

September 6, 2016

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

Re: Technical Deficiency Letter – Erosion and Sediment
Control General Permit (ESCGP-2)
Pennsylvania Pipeline Project (a.k.a. Mariner East II)
Southeast Regional Office Submission
Construction Spread 6
DEP File No. ESG0500015001
East Goshen, East Nantmeal, East Whiteland, Upper Uwchlan,
Uwchlan, Wallace, West Goshen, West Nantmeal, Westtown,
West Whiteland Townships, and Elverson Borough
Chester County

Aston, Chester, Edgmont, Middletown, Thornbury, and
Upper Chichester Townships, and Brookhaven Borough
Delaware County

Dear Mr. Gordon:

The Department of Environmental Protection (DEP) and the following County Conservation Districts in the Southeast Region; Chester and Delaware, have reviewed the above-referenced NOI and have identified the following technical deficiencies. The Pennsylvania Erosion and Sediment Pollution Control Program Manual (E&S Manual) and the Pennsylvania Stormwater Best Management Practices Manual (BMP Manual) include information that will aid you in responding to some of the deficiencies listed below. The deficiencies are based on applicable laws and regulations, and the guidance sets forth an established means of satisfying the applicable regulatory and statutory requirements.

The technical deficiencies have been assembled from the County Conservation Districts and DEP staff. General technical deficiencies are identified that appear to be a reoccurring technical deficiency throughout the plan narratives and drawings. Specific examples of the general deficiencies are provided for reference; however, all of the specific instances may not have been identified. Sunoco Logistics, L.P., and their consultant team need to review the entire project submittal to ensure any and all specific technical deficiencies and general technical deficiencies are addressed from a comprehensive/entire permit application standpoint.

General Common Technical Deficiencies

1. The application will need a comprehensive Preparedness Prevention Contingency (PPC) and private well plan. Regarding these plans, 25 Pa. Code Section 102.5(l):
 - a. The application includes separate documents covering PPC activities. Due to the scope of this project, you must consolidate these plans into one stand-alone document that can be used in the field. This plan must also be consistent in your Joint Permit Applications submitted for this project.
 - b. In a letter dated June 24, 2016, regarding the northeastern bulrush, the U.S. Fish and Wildlife Service stated, "As a means to minimize impacts should an IR occur, you provided a Horizontal Directional Drilling (HDD) Inadvertent Release Contingency Plan. In addition to the instructions in this Plan, please add the USFWS phone number as an agency to be contacted should an IR occur, and inform the HDD contractor about the sensitive nature of the drill at this location." Revise your Contingency Plan to incorporate this information.
 - c. While you provided a narrative discussing how impacts to private water supplies will be investigated and addressed, a formal plan has not been provided. As such, revise your PPC Plan to include the following:
 - i. Measures the applicant will take to investigate for the presence of private water supplies in areas where HDD crossings are proposed.
 - ii. Procedures that will be followed to investigate and resolve impacts to private water supplies should they occur as a result of the proposed activities. This procedure needs to discuss how private water supply owners will be alerted in the event of an inadvertent return.
 - iii. The application states, "SPLP Plans to use the FERC standards in accepting and investigating landowner complaints of spring and well water supply impairment." Provide a copy of these FERC standards and incorporate the FERC standards into your PPC Plan.
 - d. The Mariner East I pipeline had several inadvertent returns during the construction process. Provide a list of areas where Mariner East I had issues with inadvertent returns to the surface when conducting HDD crossings, and discuss how you have taken these historic issues into account in your design of the proposed project.
 - e. The Plan needs to address management of excess drilling mud/liquids that may be encountered at the individual bore pits.

2. Regarding your agency coordination:
 - a. Provide Pennsylvania Natural Diversity Inventory (PNDI) clearances from the PA Game Commission and U.S. Fish and Wildlife Service. *[25 Pa. Code Section 102.6(a)(2)]*
 - b. Provide proof that you have received clearance for your project from Pennsylvania Historical and Museum Commission (PHMC).
3. The project description provided in the Cultural Resource Notice states that the second pipeline is to be installed within 5 years of the first pipeline. The project description provided in the application, however, does not discuss this time frame. *[25 Pa. Code Section 102.6]*
 - a. Revise the application to discuss if the pipelines will be installed at the same time, or on different schedules.
 - b. The application states that the second pipeline will be 16 inches in diameter, while other applications related to this project state that the second pipeline could be up to 20 inches in diameter. Which is correct?
 - c. If the pipelines are proposed to be installed at separate times, revise the application to clearly indicate this, and to identify the permanent and temporary impacts from the second pipeline installation. Please be advised that if issued the permit may expire before construction is completed on any second line.
4. Your application identifies “travel lanes” at numerous resource crossings; however, details on these crossings have not been provided. Provide details on these travel lanes that includes, but is not limited to, cross sectional view, length of time in service, potential impacts, etc. Note that the application did not detail any impacts, permanent or temporary, or E&S Controls for these travel lanes even though they may constitute disturbance and are shown to cross resources. As such, your application may need to be revised. *[25 Pa. Code Section 102.6]*
5. We have compared the Plans submitted with this application and the Plans submitted with the Joint Permit Applications regarding consistency between the site plans and E&S Control Plans you have provided. Inconsistencies were noted as follows: *[25 Pa. Code Section 102.6]*
 - a. Describe the difference between the “Permanent Easement” and “Permanent Right-of-Way” areas that are identified on your plans. This description needs to discuss maintenance activities that will be performed on these areas following

construction of the pipeline, and measures that will be taken to ensure that future maintenance activities do not detrimentally impact aquatic resources (i.e., cutting PSS wetlands after restoration).

- b. Provide a description of the "Travel Lane" that is shown on your project plans. This description needs to include:
 - i. The purpose of these features.
 - ii. Whether these features will be temporary or permanent.
 - iii. The crossing methods (i.e., mats, pads) that will be used to cross resources.
 - c. The plan views provided do not show a permanent right-of-way proposed over areas where HDD installation is proposed. Describe any clearing or maintenance activities that are proposed to occur over areas where your pipeline installation will utilize HDD/bore methods to install the line.
 - d. The E&S Plan sheets show the proposed gas line being located on top of an existing gas line. Discuss how this will be achieved without preventing access to the existing line.
 - e. It is recommended that changes to either the JPA or the E&S application be reflected in the other application. Failure to ensure consistency between the two applications will delay any permit decision for this project.
6. In order to ensure adherence to Threatened and Endangered species restrictions/avoidance measures that are part of any PNDI clearances, the Plans and drawings need to clearly identify these locations and provide construction notes and seasonal restrictions. Both the plans for this application (ESG0500015001) and the plans for the Joint Permit Applications will need to be revised to include this information. *[25 Pa. Code Section 102.6(a)(2)]*
 7. The time of concentration line(s) do not appear to follow the contouring on the PCSM Plan drawings. The time of concentration lines need to be drawn perpendicular to the respective existing and proposed contours. Justify or amend the plan drawings and calculations accordingly. *[25 Pa. Code Sections 102.8(g), 102.8(f)(8), 102.8(f)(9), 102.8(g)(3), and 102.8(g)(4)]*
 8. The time of concentration line lengths on the drawings do not appear to match up with the time of concentrations calculations. Verify and amend accordingly. *[25 Pa. Code Sections 102.8(g), 102.8(f)(8), 102.8(f)(9), 102.8(g)(3), and 102.8(g)(4)]*

9. It is difficult to follow how the additional time of concentration is calculated at the bottom of DEP Worksheet 5 (found in Spread 6 Volume IV). This calculation needs to show every step (i.e. detailed computations) of the calculation for the additional time of concentration for each modeled storm event (for 2, 10, 50, and 100-year storms). [25 Pa Code Section 102.8(g), 25 Pa Code Section 102.8(f)(8), 25 Pa Code Section 102.8(f)(9), 25 Pa Code Section 102.8(g)(3), & 25 Pa Code Section 102.8(g)(4).]
10. For DEP Worksheets 1—5 and the ESCGP-2 application, amend the following [DEP Application and Worksheets] for all above-ground structures (i.e. control valve locations and compressor/pump stations): [25 Pa. Code Section 102.6]
 - a. Include all causes of impairment for each respective receiving watercourse
 - b. Verify the receiving watercourse for each valve site's point of interest
 - c. Verify the approval status of the Act 167 Plan for the watershed of each valve site. Provide verification that the site addresses the Act 167 Plan requirements
 - d. Verify the Chapter 93 classification for each respective receiving watercourse
 - e. Verify the 2-year/24-hour runoff volume to each berm based on the berm's drainage area
 - f. Verify the total structure volume provided on DEP Worksheet 5. This should be the lowest value between the drainage area runoff volume, the storage volume of the berm, and the infiltrated volume within 72 hours after the 2-year/24-hour storm event.
 - g. Verify the recommended infiltration rate for each valve site with the calculations and the infiltration test data.
11. In order to be able to utilize PCSM Standard Worksheet No. 10, 90 percent of the disturbed area has to be controlled/managed by a PCSM BMP (refer to Flow Chart D in Chapter 8 of the PCSM Manual). Provide the demonstration that 90 percent of the disturbed area at each site (individually) is controlled/managed by a PCSM BMP (e.g., it appears that less than 90 percent of the disturbed area is being controlled/managed by a PCSM BMP at the Juniata River West Block Valve site). If less than 90 percent of the disturbed area is being controlled/managed by a PCSM BMP, then water quality management can be shown through PCSM Standard Worksheet Nos. 12 and 13 (for TSS, TP, and NO₃). Make all revisions necessary. [25 Pa. Code Sections 102.8(f)(6), 102.8(f)(8), 102.8(g)(2), 102.8(g)(4), and 102.11(a)(2)]

12. Provide the calculations for each Time of Concentration Adjustment. Ensure that these calculations identify the storage volume utilized and how that storage volume was calculated. The storage volume used in these calculations is the storage volume utilized for the storm event, not the total possible storage of the BMP. Make all revisions necessary. *[25 Pa. Code Sections 102.8(g), 102.8(f)(8), 102.8(f)(9), 102.8(g)(3), and 102.8(g)(4)]*
13. Provide discussion as to why HDD or conventional boring was not utilized to cross all surface waters classified as High Quality (HQ) or Exceptional Value (EV) in Chapter 93, as boring could be considered an ABACT E&S BMP (refer to page 290 of the E&S Manual). *[25 Pa. Code Sections 102.4(b)(5)(vi), 102.4(b)(6), and 102.11(a)(1)]*
14. Provide discussion on what E&S BMPs will be utilized at the HDD and conventional boring locations for the drilling mud. Ensure that these BMPs are properly shown on the plan view drawings. *[25 Pa. Code Sections 102.4(b)(5)(iii), 102.4(b)(5)(vi), and 102.4(b)(5)(ix)]*
15. Section E.1: Provide a better identification of which areas of the project were designed to meet which design standards (i.e. which areas were designed to the standards in an approved Act 167 Plan and which areas were designed to the standards of 25 Pa. Code Sections 102.8(g)(2) and 102.8(g)(3)). *[25 Pa. Code Section 102.6(a)(1)]*
16. Section F.1: Provide a better identification of which areas of the project were designed to meet which design standards (i.e., which areas were designed to the standards in an approved Act 167 Plan and which areas were designed to the standards of 25 Pa. Code *[Sections 102.8(g)(2) and 102.8(g)(3)]*

If an area is covered by an approved and current (approved by DEP on or after January 2005) Act 167 Plan, the Post Construction Stormwater Management Plan shall be consistent with any approved and current Act 167 Plan. To demonstrate consistency with an approved and current Act 167 Plan, the applicant may select one of the following options (per Erosion and Sediment Control General Permit for Earth Disturbance Associated with Oil and Gas Exploration, Production, Processing, or Treatment Operations or Transmission Facilities Condition 18.b):

- Submit a letter provided by the municipal or county planning engineer that verifies plan constancy.
- Submit an Act 167 Plan consistency verification report, which is prepared and sealed by a licensed professional.

Make all revisions necessary. *[25 Pa. Code Section 102.6(a)(1)]*

General Comments from Chester and Delaware County Conservation Districts

1. The E&S Legend is utilizing the same symbols for Silt fence and silt sock. The Legend needs to be updated to clearly distinguish between different perimeter BMPs. Also show the maximum allowable length on the plan. *[25 Pa. Code Section 102.11(a)(1)]*
2. The project illustrates substantially long sections of pipeline labeled as "To be Bored." Identify the type of trenchless installation being utilized at various locations such as HDD, traditional boring, directional boring, etc. *[25 Pa. Code Section 102.11(a)(1)]*
3. HDD installations typically require pull back areas, these are areas where the pipe that is to be pulled through the HDD hole is fabricated and prepared to be pulled through the hole. These pull back areas are typically straight off the HDD drill line. Identify all pull back areas for all proposed drilling operations. These pull back areas need to be clearly labeled and within the Limit of Disturbance with complete E&S controls proposed as they will be graded and disturbed as needed to allow for pipe delivery, fabrication and preparation and an access lane for all those activities. *[25 Pa. Code Section 102.11(a)(1)]*
4. If additional pull back areas are needed to be added, all the ESCGP-2 paperwork, disturbed acreage fees and District Service Fees need to be updated to cover the additional disturbances. *[25 Pa. Code Section 102.11(a)(1)]*
5. Illustrate and title the entrance and exit pit locations for all bores and HDD's. For HDD's, illustrate the drilling mud collection containers. Note that this can be field adjusted within the approved LOD when needed. If specifically illustrating this information isn't possible, provide typical details for the entrance and exit pit locations for each trenchless installation method being proposed. *[25 Pa. Code Section 102.11(a)(1)]*
6. The plans need to address how the site contractor is to respond to Inadvertent Returns during drilling activities. Add notes to the plans and cross reference any documents or plans that Sunoco uses for these events. *[25 Pa. Code Section 102.11(a)(1)]*
7. The Site Restoration Note on sheet ES-0.02 states the right of way will be restored back to Meadow. Revise this note as the entire right of way will not be restored back to meadow condition. *[25 Pa. Code Section 102.11(a)(1) and (2)]*
8. The sequence does not provide procedures for reclaiming or restoring the pullback areas. Include these procedures in the sequence.
9. Update Standard Erosion and Sediment Control Plan Note No. 16 on sheet ES-0.06 to read "Sediment tracked onto any public roadway or sidewalk shall be returned to the

- construction site at the end of each work day, or as needed, or as directed by the Conservation District or Local Municipality, and disposed in the manner described in this plan. In no case shall the sediment be washed, shoveled, or swept into any roadside ditch, storm sewer or surface water." *[25 Pa. Code Section 102.4(c)]*
10. Waterbar discharges need to go to sumped areas and then to filter socks. Update construction details to fully illustrate this. *[25 Pa. Code Section 102.11(a)(1)]*
 11. Typical Wetland Crossing – Design Detail Sheet E&S 0.09 Stockpiles need to occur outside of the wetland area.
 12. Stream Wetland Bore crossing – Design Detail Sheet E&S 0.10 – Trench plugs shown within the area to be bored. Shouldn't it be in the area of the bore and receiving pit?
 13. Typical Stream Crossing
 - a. Dry by-pass – Pump Filter Bag Discharge and the clean water discharge needs to be below the LOD.
 - b. Sand Bags need to be below Equipment Bridge or working platform which will also be disturbed.
 - c. Stabilization of disturbed stream banks and areas within 50' or 100'; depending on stream classification, need to be addressed.
 - d. Provide a blow up of each specific stream and wetland crossing that clearly illustrates all the E&S controls. The table provided does not appear to match the number and type of crossings at each location.
 14. Perimeter E&S Controls need to be designed for the maximum slope length during construction. This includes both disturbed drainage slopes and un-disturbed slopes. Address. *[25 Pa Code Section 102.11(a)(1)]*
 15. Diversions need to be provided across all Rock Construction Entrances that are sloped towards roadways to divert storm water flows off the entrance and into perimeter controls. Update plans and details accordingly. *[25 Pa Code Section 102.11(a)(1)]*
 16. In areas where pipeline construction is running slide sloping down hills, the top soil cut lip on the low end of the Right of Way will channel water down to the lowest point. The plans need to fully address this channelized flow of water at the bottom of hills with adequate E&S controls. For examples, see between stations 14377+00 to 14394+00 & 14440+00 to 14444+00. The designer needs to consider the following when evaluating and designing for this condition: that waterbars are not typically functional until final

grades are established; the location of topsoil placement; trenching activities; and contractor access lanes on the ROW. Check the rest of the plans for similar situations and address. *[25 Pa Code Section 102.11(a)(1)]*

17. For steep slopes running down to stream crossings and/or roadways, additional E&S protection needs to be provided at or near the bottom of the slopes. For example see station 14525+00. Please check rest of plans for similar concern. *[25 Pa Code Section 102.11(a)(1)]*
18. Super Silt Fence needs to be used in non-HQ and EV watersheds and 24" Filter socks need to be utilized in HQ and EV watersheds for construction activities adjacent to streams and wetlands. Revise the plans accordingly. *[25 Pa Code Section 102.4(c)]*
19. Illustrate specific E&S controls for each stream crossing. *[25 Pa Code Section 102.11(a)(1)]*
20. Provide a blow up of each specific stream and wetland crossing that clearly illustrates all the E&S Controls. *[25 Pa Code Section 102.11(a)(1)]*
21. The proposed access roads are detailed as an aggregate stone road. This usually requires the removal of top soil. Illustrate the top soil storage areas for each access lane. *[25 Pa Code Section 102.11(a)(1)]*
22. Provide additional contour labeling on both sides of the ROW so that drainage directions can be more readily/ easily interpreted. *[25 Pa Code Section 102.11(a)(1)]*
23. E&S Controls need to be provided through wetland crossings to help reduce the amount of site construction related sediment from discharging to undisturbed areas of the wetland crossings. For an example, see WL-C49. Check the rest of the plans for similar situations and address. *[25 Pa Code Section 102.11(a)(1)]*
24. There are areas of pipeline "to be bored" that are shown within the LOD, but the extent of need for the disturbance is not identified. See from Stations 15045+00 to 15053+00 and 15054+00 to 15065+00 for example. Identify the type/ need of earth disturbance in these areas, check the rest of the plans for this issue and address. *[25 Pa Code Section 102.11(a)(1)]*
25. All large staging areas need to have a full E&S Plan developed including proposed activities, top soil stockpiles, perimeter controls or sediment traps and basins depending on total drainage areas flow to different parts of the staging areas. See staging area on sheets ES-6.56 and ES-6.51 for examples. Check the rest of the plans for similar issues and address. *[25 Pa Code Section 102.11(a)(1)]*

26. The provided restoration plan that is coupled with the E&S Control Plan does not specifically or clearly cover full restoration requirements for the entire area of disturbance along the Right of Way. The CCCD recommends that each plan map sheet be updated with the required restoration standards for each section of pipeline disturbance. Existing lawn areas need to be specified to be returned to lawn, cleared wooded areas need to be restored to brushy meadow or similar within the ROW, outside of the ROW in Temporary Workspaces re-wooded, Ag land restored to Ag land, etc. All individual seed mixes required need to be included in the details and notes sections of the plans and the plan mapping can reference back to those mixes. *[25 Pa Code Section 102.11(a)(1) and (2)]* Plan sheets that are just dedicated to Site Restoration requirements and the plan mapping can easily reference back to those sheets for detail.
27. The site restoration plan for vegetated areas needs to clearly address removal of stone and/or wooden mats where they were used, de-compacting disturbed soils, reestablishment of preconstruction contours and the replacement of topsoil at a minimum of 4 inches deep. *[25 Pa Code Section 102.11(a)(1)&(2)]*
28. Construction Engineering Oversight of the installation of structural BMPs is required. The plan notes and Construction Sequencing need to be updated to address this requirement. Infiltration Berms and Geoweb installations need to be included in these inspections along with any other structural PCSM BMPs. *[25 Pa Code Section 102.11(a)(2)]*
29. The last step of the Sequence of Construction needs to include the submission of a completed Notice of Termination. Address. *[25 Pa Code Section 102.11(a)(1)]*

Chester County Technical Deficiencies

The Chester County Conservation District has a 25% resubmission fee. Sunoco needs to include this fee with the CCCD resubmittal. Additionally, the CCCD is willing to sit down with the designer of this project to go over their comments. If they would like to do that, contact CCCD directly at 610.925.4920, ext. 107 or jsofranko@chesco.org to set up a meeting.

1. Sheet ES 6.80 incorrectly titles two townships as East and West Wheatfield, this needs to be East and West Whiteland. Revise. *[25 Pa Code Section 102.11(a)(1)]*
2. The letter from TetraTech dated July 18, 2015 concerning infiltration testing says Chester County, Middletown Township. This is the incorrect Township. Revise. *[25 Pa Code Section 102.11(a)(1)]*
3. There are multiple areas of “Areas to be Bored” in Chester County that show a bend in the pipe alignment. The plan designers need to coordinate with the Pipeline Company and their Drilling Contractor to verify that the illustrated pipeline alignment is feasible

for trenchless installation. If additional Entrance and Exit pits are required, they need to be illustrated on the plan mapping and shown within the Limit of Disturbance. For examples refer to sheets 6.38, 6.47, 6.50, 6.51, 6.52, 6.54, etc. [25 Pa Code Section 102.11(a)(1)]

4. There is an unlabeled area of disturbance to the South West of the proposed pipelines on sheet ES-6.46. Describe and note the extent of disturbance for this area, check the rest of the plans for similar situations, and address. [25 Pa Code Section 102.11(a)(1)]
5. There is a large staging area split between sheets ES-6.56 and ES-6.57 that is bisected by an UNT to Ridley Creek (S-Q61). Provide full E&S Design for all anticipated earth disturbance within this area along with all proposed stream crossing locations to access the North side of the creek for staging activities. Ensure that this impact is included as part of the PA DEP Chapter 105 submittal. [25 Pa Code Section 102.11(a)(1)]
6. Interstate "362" is mislabeled on sheet ES-6.64. It needs to be "352." Revise. [25 Pa Code Section 102.11(a)(1)]

Delaware County Technical Deficiencies

1. Are ABACT controls being used in HQ and EV watersheds? It is hard to tell based on the plans and the linetype used for sediment barriers not differentiating between sock and fence. Clarify.
2. The Southwest corner of the intersection of the Street Road and Route 352 is the site of the former Fairhope Orchard. This site was subject to arsenic contamination, and required blending of the soil for mitigation. Has this issue been evaluated for potential impacts from this new excavation? Clarify.
3. Sheet E&S 6.03 –
 - a. Sta 15618+50: The run-off from the nursery, Wedgewood Gardens has a BMP in the corner of their property. The pipeline also crosses an existing residential construction site. This will impact the slope lengths and stabilization efforts in the area of the cross culvert.
 - b. Two crossings at Sta 15632+50 do not cross the stream in a perpendicular fashion, how will the disturbed channel be stabilized?
4. Sheet E&S 6.04

- a. Areas to be bored are not shown within the limits of disturbance. Some of the areas are Forested. Will they need to be cleared and grubbed, which would be considered earth disturbance?
- b. Waterbars from the disturbed areas cannot discharge without the benefit of BMP's. Please illustrate a design detail for a BMP for such a discharge.
5. Sheet E&S 6.09 – Unsure why the LOD is illustrated only to the west of the bored pipeline. What is the disturbance that will take place from Sta. 15851+00 through 15859+00?
6. Sheet E&S 3.24
 - a. The pipeline appears to be passing through Linvilla Orchard. Has this area been evaluated for Arsenic Contamination?
 - b. Will the proposed waterbars discharge to stabilized areas or areas of row crops in the area of Linvilla?
7. Sheet E&S 6.31 – The Pipeline is going through an active fill site with E&S controls in place. Coordinate with site officials to not adversely impact existing BMP's without adequate remedial measures.
8. Sheet E&S 6.32 – Is Repauso Creek shown on the sheet? Locate.
9. Sheet E&S 6.34 – How will the HDD pull-back areas affect the wetland? Will it result in compaction? Could the area be done on timber mats?
10. Sheet E&S 6.35 - How will the HDD pull-back areas affect the wetland? Will it result in compaction? Could the area be done on timber mats?

Twin Oaks Station Technical Deficiencies – all Deficiencies relate to 25 Pa Code § 102.11(a)(1)

1. A large area is shown within the LOD to the North side of the existing unnamed tributary. Provide a description of the earthmoving to occur in this area. Also, note that no BMP's are currently proposed for this area. Specify BMPs proposed for this location.
2. Two swales discharge into a long forebay within the Wet Detention Basin. The forebay berm is constructed of planting mix, how will it not be easily eroded as stormwater overtops it?

3. How will the outer structure from the Wet Detention Basin be protected from discharging sediment until it is stabilized?
4. No erosion and sediment control is specified in the Southeast corner of the project. Specify. [25 Pa Code Section 102.11(a)(1)]
5. Plans reference ME1 – Existing Pad, but the existing features plan does not illustrate an existing pad. Specify.
6. The plan does not label the building noted in the sequence. The sequence does not reference construction of the illustrated loop access road, parking, driveway, or offstreet loading area. Specify.

PCSM Technical Deficiencies

Post Construction Stormwater Management/Site Restoration Plan (Narrative and Drawings)

1. The following technical deficiencies are related to the restoration activities during the earth disturbance activities (as part of the E&S Plans) and post construction (as part of the Site Restoration Plans):
 - a. A Site Restoration Plan narrative shall be provided for the mainline pipeline construction. This narrative can be part of the E&S Plan narrative for the mainlines, and it is required to be in conformance with [25 Pa. Code Sections 102.8(n), 102.8(b), 102.8(c), 102.8(e), 102.8(f), 102.8(h), 102.8(i), 102.8(l) & 102.8(m)]
 - b. Provide more identification in the narratives and on the plan drawings related to topsoil segregation. [25 Pa. Code Sections 102.4(b)(5)(iii), 102.4(b)(5)(vi), 102.4(b)(5)(ix), 102.8(f)(3), 102.8(f)(6) & 102.8(f)(9)]
 - c. Provide more identification in the narratives and on the plan drawings related to loosening of compacted soils prior to topsoil placement and stabilization (at the temporary access roads, topsoil stockpiles, access routes along the mainline, etc.). [25 Pa. Code Sections 102.4(b)(5)(iii), 102.4(b)(5)(vi), 102.4(b)(5)(ix), 102.8(f)(3), 102.8(f)(6) & 102.8(f)(9)]
 - d. Provide a discussion of measures that will be taken to avoid and minimize compaction to the maximum extent practicable and where compaction occurs, what measures will be taken to ensure adequate infiltration and successful vegetation of the right of way. [25 Pa. Code Sections 102.4(b)(4), 102.8(b) & 102.22.] The Department recommends you evaluate Section 6.7 (Restoration

BMPs) of the PCSM Manual. Ensure notes are included on the drawings and in the documents that will be provided to the construction contractors.

- e. Describe how your planning and design requirements satisfy *25 Pa. Code Sections 102.4(b)(4) & 102.8(b)* and are minimizing the extent and duration of the construction and the minimizing any increase in stormwater runoff. Identify how these measures are satisfied when the ROW is in close proximity or is crossings surface waters or wetlands.
- f. Provide an antidegradation analysis addressing the requirements of *25 Pa. Code Section 102.8(h)* for the portions of the project that drain to HQ or EV surface waters. Ensure that areas where there may be concentrated stormwater runoff that there are adequate BMPs to control the volume, rate and water quality from the site. [*25 Pa. Code Section 102.8(f)(6)*]

Control Valve Sites (Exton Junction, Boot Road, Glen Mills, West Baltimore Pike)

1. Due to the linear nature of the overall project, provide the latitude and longitude for each valve site for verifying the responses on DEP Worksheet 1 and other calculation reference data. Add this location information to the PCSM Plan drawing. [*25 Pa Code Section 102.8(f)*]
2. Describe in the PCSM narrative how the stormwater runoff from the control valve pad site is intended to enter the underdrain from the surface. Without a berm, it seems that the rainwater runoff may simply run over the underdrain section and down the side of the control valve pad. But it seems that the underdrain is needed to convey some of the runoff from the control valve pad to the infiltration berm. Address. [*25 Pa Code Section 102.8(b)*]
3. Add the soil survey type, HSG, and boundary limits to the PCSM plan drawings. [*25 Pa Code Section 102.8(f)*]
4. Revise the drawing legends to be consistent with the plan drawings. [*25 Pa Code Section 102.8(f)*]
5. DEP Worksheet 4 needs to include all of the areas within the entire limit of disturbance for each Point of Interest. Amend the DEP Worksheet 4s accordingly. [*25 Pa Code Section 102.6(a)(1)*]
6. There are control valve sites in which the proposed infiltration berm is managing less than 90% of the disturbed areas. In these cases, DEP Worksheets 12 and 13 are needed with additional BMPs that manage this uncaptured runoff. [*25 Pa Code Section 102.6(a)(1)*]

7. Provide in hard copy form the outlet structure input data for the HydroCAD stormwater model for each of the infiltration berms; this needs to include the critical widths and elevations of the infiltration berm. Provide the stage-storage table for each infiltration berm from HydroCAD. Also, provide the infiltration data and volume from the HydroCAD model. *[25 Pa Code Section 102.8(g)]*
8. Verify the critical stages of the infiltration berms and underdrains, and any other stormwater BMPs for these valve sites. These need to have licensed professional oversight during construction, and this needs to be noted in the application and the sequence of construction. *[25 Pa Code Section 102.8(k)]*
9. Verify the long-term operation and maintenance schedule for the infiltration berms, underdrains, and any other stormwater BMPs for these valve sites. *[25 Pa Code Section 102.8(m)]*
10. Verify the off-site discharge analysis for each of the points of interest. This needs to be discussed in the narrative, reflected on the plan drawings, and addressed in the application. This needs to include detained and undetained areas of discharge from each valve site. It is uncertain from the plan drawings the limits of the applicant's right-of-way/property and the location of the nearest surface water. Amend the plan drawings accordingly. *[25 Pa Code Section 102.6(a)(1)]*

Twin Oaks Pump Station Site

1. Due to the linear nature of the overall project, provide the latitude and longitude for the Twin Oaks pump station site for verifying the responses on DEP Worksheet 1 and other calculation reference data. Add this location information to the PCSM Plan drawing. *[25 Pa Code Section 102.8(f)]*
2. The bottom of the test pits, performed in 2016 (for soil evaluation), extend to elevation 104; however, the bottom of the wet pond BMP is at elevation 103. The test pit(s) need to extend lower to the limiting zone(s). In addition, previous responses from the applicant stated that the soil borings reflected groundwater at 7 feet below grade, which equates to approximately elevation 102. (These boring logs were not received - Provide a copy of these boring logs for our review). The test pit excavation and log needs to be extended to this groundwater limiting zone elevation following Appendix C of the PA Stormwater BMP Manual. Also, the test pit revealed mottling - is this mottling associated with the adjacent wetland and/or unnamed tributary? This was not discussed in the narrative. Or is this mottling associated with the groundwater? With the information provided, it difficult to review when the test pit did not extend to the elevation of the groundwater encountered in the soil borings. Provide adequate descriptive explanation. There is a concern that the subsurface water may have an

adverse impact on the intended function and volume capacity of the proposed basin. There is also a concern that the adjacent wetland and watercourse will be adversely affected by the proposed basin. *[25 Pa Code Section 102.8(g)(1)]*

3. Verify the hydrologic soil group (HSG) referenced in the narrative for this site. It seems that it differs from the soil survey provided as part of the application. In addition, add the soil survey type, HSG, and boundary limits to the PCSM plan drawings. *[25 Pa Code Section 102.8(f)]*
4. Amend the PCSM narrative to include a source or reference for the rainfall depths for the 2, 10, 50, and 100 year/24-hour storm events that are used in the stormwater calculations and model. *[25 Pa Code Section 102.8(g)]*
5. The narrative does not discuss the infiltration tests or soil evaluations performed in 2016. It only discusses the ones done in 2014. Amend the narrative. *[25 Pa Code Section 102.8(g)(1)]*
6. How does the wet pond manage the volume and water quality? Thoroughly describe how the proposed wet pond will achieve 25 PA Code § 102.8(g)(2) – manage the net change in runoff volume and water quality from storm events up to and including the 2-year/24-hour storm (pre-development to post-development conditions) (also known as the “delta 2”). In addition, how does the wet pond dewater this net change in runoff within 72 hours? There is a reference to 12,327 cubic feet that is listed as managed volume – verify and provide reference on the PCSM Plan drawing for this volume. *[25 Pa Code Section 102.8(g)]*
7. Add the top and bottom elevations associated with the net change in runoff volume (delta2) within the basin to the basin section detail (a detail with the outlet structure shown). *[25 Pa Code Section 102.8(f)]*
8. What is the intent of the 2-foot depth of planting soil proposed at the bottom of the wet pond? How will the collected rainwater, which enters this lower area, exit this lower area when the lower native soils have a 0 inch per hour infiltration rate? *[25 Pa Code Section 102.8(b)]*
9. There is a concern that a 1” diameter orifice will become clogged during operation. How will this smaller sized orifice be protected from clogging? This needs to be addressed in the long-term operation and maintenance schedule. *[25 Pa Code Section 102.8(b)]*
10. Verify the long-term operation and maintenance schedule for the proposed forebay. Describe how this forebay will function and the intent of this forebay. Discuss how potential suspended solids will enter the forebay during a rain event and settle in the

forebay (and not be washed into the main wet pond area). *[25 Pa Code Section 102.8(m)]*

11. Provide in hard copy form the following information from the PondPack model: *[25 Pa Code Section 102.8(g)]*
 - a. The summary table for each point of interest (pre vs post development condition).
 - b. The stage-storage table for the basin (elevation and volume).
 - c. The outlet structure data.
 - d. The schematic diagram of the inflows, basin, bypass flows, outflows with the PondPack IDs.
 - e. The time of concentration data, drainage areas, CN computation (with existing and proposed cover types and associated areas).

12. Update the PCSM plan drawings with the following items: *[25 Pa Code Section 102.8(f)]*
 - a. Differentiate between existing features/topo and proposed features/topo with greyed/shaded lines for existing and bolder lines for proposed.
 - b. Add the bypass drainage area(s) with the bypass drainage area(s) listed in square feet – bypass flow (bypassing the basin) is discussed in the narrative.
 - c. Add the amount of area for the limit of disturbance in square feet. This needs to match the amount for the managed area in DEP Worksheet 4. Please note the cover sheet for the Twin Oaks Pump Station PCSM plan set reflects a limit of disturbance of 6.46 acres – this should be corrected to match the subject of the PCSM plan drawings.
 - d. Add the different cover types with areas listed in square feet
 - e. Add the time of concentration lines for the drainage area to the basin and the bypass area, and the existing condition.
 - f. Add all existing contours and tie-ins for the proposed contouring – differentiate with greyed/shaded lines for existing and bolder for proposed.
 - g. Add more labels to the existing and proposed contours to better review the drainage areas. In some areas, spot elevations may be needed to better depict the

drainage. The contouring is not clear for the drainage associated with the new pad and proposed driveway, and the existing driveway.

- h. Revise the drawing legends to be consistent with the plan drawings. Also, add more line types to the legend to better depict the different line types found in the plan drawings.
13. It seems that there is an existing conditions map within the PCSM Plan set. This existing conditions map does not reflect the ME1 Existing Pad or the existing detention basin. All existing features/topo need to be reflected on the map that is titled Existing Conditions. *[25 Pa Code Section 102.8(f)]*
14. Note the stormwater model reflects a 0.025 inch per hour infiltration rate; however, the 2016 infiltration tests resulted in 0 inch per hour. Update the model accordingly. *[25 Pa Code Section 102.8(g)]*
15. There is a detail for the Basin Outlet Structure on the PCSM Plan – Construction Details sheet. Is the proposed outlet structure or the existing outlet structure? The Section through the proposed wet pond does not reflect an outlet structure; however, the section through the existing detention basin reflects an outlet structure. Also, a Snout is specified on the outlet structure. Snouts are no longer approved by PADEP for water quality credit. In addition, Snouts are usually placed on the interior side of a catch basin or manhole with a sump provided within the structure. The detail on this PCSM Plan sheet reflects the snout on the outside of the outlet structure – what is the intent of the Snout? Is this Snout configuration recommended by the Snout’s manufacturer? Does this Snout configuration adversely affect the hydraulics of the outlet structure. *[25 Pa Code Section 102.8(f)]*
16. Verify all of the titles for each stormwater BMP detail. It seems that some of the details’ titles are not consistent with the labels and notes on the PCSM Plan sheets. *[25 Pa Code Section 102.8(f)]*
17. Verify the dimensions listed in the Vegetated Channels detail. The headings reflect the units to be feet but the specified dimensions reflect symbols for inches. *[25 Pa Code Section 102.8(f)]*
18. Verify the critical stages of the wet pond and swales, and any other stormwater BMPs for the Twin Oaks Pump Station. These need to have licensed professional oversight during construction, and this needs to be noted in the application and the sequence of construction. *[25 Pa Code Section 102.8(k)]*

19. Verify the long-term operation and maintenance schedule for the wet pond and swales, and any other stormwater BMPs for the Twin Oaks Pump Station. [25 Pa Code Section 102.8(m)]
20. Verify the off-site discharge analysis for each of the points of interest. This needs to be discussed in the narrative, reflected on the plan drawings, and addressed in the application. This needs to include detained and undetained areas of discharge. It is uncertain from the plan drawings the limits of the applicant's right-of-way/property and the location of the nearest surface water. Amend the plan drawings accordingly. [25 Pa Code Section 102.6(a)(1)]

Delaware County Conservation District - Point of Contact – Michelle Ferri
Chester County Conservation District - Point of Contact – Joe Sofranko

Pursuant to 25 Pa. Code Section 102.6(c) of DEP's rules and regulations, you must submit a response fully addressing each of the significant technical deficiencies set forth above. Please note that this information must be received within sixty (60) calendar days from the date of this letter, on or before November 1, 2016 or DEP may consider the application to be withdrawn by the applicant.

You may request a time extension in writing before November 1, 2016 to respond to deficiencies beyond the sixty (60) calendar days. Requests for time extensions will be received by DEP and considered. You will be notified in writing of the decision either to grant or deny, including a specific due date to respond if the extension is granted. Time extensions need to be in accordance with 25 Pa. Code Section 102.6(c).

Submit one (1) copy of the revised E&S/SR and PCSM Plan drawings & narratives to Chester and Delaware County Conservation Districts, one (1) copy of the revised E&S/SR and PCSM Plan drawings & narratives to Mr. William Himes at DEP, 3001 Fairway Drive, Altoona, PA 16602-4493 and the two (2) copies of the revised E&S/SR and PCSM Plan drawings & narratives to the DEP Southeast Regional Office at 2 East Main Street, Norristown, PA 19401.

If you believe that any of the stated deficiencies are not significant, instead of submitting a response to that deficiency, you have the option of requesting that DEP to make a permit decision based on the information you have already provided regarding the subject matter of that deficiency. If you choose this option with regard to any deficiency, you should explain and justify how your current submission satisfies that deficiency. Keep in mind that if you fail to respond, your application will be considered withdrawn.

Should you have any questions regarding the identified deficiencies, please contact me at 484-250-5152, and refer to ESG0500015001, to discuss your concerns or to schedule a meeting. The meeting must be scheduled within the 60 calendar days allotted for your reply, unless otherwise extended by DEP.

Sincerely,



Christopher Smith, P.E.
Chief, Construction Permits Section
Waterways and Wetlands

cc: Tetrattech
Ms. Ferri – Delaware County Conservation District
Mr. Sofranko – Chester County Conservation District
Elverson Borough
West Nantmeal Township
East Nantmeal Township
Wallace Township
Upper Uwchlan Township
Uwchlan Township
West Whiteland Township
East Whiteland Township
West Goshen Township
East Goshen Township
Westtown Township
Thornbury Township
Edgmont Township
Middletown Township
Aston Township
Brookhaven Borough
Chester Township
Upper Chichester Township
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