the data.**

Paragraph 5 of the Order reads in part:

Upon completion of Sunoco's re-evaluation of each HDD site referenced in Paragraphs 2 and 3 herein, Sunoco shall provide for each such site a report signed and sealed by a Professional Geologist, describing and presenting the results of its study for that location ("Report"). The Professional Geologist shall be a person trained and experienced in geotechnical and hydrogeologic investigation.

The Department requested that Sunoco comply with the Order, writing: “What ‘monitoring data collected during active drilling’ was used? Please present all of the data, including the ‘monitoring data collected during active drilling’ of the 20-inch HDD, and explain how the location of the revised 16-inch HDD profile was determined.”

Sunoco does not present all of the data, as requested. Rather, it alludes to broad categories of data that it claims to have taken into account and then jumps to its conclusion. This does not allow the Department or the public to evaluate the

information and is inconsistent with the Order’s requirement to “describ[e] and present[] the results of [Sunoco’s] study for that location.” Nor does Sunoco anywhere “explain how the location of the revised 16-inch HDD profile was determined.” Sunoco does present data which at first glance seems to support its deepening of the profile to the 90-115 feet bgs range:

From 90 feet bgs to 115 bgs, RQD values ranged from 68 to 99, and recoveries were 100. The RQD values for the 5-foot sample interval above and below the proposed profile depth were 68 and 61, respectively. These RQD values are indicative of competent bedrock overlying the HDD profile for the horizontal run for 412 feet before and 341 feet after the geographic location of the IR events during the 20-inch HDD.

When actually looking at the newest boring report it attaches, however, the data do not support the depth chosen as the clear best depth. Appellants present in the table below data extracted from the boring report showing RQD values for each five-foot interval below ground surface, for the latest bore and the closest earlier bore, located about 150’-200’ away and still intersecting the horizontal run of the proposed 16-inch (note that the samples for the earlier bore are not precisely every five feet, so the numbers below are for the closest data to the given five-foot interval):

<b>Feet bgs</b>	<b>RQD S3- 0101</b>	<b>RQD B-2</b>	<b>Feet bgs</b>	<b>RQD S3-0101</b>	<b>RQD B-2</b>	<b>Feet bgs</b>	<b>RQD S3-01-01</b>	<b>RQD B-2</b>
5-10	0	none	50-55	73	75	95-100	99	52
10-15	81	31-68	55-60	68	95	100-105	98	67
15-20	83	77	60-65	53	100	105-110	91	none
20-25	83	75	65-70	53	95	110-115	88	none
25-30	88	87	70-75	18	75	115-120	68	none
30-35	71	80	75-80	58	100	120-125	61	none
35-40	100	68	80-85	56	62	125-130	62	none
40-45	28	55	85-90	47	35	130-135	73	none
45-50	65	92	90-95	88	70	135-140	32	none

The profile view reveals that “the horizontal run for 412 feet before and 341 feet after the geographic location of the IR events during the 20-inch HDD” that Sunoco discusses falls into the height above mean sea level corresponding with the 115-120-foot bgs stratum of the S3-0101 and B-2 bores. Sunoco writes that “[t]hese RQD values are indicative of competent bedrock overlying the HDD profile for the horizontal run” in that location. Overlying the 115-120-foot stratum are indeed rock layers that have high RQDs according to the S3-0101 bore, ranging from 88-99 in the 90-115 feet bgs range.

But two complications emerge, looking at the data. The first is that the rock layer where drilling would occur has a much lower RQD according to the S3-0101 bore data, at 68, and even lower just below that layer. The second is that the nearby B-2 bore shows that the RQD varies widely within the span of the horizontal run. The 90-105 feet bgs range according to the B-2 bore has a much lower RQD of 52-70. This is not promising for the proposed 16-inch revised profile. Applying Sunoco's criteria but using the B-2 rather than S3-0101 data, a better depth might be in the 70-75 feet bgs range. Starting at about 35 feet bgs, the RQD data for the two bores diverge strongly and only correlate weakly. This is not a reliable data set on which to plan the 16-inch profile.

It is under precisely circumstances such as these that geophysical data are most important.

**3.b. Sunoco continues to fail to justify its baseless statement that there are no interconnected fractures underlying Snitz Creek.**

The Department correctly calls Sunoco out for failing to explain or justify its baseless conclusion that there is a "lack of interconnected fractures" underlying Snitz Creek. In its February response, Sunoco claims that data from the 20-inch drill shows that the fractures are not interconnected. Such data, no matter what it is, cannot justify that conclusion. The rock underlying Snitz Creek is three-dimensional. Just because the linear 20-inch path reportedly did not intersect interconnected fractures multiple times does not mean that the separate revised 16-inch path would not do so, let alone that such interconnected fractures don't exist. Indeed, the Hydrogeologic Reevaluation Report in the initial Report explained at Section 9.0 that the geology at the Site exhibits "a complex karst fracture system."

As a result, Sunoco's conclusion that "given the greater depth of the revised profile through more competent bedrock, additional IRs will likely not be encountered during completion of the 16-inch HDD" is unscientific.

**3. Sunoco should still conduct geophysical surveys in the area surrounding Snitz Creek.**

Sunoco contends that it could not conduct geophysical surveys in the area surrounding Snitz Creek "because portions of the drill path were too saturated or overgrown to allow for accurate geophysical measurements." Appellants question this conclusion. Recent research has shown that even in wetlands and environmentally sensitive areas, using multiple geophysical surveying methods and correlating the data will result in accurate survey results. See Groves et al., "Use of geophysical methods for soil profile evaluation," Canadian Geotechnical Journal, Sept. 2011, available at [https://www.researchgate.net/publication/237373374\\_Use\\_of\\_geophysical\\_methods\\_for\\_soil\\_profile\\_evaluation](https://www.researchgate.net/publication/237373374_Use_of_geophysical_methods_for_soil_profile_evaluation). The Department should require Sunoco to explain in

technical detail why others have been able to obtain accurate geophysical survey results in the same type of environment where Sunoco says it cannot.

**4. Drilling the 20-inch likely contaminated neighboring wells, and the 16-inch as revised is likely to do so as well.**

Sunoco concludes that the third (previously undisclosed) well water contamination incident is unrelated to its drilling--the same conclusion it came to for the first two. The Department concluded that Sunoco did not have enough data to reach that conclusion. The reporting of water quality complaints in three domestic water supply wells of the 26 within a half mile of the alignment, all during the first half of 2018, is significant and unlikely to be just a matter of chance, as Sunoco suggests. The Department knows that sometimes Sunoco's use of HDD has caused water supply contamination. The presumption should be that such contamination nearby during Sunoco's use of HDD was Sunoco's fault, unless a more likely explanation is shown. No other explanation has been shown for these three well water contamination incidents.

This should also be looked at in light of Sunoco's history of disclosure of these complaints. In its Report as initially issued, Sunoco wrote that "No water supply well complaints were received during drilling of the 20-inch pipeline." This was false. Next, Sunoco disclosed two of the three of which the Department is aware on August 29, 2019. Now, in its February Response, Sunoco finally discloses the third. Why does Sunoco repeatedly hide the ball regarding the water contamination complaints?

Given that Sunoco has failed to scientifically determine the location of underground fractures and the competency of the bedrock where it plans to drill the 16-inch pipe, its statement that impacts to water wells from the 16-inch would be "unlikely" are hopeful but unscientific speculation. This is not sufficient protection for the neighbors who have already been put through too much.

Thank you for considering these comments. Please keep Appellants apprised of any next steps. (3-7)

Letter – [Clean Air Council](#)