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To: John Hohenstein, PA DEPA

Reference: Valley Road Crossing (HDD S3-0591, Gradyville Crossing (HDD S3 0580) and Arch Bishop/S Chester (HDD S3-0541)

According to the supplemental information to the May 21st letter from SPLP, supplied by Larry Greminger sent on Oct 31<sup>st</sup> to John Hohenstein to assist in the review of the SPLP proposal, the data and methods were “shared” in the use of the HDD to “minimize the risk of Inadvertent Returns (IRs) and impacts to public and private water supplies during the construction phases of the HDD”. The proposed method incorporates the use of an Annular Pressure Monitor that records the drilling fluid pressures within the annulus of the HDD as the pilot tool advances, and the supplemental information notes the follow:

***“...Abrupt decreases in AP are indicative of drilling through a fracture, and are typically accompanied by a Loss of Circulation. Declining AP while progressing forward is indicative of formation weakness and loss of fluids to the surrounding formation...”***

And the “corrective” action upon encountering such “weaknesses” (weaknesses related to supporting a pipe, not related to the naturally occurring flowing water in this region) is noted below.

***“Accordingly, corrective action to address the presence of fractures or unstable geology at greater depths below ground requires grouting of the HDD annulus. Two types of grouting will be utilized for corrective actions to seal fractures and stabilize zones of weak geology. These are: 1) grouting using “neat cement”; and 2) grouting using a sand/cement mix. Neat cement grout is a slurry of Portland cement and water. The sand/cement grout mix is a slurry of mostly sand with a small percentage of Portland cement and activators that after setup results in a material having the competency of a friable sandstone or mortar. Both grouting actions require tripping out the drilling tool, and then tripping in with an open-ended drill stem to apply or inject the grout mixes. The neat cement grout is highly reactive to the bentonite/water drilling fluid mix and is used during pilot phase drilling to stabilize the movement of fluids within the geologic formation where multiple fractures exist in relative proximity to each other in a stable geologic formation...”***

And where, the author Greminger admits the following as an additional risk:

***“Proactive Treatment by Annulus Grouting Generally the use of Loss Control Materials (LCMs) are less effective below 70 ft of the ground surface. The AP below that depth can exceed the effective stabilization capability of LCMs. Many of SPLP’s HDD profiles are below 70 ft of depth for the***

***horizontal length of the profile. Accordingly, corrective action to address the presence of fractures or unstable geology at greater depths below ground requires grouting of the HDD annulus”...***

THE CHALLENGE:

In our area, the “naturally occurring rock fractures” are the primary methods by which water naturally flows within our local neighborhoods to major and minor water tributaries, wells and other naturally occurring wetlands, and to which it has already been proven on a personal encounter that no one (not including Sunoco) can predict the impact of water flow as a result of any previous nor future digging) when “inadvertently” encountering rock fractures and it’s subsequent downstream impact on water flow, when disturbed.

Therefore a “fracture” is only considered an anomalous condition (in this Sunoco SPLP proposal scenario), when considering whether such digging can support the weight of a massive and un-natural pipe (destined to carry decidedly unnatural explosive materials) without any regard to the impact of the actual and naturally occurring flow of water that our neighborhoods, wells, livestock, and plants are dependent on. Fractures or the existence of them for our area, dictate how water flows in our area, so “plugging them up” when the impact would be unknown will absolutely result in un-natural and permanently altered natural water flow wherever such HDD drilling is done. This is not a maybe scenario, this is an absolute outcome. Maybe if we had a convenient above-ground (visible) river to watch how water flows, this would not be an issue. But we don’t. We have what is indigenous to this area in which water distribution is dependent on these “anomalous fractures” that have sustained our natural water flows within our neighborhoods for a long time.

The approach proposed is a little like saying (using a simple analogy of surgery in a human body) that SPLP proposes we to do “blind (unable to determine the nature of what you are digging around in until you stick the probe in)” experimental surgery, where we know nothing about where or the nature of the structure we are doing the surgery in (digging in this regard), with a simple minded approach to (paraphrased) “oh, and when we encounter a (hmmm, fracture or something else squishy we don’t know the nature or composition of, equivalent perhaps within a human body, to a vein or capillary or giant aorta using the surgery analogy) that gets in our way, we will “simply” fill the (fracture/vein/capillary/aorta) with cement (and other stuff that stops or plugs things up)”. Consider if a physician elected to do surgery with this approach (plug all things we don’t understand so we can put this un-natural object in your body. Whoops we inadvertently plugged up your aorta. Oh well, your problem not mine?

This particular fact was thrown back at me when my local pond went dry (and presumably, in order to force SPLP to the table) I would have had to scientifically prove some earlier digging that occurred by Sunoco impacted this random occurrence to which the geological consultant who reviewed my case suggested I would have to prove).

## THE OBVIOUS WATER AFFECT AND IMPACT IN OUR AREA

Given that it is assumed that abrupt decreases of AP WILL be incurred (because rock fractures ARE the way water flows in this area – no other major methods), the proposed remedy when encountering this “weakness” is to “pump” various forms of slurry, concrete mix and sand to “stop” (one presumes) or “block” these naturally occurring weaknesses in the rock formations and naturally occurring fractures, that are in fact the way water flows through this region.

SO the question I return to SPLP (given I was offered the same scenario to try to defend my own position when my pond went dry from early SPLP digging - even though I was not the one digging in my own yard) – how will Sunoco “prove” (prior to digging anything) that the method it proposes to use to randomly fill that dumping slurry, cement, sand whenever the encounter the “perceived” weaknesses in the rock with their APM (by which the weakness or fractures in the rock currently provide the path for water flow in our area today) will NOT therefore affect nor alter (further) the existing water flow to our areas natural wells, ponds, streams and impact our livestock, lives, homes, naturally occurring water ways purely on water flow alone? (Notwithstanding the impact on water quality (assuming we still have it and it is not obstructed), the health of the water, and the contamination of of the water that feeds ourselves and livestock and plants).

The whole plan is deeply disturbing, unscientific, and not even remotely attempting to employ simple engineering standards or thoughtful environmental approach to risks/impacts. To purposely dig through an area where the known water flows utilize the rock fractures to move to its destinations with the sole purpose of laying un-natural large pipes without consideration or foreknowledge for the impact on geological, natural water flows when they are in fact undocumented or unknown (in an area where we are water dependent) is totally irresponsible behavior. Worst engineering plans I have ever encountered.

Engineers around the world should be appalled at this simple minded and plan (and this document has already been shared with the “best” in global construction businesses, with similar response as to the one I am providing) that has no consideration for the assumed impact on the water dependencies our neighborhoods depend on. Some simple, rudimentary considerations for the just the basics of water flow impact by a regulatory agency or by the entity given permission to do this work, is COMPLETELY absent in this proposal or in any plan, and is simply beyond irrational.

DEPA should be ashamed to consider and approve this approach as proposed in this supplemental explanation of the methodology. I hope that DEPA has enough backbone to at least request more a more detailed and thorough investigation (and study) of a more logical and balanced approach to purposely digging in water flow sensitive areas where are immediate neighborhood water systems are at risk.