



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)
Pennsylvania Pipeline Project (aka Mariner East II)
South-central Regional Office Submission
Construction Spreads 3, 4, & 5
DEP File No. ESG03000150002
Brecknock, Caernarvon, Cumru, Robeson, South Heidelberg & Spring Townships and New
Morgan Borough, Berks County
Allegheny, Blair, Frankstown, Juniata & Woodbury Townships, Blair County
Lower Allen, Lower Frankford, Lower Mifflin, Middlesex, Monroe, North Middleton, Silver
Spring, Upper Allen & Upper Frankford Townships, Cumberland County
Conewago, Derry, Londonderry & Lower Swatara Townships and Highspire & Middletown
Boroughs, Dauphin County
Penn, Shirley, Tell & Union Townships, Huntingdon County
Lack Township, Juniata County
Clay & West Cocalico Township, Lancaster County
Heidelberg, South Annville, South Lebanon, South Londonderry & West Cornwall
Townships and Cornwall Borough, Lebanon County
Jackson & Toboyne Townships, Perry County
Fairview Township, York County

Dear Mr. Gordon:

The Department of Environmental Protection (DEP) and the following County Conservation Districts in the South-central Region; Berks, Blair, Cumberland, Dauphin, Huntingdon, Juniata, Lancaster, Lebanon, Perry & York, 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 (PCSM 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 the DEP's 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 should 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 § 102.5(f):
 - 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 an 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 should 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 1 pipeline had several inadvertent returns during the construction process. Provide a list of areas where Mariner East 1 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 should address management of excess drilling mud/liquids that may be encountered at the individual bore pits.
2. Regarding your agency coordination:
- a. Provide PNDI clearances from the PA Game Commission and US Fish and Wildlife Service. 25 Pa Code § 102.6(a)(2)
 - b. Provide proof that you have received clearance for your project from PHMC. Section 508 Pennsylvania History Code
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 timeframe. 25 Pa Code § 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. Please provide details on these travel lanes that includes but is not limited to; cross sectional view, length of time in service, potential impacts, etc. Please 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 § 102.6

5. We have compared the Plans submitted with this application and the Plans submitted with the five Joint Permit Applications regarding consistency between the site plans and Erosion and Sediment Control Plans you have provided. Inconsistencies were noted as follows: 25 Pa Code § 102.6
 - a. Describe the difference between the “Permanent Easement” and “Permanent Right-of-Way” areas that are identified on your plans. This description should 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 should 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 and not prevent 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 (ESG0300015001) and the plans for the Joint Permit Applications will need to be revised to include this information. 25 Pa Code § 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 should be drawn perpendicular to the respective existing and proposed contours. Please justify or amend the plan drawings and calculations

accordingly. 25 Pa Code §§ 102.8(f)(8), 102.8(f)(9), 102.8(g)(3) & 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. Please verify and amend accordingly. 25 Pa Code §§ 102.8(f)(8), 102.8(f)(9), 102.8(g)(3) & 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 should 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 §§ 102.8(f)(8), 102.8(f)(9), 102.8(g)(3) & 102.8(g)(4)
10. For DEP Worksheets 1-5 and the ESCGP-2 application, please amend the following [DEP Application and Worksheets] for all above-ground structures (i.e. valve locations and compressor stations): 25 Pa Code § 102.6
 - a. Please include all causes of impairment for each respective receiving watercourse
 - b. Please verify the receiving watercourse for each valve site's point of interest
 - c. Please verify the approval status of the Act 167 Plan for the watershed of each valve site. Please provide verification that the site addresses the Act 167 Plan requirements
 - d. Please verify the Chapter 93 classification for each respective receiving watercourse
 - e. Please verify the 2-year/24-hour runoff volume to each berm based on the berm's drainage area
 - f. Please 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. Please 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 #10, 90% 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% of the disturbed area at each site (individually) is controlled/managed by a PCSM BMP (e.g. it appears that less than 90% of the disturbed area is being controlled/managed by a PCSM BMP at the Juniata River West Block Valve site). If less than 90% of the disturbed area is being controlled/managed by a PCSM BMP,

then water quality management can be shown through PCSM Standard Worksheets # 12 & 13 (for TSS, TP & NO₃). Make all revisions necessary. 25 Pa Code §§ 102.8(f)(6), 102.8(f)(8), 102.8(g)(2), 102.8(g)(4) & 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.
13. Provide discussion as to why HDD or conventional boring was not utilized to cross all special protection surface waters, as boring could be considered an ABACT E&S BMP (refer to Page 290 of the E&S Manual). For example, it appears that boring could be accomplished at Station 6900+00 (Sheet ES-3.67 for Blair County) for the crossing of Clover Creek (HQ-CWF). 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(6) & 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 §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

General Technical Deficiencies

Notice of Intent (NOI) for Coverage under the Erosion and Sediment Control General Permit (ESCGP-2)

1. 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 §§ 102.8(g)(2) & 102.8(g)(3)). 25 Pa Code § 102.6(a)(1)
2. Section E.5: It appears that there are numerous areas along the pipeline which propose to discharge stormwater to off-site areas other than a surface water. Ensure that this is properly identified throughout the application and all required information is provided. Refer to the attached DEP's *Off-site Discharges of Stormwater Areas That Are Not Surface Waters Fact Sheet* (DEP Document No. 3150-FS-DEP4124). 25 Pa Code §§ 102.4(c), 102.6(1) & 102.8(f)(15)
3. 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 §§ 102.8(g)(2) & 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 § 102.6(a)(1)

4. Section F.3: Ensure that all areas which are required to have a PCSM Plan are properly identified, so that they match with the PCSM Plans. An example provided is the Section identified as UNT to Aughwick Creek; is this the Mount Union Valves site? Make all revisions necessary. 25 Pa Code § 102.6(1)
5. Section F.3 Sherman Creek (POI-1) & UNT to Aughwick Creek: Provide the stormwater discharge rate for the 2-year/24-hour storm event. 25 Pa Code § 102.6(1)
6. Section F.3 UNT to Aughwick Creek: The increase in impervious area is identified as 0.632 ac.; however, PCSM Standard Worksheet #4 for the Mount Union Valves site identifies an increase in impervious area of 0.623 ac. Clarify this discrepancy. 25 Pa Code § 102.6(1)
7. Section F.5: It appears that there are numerous areas which propose to discharge stormwater to off-site areas other than a surface water. Ensure that this is properly identified throughout the application and all required information is provided. Refer to the attached DEP's *Off-site Discharges of Stormwater Areas That Are Not Surface Waters Fact Sheet* (DEP Document No. 3150-FS-DEP4124). 25 Pa Code §§ 102.4(c), 102.6(1) & 102.8(f)(15)
8. Section G: Provide a separate Anti-Degradation Analysis for each discharge to a special protection surface water/watershed. 25 Pa Code § 102.6(1)
9. Section H: It is identified that "Notices of Violations attached in formal application." Clarify the meaning of this statement. The NOI is the formal application for coverage under the

ESCGP-2. Provide the identified information related to Sunoco Pipeline, L.P.'s compliance history. 25 Pa Code § 102.6(1)

10. Attachment 3 Water/Watershed Table: Verify that Hay Creek has a Designated Use of Exceptional Value (EV) and an Existing Use of High Quality (HQ) Cold Water Fishes (CWF). It appears that there are sections of Hay Creek which have different Designated Uses and some sections which have an Existing Use. Properly identify the Designated and Existing Uses of all receiving surface waters, including multiple identifications if the same stream has different Uses throughout. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(v), 102.6(1) & 102.8(f)(5)

11. Attachment 6 Riparian Buffer Waiver Request:

- a. The first sentence on Page 3 is not accurate. Not all areas covered by Chapter 105 are exempted from the riparian/riparian forest buffer regulations; an example where the riparian/riparian forest buffer regulations apply would be where the pipeline/earth disturbance activity is located parallel to the stream and within the floodway. Make all revisions necessary to appropriately identify the areas that require a waiver of the riparian/riparian forest buffer regulations. 25 Pa Code § 102.14(d)
- b. If a waiver is being requested for a riparian forest buffer, then provide a waiver of the riparian forest buffer composition. Identify all areas for a waiver of the riparian forest buffer composition. 25 Pa Code § 102.14(b)(1)
- c. The provided Alternatives Analysis is not sufficient. Provide an Alternative Analysis for each area where the riparian/riparian forest buffer waiver is being requested. 25 Pa Code §§ 102.14(d)(2) & 102.14(d)(3)
- d. Identify the specific manual which is referred to as "PADEP manual" on Page 11 in the Demonstration of Minimizing Impacts section. 25 Pa Code §§ 102.14(d)(2) & 102.14(d)(3)
- e. Table 2 identifies streams which are currently identified as impaired in the 2014 Pennsylvania Integrated Water Quality Monitoring and Assessment Report. Please note that some streams are currently tentatively impaired and may be identified as impaired in the 2016 Pennsylvania Integrated Water Quality Monitoring and Assessment Report. If 2016 Pennsylvania Integrated Water Quality Monitoring and Assessment Report is finalized before permit coverage is authorized for the project, then revise the application accordingly. 25 Pa Code § 102.14(a)(2)

- f. The Riparian Buffer Site Plans are not sufficient. Clearly identify riparian/riparian forest buffer areas to be waived on the plans and identify the top of bank of the stream. Provide these plans at a more legible scale; a scale of 1" = 400' is not sufficient for the riparian/riparian forest buffer waivers. 25 Pa Code §§ 102.14(d)(2) & 102.14(d)(3)

PNDI Coordination/Clearance

1. Identify where on the plans the avoidance and clearance measures are identified for the threatened and endangered species. Provide the avoidance and clearance measures clearly shown and identified on all applicable plans, including notes and locations. 25 Pa Code §§ 102.4(b)(5)(ix), 102.6(a)(2) & 102.8(f)(9)
2. Provide clearance for all threatened and endangered species from all resource agencies. 25 Pa Code § 102.6(a)(2)

Erosion & Sediment Control (E&S) Plan - General Technical Deficiencies

1. The E&S Plan shall be separate from the PCSM Plan. In certain instances the E&S Plan and Site Restoration Plan can be combined; however, this combination has to be clearly identified. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(xiv), 102.8(d) & 102.8(n)
2. Provide the demonstration that the E&S Plan was prepared by a person trained and experienced in E&S control methods and techniques applicable to the size and scope of the project being designed. DEP recommends utilizing Standard E&S Worksheet #22 from the E&S Manual. 25 Pa Code §§ 102.4(b)(4) & 102.11(a)(1)
3. It appears that some of the symbols being used on the plan sheets are the same or too similar to easily distinguish (e.g. LOD and 100 year floodplain, silt sock and silt fence, property line and right of way, etc.). Revise the plan drawings so that the line types are more distinguishable. 25 Pa Code § 102.4(b)(5)(ix)
4. There are numerous instances where symbols are overlapping each other, making it hard to see some of the symbols. Revise the plan drawings so that the symbols are not overlapping. 25 Pa Code § 102.4(b)(5)(ix)
5. Provide the soil type identifications and boundaries on the E&S Plan drawings. Ensure that the soil limitation resolutions are provided. 25 Pa Code §§ 102.4(b)(5)(ii), 102.4(b)(5)(ix) & 102.4(c)

6. Provide additional clarification as to how the project will be accessed throughout the duration of earth disturbance activities (will new temporary access roads be required and removed, will existing access roads require upgrades, how will the mainline be accessed, etc.). Provide all proposed temporary and permanent access roads. Ensure that all earth disturbance activities are included within the limit of disturbance and permit boundary. Ensure that proper BMPs are provided. Clearly identify what is meant by the plan note of "existing road to be used for access no proposed permanent improvements" (i.e. are temporary improvements proposed and if so, what are they). 25 Pa Code §§ 102.4(b)(5)(iii) & 102.4(b)(5)(ix)
7. Verify the reference to the Detail Number and Sheet Shown On for details. There are instances where these do not match from one location to another in a County's plan set. 25 Pa Code § 102.4(b)(5)(ix)
8. Identify the ESCGP-2 Permit Boundary. 25 Pa Code § 102.4(b)(5)(ix)
9. Ensure that all streams, floodways and floodplains have been fully identified in the plan drawings (e.g. Sheet ES-4.02 York County, S-H67). 25 Pa Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
10. Ensure that adequate notes are provided related to the HDD sites. Refer to Pages 284 & 285 of the E&S Manual for guidance on proper notes related to the HDD and those work sites; identify where this information can be found within the E&S Plan. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(ix) & 102.11(a)(1)
11. There are numerous areas throughout the project where a wetland/portion of a wetland is identified as within the limit of disturbance but that the E&S BMPs are not shown at the edge of the limit of disturbance (e.g. WL-BB111 at Station 5764+50 on Sheet ES-3.01 for Blair County). Clarify the proposed disturbance of these wetlands (i.e. are these wetlands to be disturbed or not). Provide a detail for the installation of the orange construction fence. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
12. For the stream and wetland crossings, provide specific site details as to how each crossing will be accomplished. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi), 102.4(b)(5)(vii) & 102.4(b)(5)(ix)
13. The following technical deficiencies are associated with the construction sequence: 25 Pa Code § 102.4(b)(5)(vii)
 - a. Provide information for the clearing and grubbing, grading and pipeline trench excavation.

- b. Provide measures for how to relieve the compaction for the areas to be restored (e.g. the pullback areas, access routes, pipeline backfill, etc.).
- c. Provide for the restoration of the riparian forest buffer shown on the plan drawings.
- d. Provide for the field marking of the wetlands.
- e. Ensure that a construction sequence is provided for all block valve sites, permanent access roads and temporary access roads. In these construction sequences provide for the installation/construction of the PCSM BMPs.
- f. Provide for the maintenance of the waterbars during the periods of time where the pipe trench is open.
- g. Stage 1 identifies that “Appropriately sized silt fence is an approved alternative in areas that are not special protection watersheds.” Identify how the proper sizing will be determined, as no sizing information was provided in the E&S Plan narrative and/or drawings. Provide the sizing calculations and design, if silt fence is to be an approved alternative. Provide a note that identifies the appropriate county conservation district and DEP have to approve any deviation to the authorized plans. 25 Pa Code § 102.4(b)(5)(viii)
- h. Identify the location of the Access Road Summary Table referenced in Stage 3.
- i. Provide for the waterbars and approved interceptor dykes in Stage 5 to be installed at the end of each work day and not “as needed based on installation rate and weather conditions.”
- j. Verify that the reference to the Sheet location for the compost filter sock sizing and spacing chart is correct for all Counties in Stage 6.
- k. Stage 7 identifies to strip topsoil where required. Clearly identify which areas will have the topsoil stripped and stockpiled separately (segregated topsoil).
- l. It appears that Stages 5 & 7 are out of sequence. Clarify this discrepancy.
- m. Stage 8 identifies to “minimize total area of disturbance”; clearly provide how the contractor is to minimize the total area of disturbance.
- n. Provide topsoil to be placed over all disturbed areas in Stage 9.

- o. It appears that Stages 9 & 10 are out of sequence. Clarify this discrepancy.
 - p. Verify that the reference to the Sheet location for the trench plug detail is correct for all Counties in Stage 10.
 - q. Verify that the reference to the Sheet location for the waterbar detail is correct for all Counties in Stage 11.
 - r. Revise Stage 14 to be "uniform 70% perennial vegetative cover".
14. Revise Standard Erosion and Sediment Control Plan Note 26 such that upon temporary cessation of an earth disturbance activity or any stage or phase of an activity where cessation of earth disturbance activities in non-special protection watersheds will exceed 4 days, the site shall be immediately seeded, mulched, or otherwise protected from accelerated erosion and sedimentation pending future earth disturbance activities and in special protection watersheds temporary stabilization shall be immediate. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(6) & 102.22(b)(1)
15. Clearly identify the length of time required to excavate the trench, install the pipe, backfill the trench and begin stabilization of the disturbed areas. Page 283 of the E&S Manual identifies this length of time as not to exceed 30 calendar days for most installations, and that long time periods may be approved on a case-by-case basis. Clearly identify any areas that may exceed 30 calendar days and provide sufficient justification for the extended time period. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(6), 102.11(a)(1) & 102.11(b)
16. Revise Standard Erosion and Sediment Control Plan Note 25 to identify slopes of 3:1 or greater and all areas, regardless of slope, within 100 ft. of a special protection surface water to be blanketed with erosion control matting (per the recommendations on Page 273 of the E&S Manual). Ensure consistency between Standard Erosion and Sediment Control Plan Note 25 & 35 and Construction Sequence Stage 12. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(6) & 102.11(a)(1)
17. Identify if pumped water filter bags will be used during boring activities. If so, provide the location of the bags on the plan sheets. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
18. Pumped water filter bags alone are not rated as an antidegradation best available combination of technologies (ABACT) BMP. Surrounding the pump water filter bag with a compost sock ring or by using the pumped water filter bag in conjunction with a sumped pit will elevate the pump water filter bag to an ABACT rating (per Page 53 of the E&S Manual). Clearly identify on the plan drawings or clearly in the detail (ensuring that proper additional details

are provided) the measures to ensure that pumped water filter bags for discharges to special protection surface waters will achieve an ABACT rating. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(ix), 102.4(b)(6) & 102.11(a)(1)

19. Ensure that all county references are correct (e.g. Notes for Site Restoration Note 2 on Sheet ES-0.02 for Lebanon County references Lancaster County, Sheet ES-0.06 for Lebanon County references Washington County Limit of Disturbance, etc.). 25 Pa Code § 102.4(b)(5)(ix)
20. Provide the waterbars on the plan drawings at the stream and wetland crossings, as identified in the Timber Mat Crossing Detail. 25 Pa Code §§ 102.4(b)(5)(iii) & 102.4(b)(5)(ix)
21. The waterbars shown on the Timber Mat Crossing Detail are not shown on the plan view and are not identified to discharge to sediment control BMPs. Clarify these discrepancies. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
22. Provide a detail for the J-hooks at the end of a waterbar. Provide the demonstration that the designed J-hooks will function adequately and appropriately to manage the erosion and sedimentation from the runoff. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(viii), 102.4(b)(5)(ix) & 102.4(c)
23. Identify/distinguish which waterbars are temporary versus permanent on the plan drawing. 25 Pa Code §§ 102.4(b)(5)(iii) & 102.4(b)(5)(ix)
24. Provide for surface roughening, as recommended on Page 260 of the E&S Manual. If surface roughening is not proposed, then provide the alternative BMP and design standard demonstration. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(ix), 102.4(b)(6), 102.11(a)(1) & 102.11(b)
25. Identify the type of erosion control blanket/matting to be used and for which conditions. Provide the staple pattern details for the erosion control blanket installations. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
26. Note 3 on the plan view drawings identifies that "BMP installation to be adjusted as needed..."; however, it is not clear who is to be determining the adjustment(s). Properly identify who will make the determination of adjusting the BMPs. A deviation from the authorized plans may be necessary; however, the appropriate county conservation district and DEP have to approve any deviation to the authorized plans. Make all revisions necessary to clearly identify this requirement. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

27. Provide discussion related to the timing of the sequence of construction, including how runoff will be properly managed from when the trench backfill is complete to the installation of the waterbars and permanent stabilization. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi) & 102.4(b)(5)(vii)
28. The Right-Of-Way Detail (e.g. Sheet ES-0.08 for Blair County) shows compost filter sock running parallel with edge of the right-of-way; which is inconsistent with the plan drawings. Provide a note with this detail that compost filter sock should be installed parallel with existing contours and as shown on the plan drawings. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
29. Provide additional information in the Right-Of-Way Detail, which identifies the approx. depth of existing topsoil and the amount of topsoil to be placed at the surface during the trench backfill operations. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
30. The Bank Restoration Detail (e.g. Sheet ES-0.10 for Blair County) shows the use of erosion control blanket and native plantings. Identify the type of erosion control blanket and the native plantings to be used. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
31. Provide a note on the E&S Plan that identifies no soil amendments (lime, fertilizer, etc.) are to be used in wetland areas (refer to Page 265 of the E&S Manual). 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(ix) & 102.11(a)(1)
32. Identify/label the compost filter socks in the plan view drawings, so that the sizing can be verified with Standard E&S Worksheet #11. On all plan view drawings, ensure that all sediment barriers (compost filter socks, silt fences, etc.) are shown with the ends turned upslope at 45 degrees to the main barrier alignment for a distance sufficient to elevate the bottom of the barrier ends to the elevation of the top of the barrier at the lowest point. 25 Pa Code § 102.4(b)(5)(ix)
33. Spot checks at several locations found that a number of maximum slope lengths appear to have been exceeded for the proposed compost filter socks (e.g. Socks #7, 8, 24, 27, 29, 32, and 49 for Lancaster County). Ensure that the compost filter socks are sized according to the maximum slope length above the sock, not just the disturbed area above the sock, as identified in the E&S Manual. If the recommended maximum slope length from the E&S Manual is exceeded, then a demonstration of alternative BMP and design standard must be provided. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(viii), 102.4(b)(5)(ix), 102.11(a)(1) & 102.11(b)

34. The compost standards identified in Table 4.2 in Attachment 4 of the E&S Plan narrative are not correct. Per the Corrections For Erosion And Sediment Pollution Control Program Manual TGN 363-2134-008 Mach 2012, the following are the correct compost standards:
- Organic Matter Content: 25% - 100% (dry weight basis)
 - Organic Portion: Fibrous and elongate
 - pH: 5.5 - 8.5
 - Moisture Content: 30% - 60%
 - Particle Size: 30% - 50% pass through 3/8" sieve
 - Soluble Salt Concentration: 5.0 dS/m (mmhos/cm) Maximum.
- Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(ix) & 102.11(a)(1)
35. Provide Table 4.1 (from Page 63 of the E&S Manual) and the corrected Table 4.2 (from the E&S Manual and Corrections For Erosion And Sediment Pollution Control Program Manual TGN 363-2134-008 Mach 2012) on the plan drawing sheet with the Compost Filter Sock detail. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
36. Provide each HDD location's staging areas, including contours (if grading is to be accomplished), stockpile locations (if necessary), etc. Provide a demonstration that perimeter controls are sufficient for these large areas and that other E&S BMPs, such as sediment basins, sediment traps, etc., will not be required to properly manage the runoff. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
37. 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 §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
38. The Standard Construction Detail #13-4 in Attachment 4 of the E&S Plan narrative and the Trench Plug Installation detail (e.g. Sheet ES-0.10 for Blair County) are not correct. The Standard Construction Detail #13-4 from the E&S Manual was revised per the Corrections For Erosion And Sediment Pollution Control Program Manual TGN 363-2134-008 Mach 2012, to identify the trench plugs extending to the trench bottom (as opposed to the bottom of the pipe). If an alternative BMP and design standard will be used for trench plugs, then that demonstration shall be provided. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(ix), 102.11(a)(1) & 102.11(b)
39. Ensure the entire length of a surface water (and any adjacent features) is shown within the Permit Boundary. It appears that only sections of streams are shown that start/stop in the middle of the right-of-way. If the streams are shown correctly, then provide a narrative discussion identifying these features. 25 Pa Code § 102.4(b)(5)(v) & 102.4(b)(5)(ix)

40. Provide discussion as to why HDD or conventional boring was not utilized to cross all special protection surface waters, as boring could be considered an ABACT E&S BMP (refer to Page 290 of the E&S Manual). It appears that boring could be accomplished at Station 6900+00 (Sheet ES-3.67 for Blair County) for the crossing of Clover Creek (HQ-CWF). 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(6) & 102.11(a)(1)
41. Provide additional information related to the geotextile (e.g. type, strength, etc.) identified to be used under the timber mats in the Timber Mat Detail (e.g. Sheet ES-0.09 for Blair County) 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
42. It appears that the temporary seeding information is not consistent between the narrative and the plan drawings. Clarify this discrepancy. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
43. The existing riparian forest buffers do not appear to be shown correctly. For example, the existing riparian forest buffer identified for Stream S-196 on Sheet ES-3.03 for Blair County is shown to be approx. 100 ft. wide. Riparian forest buffers are 150 ft. in width. Identify the full riparian forest buffer. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(ix) & 102.4(b)(5)(xv)
44. If any soil stockpiles are needed due to the installation of the rock construction entrances, then provide/identify those stockpiles on the plan view drawings. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
45. Compost sock sediment traps are shown to be utilized (e.g. approx. Station 7662+00 on Sheet ES-3.39 for Huntingdon County); however, the sizing calculations could not be located in the E&S Plan narrative. Provide the sizing calculations for all compost sock sediment traps. 25 Pa Code §§ 102.4(b)(5)(viii) & 102.4(b)(5)(ix)
46. Provide the proposed grading for all proposed features (including the infiltration berms for the valve sites, stations, etc.). 25 Pa Code §§ 102.4(b)(5)(iii) & 102.4(b)(5)(ix)
47. The following technical deficiencies are related to the restoration activities during the earth disturbance activities:
 - a. Provide more identification in the narratives and on the plan drawings related to topsoil segregation. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
 - b. 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 §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

- c. 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 §§ 102.4(b)(4) & 102.22
 - d. Describe how your planning and design requirements satisfy 25 Pa Code § 102.4(b)(4) 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.
48. Clarify if the dual pipelines will be constructed within the same trench or if two trenches will be excavated. If the dual pipelines will be installed within the same trench, then provide the trench plugs for each pipeline at the same location/Station (not at different locations/Stations; e.g. Station 13289+50 on Sheet ES-1.05 for Berks County and Station 13314+50 on Sheet ES-1.06 for Berks County). Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
49. Ensure that all earth disturbances are properly identified and included within the limit of disturbance and the Permit Boundary. Describe the installation/construction for the test water source piping, the construction of the test water source pump pad, installation of culvert to cross railroad tracks, etc. (e.g. Sheets ES-4.03 & 4.04 for Dauphin County). If earth disturbance is proposed, then provide the appropriate E&S BMPs and all necessary plan information. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi), 102.4(b)(5)(vii), 102.4(b)(5)(ix) & 102.4(b)(5)(x)
50. Provide specific E&S BMPs for each stream and wetland crossing. It is recommended that a blow-up of each specific stream and wetland crossing be provided, which clearly illustrates all E&S BMPs. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
51. If trench plugs will be utilized at the boring locations, then the trench plugs shall be shown on Bore Crossing in the Typical Stream Crossing detail (e.g. Sheet ES-0.09 for Blair County). Provide a typical wetland crossing detail, which is similar to the Typical Stream Crossing detail (e.g. Sheet ES-0.09 for Blair County). 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
52. Ensure that all ATWS locations are properly identified and that the E&S Plan includes the duration of proposed activities, the expected layout, E&S BMPs, and size or quantity of materials or structures proposed. 25 Pa. Code § 102.4(b)(5)(ix)

53. The site plan sheets from the Chapter 105 permit applications and E&S Plan sheets identify the floodway which appear to be measured from the centerline of the stream as opposed to the top of bank for the 50-foot assumed floodway boundary. Provide floodway boundaries on all plan drawings that adhere to the definitions in Chapter 105 by providing the FEMA mapped floodway boundary, in areas absent a FEMA mapped floodway, the floodway boundary measured 50 feet landward from the top of bank, or in areas absent a FEMA mapped floodway a floodway boundary with evidence provided that the assumed 50 feet floodway is not accurate. 25 Pa. Code §§ 102.4(b)(5)(ix) & 105.1
54. The Typical Wetland Crossing detail on the E&S Plan indicates soil will be stockpiled in the wetland along the trench. Revise the detail to include a means of separating the stockpiled soil from the wetlands, such as geo-fabric and matting, to ensure full removal of the stockpiled soil and minimize impacts. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
55. The typical wetland crossing details shown on the E&S Plans indicates Trench Breakers are to be installed in the trench in the wetlands; however it is not clear what Trench Breakers are or if Trench Plugs are what is meant. Revise this detail to identify if Trench Plugs are meant by this term or provide a detail for trench breakers. In addition, if trench plugs are proposed to maintain wetland hydrology, revise the detail to include trench plugs within the wetland for long wetland crossings and specify the distance increments. Furthermore, the E&S Plan drawings depict trench plugs which are inconsistent with the detail. Revise the site plans to be consistent with the detail. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
56. The Typical Wetland Crossing detail on the E&S Plan states that the detail does not apply to active cultivated or rotated cropland. Revise the detail to apply to all wetland crossings or provide a separate detail for wetland crossings in active cropland. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
57. The Mitigation Plan (from the Chapter 105 permit application) states that the excavated stream banks will be reseeded; however, the E&S Plan's detail for bank restoration does not indicate this. Revise the Bank Restoration Detail to be consistent and include the native seeding mixture to be utilized. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
58. The E&S Plan details for temporary stream crossings and plan drawings state timber mats or temporary equipment bridge may be utilized but only depicts a timber mat bridge. Provide details for the proposed temporary equipment bridge(s) which depict the size, shape, and span of the structure. Provide separate details depicting the timber mat and other bridge structure crossing's cross sections. In addition, revise the E&S Plan and/or other plan drawings to identify the method of each temporary stream crossing proposed at each location. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

59. Revise the E&S Plan to include all avoidance and minimization measures for identified species of concern associated with water obstructions and encroachments from the Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission, Pennsylvania Department of Conservation and Natural Resources, and the U.S. Fish and Wildlife Service. Ensure any seed mixtures, matting, or other specified items are included in the plans and/or E&S plans. In addition, revise the Environmental Assessment to discuss the avoidance and minimization measures and clearances received. 25 Pa. Code §§ 102.6(a)(2) & 102.4(b)(5)(ix)
60. Section 2.2.2.1 of the Mitigation Plan (from the Chapter 105 permit application) identifies that wetlands will be reseeded with a native wetland seed mixture; however, the mixture is not specified nor is it proposed on the plans. Revise the application to identify the seed mixture to be used and revise the E&S Plans to indicate its use for wetland restoration in the Typical Wetland Restoration detail. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
61. Trench plugs are proposed to be located at wetland/upland interfaces. Additional trench plugs may be necessary along the length of the crossing due to the length and/or slope to maintain hydrology throughout the wetland. Review and revise the application and plans accordingly. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
62. Temporary road stream crossing details utilizing culverts are provided on E&S Plans ES-0.09 and ES-0.11 (e.g. from Blair County); however, the E&S Plans and impact plans (from the Chapter 105 permit application) do not identify that any of these crossings are to be used. Revise the E&S Plans to remove these proposed crossing methods if not proposed to be utilized, or identify where the proposed crossing methods will be utilized. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

E&S Plan – Berks County Technical Deficiencies

1. Exceptional Value (EV) wetlands include wetlands that are located in or along the floodplain of a reach of a wild trout stream or waters listed as exceptional value under Chapter 93 (relating to water quality) and the floodplain of streams tributary thereto. It appears that the following wetlands are EV: Wetlands WL-B22, B24, B26, B27, B29, B33, B34, B38, B41, B42, B43, B44, B45, B46, B49, C1, C3, C5, C6, C7, C8, C12, C13, C14, BB133, W48, AM2, H14, H18, H19 H21, H22, 301 & Q80. Clearly identify the receiving surface waters, including EV wetlands. Provide an antidegradation analysis for all discharges to special protection surface waters, including the use of ABACT BMPs. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(v), 102.4(b)(5)(ix), 102.4(b) & 105.17(1)(iii)
2. Revise Note 2 on Sheet ES-0.02 to properly identify that this portion of the project takes place in Berks County, not Lancaster County. 25 Pa Code § 102.4(b)(5)(ix)

3. Compost filter socks shown on Sheet ES-1.15 along the proposed access drive for the Montello Block Valve Station are not shown parallel to existing contour. As with other sediment barriers, compost filter socks should be placed parallel to contour with both ends of the sock extended upslope at a 45 degree angle to the rest of the sock to prevent end-around flows (refer to Page 62 of the E&S Manual). Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(ix) & 102.11(a)(1)
4. It appears that the fill slopes at the Montello Block Valve Site (along access drive; Sheet ES-1.15)) and cut and fill slopes at the Wyomissing Block Valve Site (around pad area; Sheet ES-1.35) are steeper than 3:1. Clarify why these areas are not shown to receive erosion control blanketing (as other areas on the plan drawings clearly identify where erosion control blanketing is required). Show the extent of all erosion control blanketing on the plan drawings. 25 Pa Code § 102.4(b)(5)(ix)
5. ATWS on Sheet 1 of Tab 7A in the floodplain and floodway of Stream S-B16 (from the Chapter 105 permit application) is designated for spoil; however, a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to the stream. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
6. ATWS on Sheet 31 of Tab 7A in the floodway of Stream S-H21 (from the Chapter 105 permit application) is designated for spoil; however, a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to the stream. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
7. ATWS on Sheet 17 of Tab 7A in the floodway of Stream S-B31 (from the Chapter 105 permit application) are designated for spoil; however, a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to the stream. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
8. ATWS on Sheet 35 of Tab 7A in the floodway of Streams S-Q90 and S-Q89 (from the Chapter 105 permit application) are designated for spoil; however, a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to the stream. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

9. The Impact Plan drawings and Table 3 of Tab 11 (from the Chapter 105 permit application) identify the corresponding E&S Plan sheets incorrectly. Revise the plan drawings and table to be accurate. 25 Pa. Code § 102.4(b)(5)(ix)
10. The E&S Plan drawings do not depict the proposed temporary timber mats crossing the wetlands; they only depict them up to the wetland boundary. Revise the E&S Plan drawings to depict the temporary matting crossing the wetland. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
11. The Auger Bore Drawing, PA-BR-0060.0000-RD (from the Chapter 105 permit application), depicts the auger bore pits in different locations than the E&S Plan drawing ES-1.21. In addition, the Auger Bore plan depicts temporary workspace in stream S-C33 and wetland C13 which are not depicted on the E&S Plan. Revise the application to contain consistent and accurate plans. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
12. Wetland BB42 is not identified on the impact table or site plans to be impacted; however, E&S Plan drawing ES-1.74 depicts proposed impacts to this wetland. Revise this E&S Plan drawing to be accurate and consistent with the remainder of the application. 25 Pa. Code § 102.4(b)(5)(ix)
13. Provide a site specific plan drawing and cross section drawing for stream S-B31 which depicts at a minimum: the stream banks, bore pit locations, travel lanes, proposed pipelines, depth of the proposed pipelines beneath the stream, and stream bed. In addition, E&S Plan drawing ES-1.30 depicts the proposed bore pit within the stream which is inconsistent with the site plan drawings (from the Chapter permit application). Revise the E&S Plan to be consistent with the site plan drawing. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
14. The plan site plan drawing (from the Chapter 105 permit application) indicates that stream S-BB34 will utilize an existing bridge. However, the E&S Plan drawing ES-1.33 depicts placing timber matting over the bridge. If a temporary structure is proposed over the existing bridge, provide site specific plans and a cross section depicting the proposed temporary structure. If only the existing bridge is proposed to be utilized, revise the E&S Plan drawing accordingly, and revise the impact table to accurately depict that no temporary impacts are proposed to the stream. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
15. The Auger Bore drawing PPP-BR-0132.0000-RD (from the Chapter 105 permit application) depicts the auger bore pit west of wetland B31. However, the E&S Plan drawing ES-1.44 and the site specific plan drawing B29-B31-C-101 (from the Chapter 105 permit application)

depict it located within wetland B31. Revise the E&S Plan drawing to accurately depict the auger bore pit west of this wetland and be consistent with the impact table and other plan drawings. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

16. The E&S Plan drawing ES-1.51 depicts the proposed auger bore pit within stream S-C107; however, the impact table and other plan drawings (from the Chapter 105 permit application) depict this pit east of this stream. Revise the E&S Plan to accurately identify the location of the auger bore pit east of the stream to avoid and minimize impacts. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
17. Provide profiles for the temporary crossings identified in the E&S Plan that depict at a minimum the existing conditions and the proposed conditions, and provide information regarding the length of time that all temporary crossings will be in place. Some of the plans appear to use unnatural stream contours upon restoration. Identify the aggregate and the typical timber mat crossing being used. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

E&S Plan - Beckersville Pump Station Technical Deficiencies

1. The construction sequence proposes the installation of Detention Basin 2 prior to permanent stabilization of all upslope drainage areas. However, it appears as though it may be necessary to design Basin 2 as a sediment control facility during construction. Provide discussion demonstrating that a large sediment control facility is not required at this location. Provide instructions for conversion to a PCSM Detention Basin once all upslope drainage areas have been permanently stabilized. Refer to Chapters 7 and 8 of the E&S Manual for design criteria and construction details for applicable sediment control facilities. Provide all calculations, DEP recommends utilizing Standard E&S Worksheets from Appendix B of the E&S Manual. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(vii), 102.4(b)(5)(viii), 102.4(b)(5)(ix) & 102.11(a)(1)
2. Provide calculations for the emergency spillway for the proposed Infiltration Berm. Identify appropriate protective spillway lining on plan drawings and detail sheets. Refer to Pages 192-199 of the E&S Manual for guidance. § 102.4(b)(viii), §102.4(b)(5)(ix) & §102.11(a)(1)
3. Provide calculations for the energy dissipater (R-4 riprap) proposed at the emergency spillway of Basin 2. Refer to Chapter 9 of the E&S Manual for guidance. 25 Pa Code §§ 102.4(b)(5)(viii) & 102.11(a)(1)
4. Plan drawings indicate the grading of a channel parallel to the access drive, terminating at proposed HW-1. Label the channel on plan drawings and provide all applicable construction details. Provide all applicable calculations (channel bed slopes may not be averaged (see Item 3 on Page 129 of the E&S Manual), DEP recommends utilizing Standard E&S Worksheet

#11 in Appendix B of the E&S Manual. 25 Pa Code §§ 102.4(b)(5)(viii), 102.4(b)(5)(ix) & 102.11(a)(1)

E&S Plan – Blair County Technical Deficiencies

1. A UNT to Dry Run (S-KP2) is identified on Sheet ES-3.17; provide the associated floodway with this stream. Also, identify what the heavy solid line represents shown across the existing access road near S-KP2. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v) & 102.4(b)(5)(ix)
2. Provide a clarification for the disturbance (clearing, grubbing & restoration, etc.) proposed for the right-of-way for the area of the horizontal directional drill from Station 6127+50 to 6147+00 on Sheets ES-3.22 & 3.23. 25 Pa Code §§ 102.4(b)(5)(iii) & 102.4(b)(5)(ix)
3. Ensure that all bore pits are identified on the plan drawings (e.g. Stations 6479+00 & 6481+50 on Sheet ES-3.42). Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(viii) & 102.4(b)(5)(ix)
4. The E&S Plan and Impact/Subtraction plan (from the Chapter 105 permit application) depict the Blair/Cambria county boundary west of wetland L70 while the Impact and Aquatic Resource Delineation plans (from the Chapter 105 permit application) depict the county boundary within wetland L70. The E&S Plan drawings identify that a temporary impact to wetland Q51 will occur in Blair County. However, all other plan sheets depict this wetland to be in Cambria County. Revise and clarify the plan drawings, impact tables, impact calculations, etc. to accurately reflect the county boundary and the impacts to wetlands L70 and Q51 within Blair County. In addition, it is recommended that the Cambria County application be evaluated and revised for consistency as necessary. 25 Pa. Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
5. The E&S Plan and Impact plan drawings (from the Chapter 105 permit application) depict additional wetlands north of Stream S-L94 which are not depicted on the Aquatic Resource Delineation plan drawings (from the Chapter 105 permit application). Revise the aquatic resource delineation to delineate and provide data sheets for this wetland. 25 Pa. Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
6. Revise E&S Plan drawing ES-3.21 to accurately depict the wetland M-49 boundary, consistent with the delineation and other plan drawings (from the Chapter 105 permit application). 25 Pa. Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
7. Wetland W-L59 is identified on the impact plan drawings and impact table from the Chapter 105 permit application) as having a temporary crossing impact with temporary matting.

However, the E&S Plan sheet ES-3.34 does not depict impacts to this wetland. Revise the application documents to be consistent and avoid and minimize impacts to the extent practicable. 25 Pa. Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)

8. The E&S Plan drawing ES-3.34 labels streams S-L80 and S-L79 differently than the rest of the application and it does not identify how any of these streams will be crossed. It is unclear if an existing culvert may or may not be present. Revise the application to identify these streams accurately and consistently and identify the stream crossing method. Alternatively, if an existing culvert or obstruction is to be utilized, revise the application to clearly identify this. 25 Pa. Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
9. Wetlands W-BB107 & W-BB108 are proposed to be temporarily impacted with timber matting; however, the E&S Plan sheet ES-3.42 does not depict temporary matting to be used. Revise the E&S Plan drawing to depict the temporary matting for the proposed temporary impacts. 25 Pa. Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
10. For wetland BB124, the impact plan sheet 28 (from the Chapter 105 permit application) is inconsistent with the E&S Plan drawing ES-3.44 and the site specific drawing (from the Chapter 105 permit application). Make all revisions necessary to accurately delineate the ATWS for the pipe pull back area and to depict the proposed temporary workspace in the wetland along the proposed ROW. 25 Pa. Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
11. For wetland BB124, the E&S Plan sheet ES-3.44 is not consistent with the site specific drawing (from the Chapter 105 permit application) for this area. The timber mat placement along the ROW is inconsistent and the timber mat placement in the ATWS for the pipe pull back area is inconsistent. Revise the E&S Plan to be accurate and consistent with the extent and nature of the proposed permanent and temporary impacts. 25 Pa. Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
12. Revise the application to clarify how trench plugs are to be installed along the bore path for stream S-L75 as depicted on E&S Plan ES-3.46. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
13. The site specific plan drawing (from the Chapter 105 permit application), S-L72-S-BB96-C-101, is not consistent with the proposed impacts on the E&S Plan drawings ES-3.46 & ES-3.47. Revise the E&S Plan drawings to be consistent and accurate in depicting the proposed impacts. 25 Pa. Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
14. Revise E&S plan sheet ES-3.51 to identify the floodway boundary of stream S-M31. 25 Pa. Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)

15. Plan sheet 34 (from the Chapter 105 permit application) depicts stream S-M38 as being crossed by HDD and open cut in the floodway. Table 3 (from the Chapter 105 permit application) and E&S Plan drawing ES-3.53 depict the floodway being entirely crossed by HDD. Revise the applications to be consistent and accurate. 25 Pa. Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
16. The E&S Plan drawings ES-3.74 through ES-3.76 indicate no improvements are proposed to the road for the resource crossings. However, the impact plan drawings and impact tables (from the Chapter 105 permit application) indicate temporary crossings and bridges are proposed. Revise the application accordingly to be accurate. If temporary crossings are proposed, revise the E&S Plan drawings to depict the impacts. 25 Pa. Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
17. The proposed temporary access road depicted on plan sheets 34 through 39 (from the Chapter 105 permit application) deviates from the visible gravel road on the aerial photography, and appears to differ than the path on the E&S Plan drawings. Revise the application materials to be consistent and accurate. 25 Pa. Code § 102.4(b)(5)(ix)
18. The site specific Bore Plan (from the Chapter 105 permit application) for wetland M35 depicts temporary workspaces inside the wetland. However, the site plan drawing (from the Chapter 105 permit application) and E&S Plan drawing do not depict any workspaces in the wetland. Make all revisions necessary for consistency and depict the proposed bore pits, trench plugs, and other proposed work. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
19. The ATWS area in the floodways of Streams S-L75 and S-L76 on Sheets 29 and 30 of Tab 7A (from the Chapter 105 permit application) is designated for spoil; however, a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to the stream. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
20. The ATWS area in the floodway of Stream S-M32 Sheet 33 of Tab 7A (from the Chapter 105 permit application) is designated for spoil; however a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to the stream. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

E&S Plan – Cumberland County Technical Deficiencies

1. Provide additional discussion related to how the runoff will be properly managed from Station 9154+00 to 9173+00 (Sheets ES-4.01 and ES-4.02). The slope of the 1900 If run is

- 38%, and the disturbance is approximately 4.5 acres. Identify how runoff will be properly controlled during the initial clearing, grubbing and grading stages. The plan is proposing water bars and silt socks to be installed across the slope at regular intervals. Identify how the runoff will reach the silt socks with the trenches open. Identify how the water bars will be maintained while the pipe is being prepared for installation. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(ix) & 102.4(b)(5)(x)
2. ATWS in the floodplain and floodway of Stream S-I69 on Sheet 21 of Tab 7A (from the Chapter 105 permit application) is designated for spoil; however, the spoil location in conjunction with E&S controls is not provided. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to the stream. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
 3. Upland ATWS on Sheet 23 of Tab 7A (from the Chapter 105 permit application) does not have associated E&S measures. Ensure that the E&S Plan demonstrates proper measures to minimize accelerated erosion to protect surface waters. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
 4. ATWS on Sheet 27 of Tab 7A (from the Chapter 105 permit application) is designated for spoil; however, a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize accelerated erosion to protect surface waters. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
 5. The plans (from the Chapter 105 permit application) indicate that Streams S-J43, S-K4, S-K2, S-K1, S-I75, S-I76, S-I65, S-I59, S-J13, S-H70, S-BB40, and S-H69 flow in and along and under the ROW and proposed pipelines and not across and immediately through them. The plan provided for S-K4 in Tab 7D (from the Chapter 105 permit application) do not adequately depict the existing or proposed conditions upon stream restoration or excavation limits. The E&S Plan does not provide sufficient detail on the stream limits, banks, excavation limits, etc. Provide site-specific plans, cross sections, and profiles that adequately depict the existing and proposed conditions, stream bed, stream banks, limits of excavation, and methods for the stream restorations. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
 6. The ATWS area in the floodways of Streams S-M21 and S-BB98 on Sheet 23 of Tab 7A (from the Chapter 105 permit application) are designated for spoil; however a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to streams. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

7. The impact plans (from the Chapter 105 permit application) and E&S Plan drawings do not depict what impacts are proposed to Pond-J4. The E&S Plan sheet ES-4.04 depicts that timber mats end prior to the pond, and that the pond may need to be partially impacted by temporary a temporary crossing(s). Revise the plans to clearly depict the proposed impacts. 25 Pa. Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
8. E&S Plan drawing ES-4.51 does not depict any water obstructions or encroachments in the stream S-I85 in this temporary ROW. Ensure that all activities are properly identified on the E&S Plan. 25 Pa. Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v) & 102.4(b)(5)(ix)
9. The site plans indicate that wetland W177 and stream S-BB120 (from the Chapter 105 permit application) will be open cut to install the pipelines and not installed by HDD. However, the E&S Plan sheets ES-3.21 and ES-3.22 indicate the stream and wetland have the pipelines installed by HDD. In addition site specific HDD plans are provided for this area. Revise the application to be accurate and consistent in what the proposed impacts. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
10. Revise all plan drawings to include the FEMA floodplain boundary in the area of E&S Plan sheet ES-4.27 and wetland BB151. 25 Pa. Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
11. The wetland delineation for wetland BB151 (from the Chapter 105 permit application) appears that it may be inconsistent with the wetland delineation for Sunoco's Mariner East I 8-inch integrity repair project. Revise the wetland delineation to compare and explain any inconsistencies. In addition, identify any access roads which were installed in wetlands for this repair project. The E&S Plan drawing E&S-4.27 indicates that there are no proposed improvements to the existing road; therefore, clarify if road improvements made under the Mariner East I 8-inch Integrity Repair project are remaining in place. 25 Pa. Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
12. The E&S Plan sheet ES-4.27 states that no improvements are proposed to the existing access road which crosses wetland BB151; however, the site plan drawings and impact table (from the Chapter 105 permit application) indicate temporary matting will be utilized. Revise the application to be accurate and consistent. 25 Pa. Code § 102.4(b)(5)(ix)
13. Revise the site plan E&S Plan drawing ES-4.33 to accurately depict the stream banks of stream S-I69. The Chapter 105 permit application states the stream has a bank-to-bank width of 10 feet and flows at the edge of wetland I41. Therefore, it appears additional temporary bridges will be necessary for construction. Revise the application accordingly to depict all proposed stream crossings. 25 Pa. Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

14. The ATWS is proposed in stream S-I59 on E&S Plan sheet ES-4.43; however, no temporary impacts are proposed on the site plan drawing, sheet 27 (from the Chapter 105 permit application), or the impact table (from the Chapter 105 permit application). Revise the E&S Plan drawing to be consistent and accurate. 25 Pa. Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
15. E&S Plan sheet ES-4.47 depicts the proposed pipelines in different locations than the trench plugs' locations. Revise the application plan drawings to be accurate and consistent. 25 Pa. Code § 102.4(b)(5)(ix)
16. E&S Plan sheet ES-4.54 does not depict any temporary timber mat crossings of wetland K41. It is unclear if all of this wetland within the proposed ROW will be excavated, or if some of it will also be crossed using timber mats. Revise the application plan drawings for this wetland to depict the proposed water obstructions and encroachments. 25 Pa. Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
17. Revise E&S Plan drawing ES-4.6 to depict the stream banks of stream S-BB83 and depict the proposed temporary crossing of this stream and wetland KP2. 25 Pa. Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
18. E&S Plan sheet ES-4.91 does not depict any temporary timber mat crossings of wetland BB44. It is unclear if all of this wetland within the proposed ROW will be excavated, or if some of it will also be crossed using timber mats. Revise the application plan drawings for this wetland to depict the proposed water obstructions and encroachments. 25 Pa. Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
19. Provide profiles for the temporary crossings identified in the E&S Plan that depict at a minimum the existing conditions and the proposed conditions. Identify the aggregate and the typical timber mat crossings being used. 25 Pa. Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

E&S Plan – Dauphin County Technical Deficiencies

1. There are several instances on Sheet ES-4.17 where the compost filter sock is show not parallel to the contour and where it is shown across an area of concentrated flow. Revise the placement of the compost filter sock as necessary. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

E&S Plan - Middletown Station Technical Deficiencies

1. Provide an appropriate and adequate sequence of construction for this specific site; including from initial earth disturbance, through the placement of PCSM BMPs to final/permanent stabilization. 25 Pa Code § 102.4.(b)(5)(vii)
2. Three sections of the 24-in compost filter sock along the northwest limit of disturbance appear to have maximum slope lengths that exceed the proposed compost filter socks size. Ensure that the compost filter socks are sized according to the maximum slope length above the sock, not just the disturbed area above the sock, as identified in the E&S Manual. If the recommended maximum slope length from the E&S Manual is exceeded, then a demonstration of alternative BMP and design standard shall be provided. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(viii), 102.4(b)(5)(ix), 102.11(a)(1) & 102.11(b)
3. The following technical deficiencies are associated with the proposed Channels:
 - a. Diversion Channels #1, 2, 3 & 4 are identified as trapezoidal on Standard E&S Worksheet #11; however, the plan drawings identify these channels as v-shaped. Clarify this discrepancy. 25 Pa Code §§ 102.4(b)(5)(viii) & 102.4.(b)(5)(ix)
 - b. Channels #5, 8 & 9 are identified and designed as v-shaped with an erosion control matting; however, Page 128 of the E&S Manual recommends against v-shaped channels with matting, due to the tendency for gaps to be left under the lining at the bottom of the channel. Revise the shape of these channels or provide the alternative BMP and design standard demonstration. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(viii), 102.4(b)(5)(ix), 102.11(a)(1) & 102.11(b)
 - c. Provide the design calculations for Channels #5, 6, 7, 8, 9 & 10 in the temporary condition. 25 Pa Code § 102.4.(b)(5)(viii)
 - d. Provide a detail for Channels #5, 6, 7, 8, 9 & 10. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4.(b)(5)(ix)
 - e. Provide the manufacturer's lining installation detail for the North American Green C125. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4.(b)(5)(ix)
4. The following technical deficiencies are associated with the outlet protection:
 - a. Provide the design calculations for all riprap aprons. 25 Pa Code § 102.4.(b)(5)(viii)

- b. The provided riprap apron detail on Sheet CONSTDET 11 is not the Standard Construction Detail #9-1 from the E&S Manual. Rename the detail as it is not Standard Construction Detail or provide the Standard Construction Detail #9-1 from the E&S Manual. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(ix) & 102.11(a)(1)
5. Provide a detail for the waterbar. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

E&S Plan – Huntingdon County Technical Deficiencies

1. Clarify the disturbance proposed for the existing driveway/road off of Hollow Road at approx. Station 7197+00 on Sheet ES-3.11. If this is an existing road to be used for access with no proposed permanent improvements, then identify the existing road as such (as provided on Sheet ES-3.27 at Station 7463+00). 25 Pa Code §§ 102.4(b)(5)(iii) & 102.4(b)(5)(ix)
2. Identify why the LOD is expanded to the south at approx. Station 7337+00 to 7340+00 (on Sheet ES-3.20). 25 Pa Code §§ 102.4(b)(5)(iii) & 102.4(b)(5)(ix)
3. Near Station 7563+00 (on Sheet ES-3.33) a 24" silt sock is shown outside the LOD and installed across concentrated flow at WL-JH2 & S-L45a. Clarify this silt sock shown outside of the LOD. If this is not a drafting error, then revise the LOD accordingly and provide a demonstration showing that the silt sock is an appropriate BMP to be used in a concentrated flow condition and across a stream. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi), 102.4(b)(5)(ix), 102.11(a)(1) & 102.11(b)
4. A rock construction entrance is shown on Sheet ES-3.56 for the temporary access road at approx. Station 7944+50. The rock construction entrance appears to be located on a drainage divide between a special protection watershed and a non-special protection watershed. Because vehicular traffic could exit off of the temporary access road and drive west on Nebo Road (into the special protection watershed), provide a rock construction entrance that achieves an ABACT rating. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(ix) & 102.4(b)(6)
5. Provide an identification of the construction method to be utilized for each roadway crossing. Clarify the crossing method proposed for Croghan Pike (Station 7992+00 on Sheet ES-3.59); as the plans appear to show bore pits but there is no "Area to be Bored" designation and the roadway is identified to be disturbed. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
6. On Sheet ES-3.61 there doesn't appear to be sufficient room within the LOD for the rock construction entrance (on the west side of Cummings Road at Station 8032+00) and appropriate vehicular movement to access/utilize the rock construction entrance (i.e. the end

of the rock construction entrance is the LOD). Provide the demonstration that there is sufficient room for vehicular movement to access/utilize the rock construction entrance. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi), 102.4(b)(5)(ix) & 102.4(c)

7. Sheet ES-3.72 shows two rock construction entrances at approx. Station 8206+00. Identify the need for these rock construction entrances, as there is no existing roadway or access road shown at this location. Clarify this discrepancy. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
8. On Sheet ES-3.76 it appears that the trench plugs are shown not aligned with the mainline pipeline (between Stations 8280+00 and 8284+00). Clarify this discrepancy. 25 Pa Code § 102.4(b)(5)(ix)
9. The following technical deficiencies are associated with Sheet ES-3.79:
 - a. The proposed contour information is difficult to identify for the Shade Valley/Highway 35 Block Valve Site (e.g. it is difficult to discern if the proposed contours tie into the existing contours, it is difficult to identify the contour elevation, etc.). Provide better clarity for this location. 25 Pa Code §§ 102.4(b)(5)(i), 102.4(b)(5)(iii) & 102.4(b)(5)(ix)
 - b. It appears that the length of pipeline to be bored does not extend to the identified bore pits on the east side of Route 35. Clarify this discrepancy. 25 Pa Code §§ 102.4(b)(5)(iii) & 102.4(b)(5)(ix)
10. On Sheet ES-3.81 a rock construction entrance is shown at the end of the timber mat at Station 8371+00; clarify the need for a rock construction entrance at this location. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
11. The following technical deficiencies are associated with Sheet ES-3.82: 25 Pa Code § 102.4(b)(5)(ix)
 - a. It appears that a rock construction entrance would be needed at on the west side of Foltz Hollow Road (Station 8373+50 on Sheet ES-3.82); clarify why a rock construction entrance is not needed at this location. 25 Pa Code § 102.4(b)(5)(vi)
 - b. Identify the name and Chapter 93 Designated and Existing Uses for Stream S-K88 (i.e. "UNT to..."). 25 Pa Code § 102.4(b)(5)(v)
 - c. It appears that the flow direction arrow for Stream S-K87 is shown backwards. Clarify this discrepancy.

12. The ATWS area in the floodway of Stream S-L30 on Sheet 36 of Tab 7A (from the Chapter 105 permit application) is designated for spoil; however, a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to the stream. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
13. The ATWS area in the floodway of Stream S-L45a on Sheet 21 of Tab 7A (from the Chapter 105 permit application) is designated for spoil; however a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to the stream. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
14. The ATWS area in the floodway of Stream S-M3 on Sheet 43 of Tab 7A (from the Chapter 105 permit application) is designated for spoil; however a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to the stream. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
15. The ATWS area in the floodway of Stream S-Y22 on Sheet 3 of Tab 7A (from the Chapter 105 permit application) is designated for spoil; however a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to streams. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
16. The ATWS area in the floodway of Stream S-Y23 on Sheet 4 of Tab 7A (from the Chapter 105 permit application) is designated for spoil; however a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to streams. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
17. The ATWS area in the floodplain of Stream S-Y1 on Sheet 6 of Tab 7A (from the Chapter 105 permit application) is designated for spoil; however a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to streams. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
18. The ATWS areas in the floodways of Streams S-M21 and S-BB98 on Sheet 23 of Tab 7A (from the Chapter 105 permit application) are designated for spoil; however a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that

the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to streams. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

19. The site Specific Drawing S-Y3-C -101 (from the Chapter 105 permit application) is inconsistent with E&S Plan sheet ES-3.10 and the HDD plan drawings (from the Chapter 105 permit application) and proposes different locations of the bore face, stream impacts, and E&S BMPs. Revise the E&S Plan drawing to be consistent and accurate. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
20. The March 2016 Wetland Delineation Addendum (from the Chapter 105 permit application) delineates wetland Y7's Palustrine Forested (PFO) and Palustrine Emergent (PEM) boundaries differently than the July 2015 Aquatic Resources Report (from the Chapter 105 permit application). The impact plan drawings (from the Chapter 105 permit application) utilize the more recent delineation; however, the E&S Plans ES-3.11 and ES-3.12 and the HDD plan drawings (from the Chapter 105 permit application) utilize the July 2015 delineation. Revise the E&S Plan drawings to depict the wetland accurately utilizing the March 2016 Wetland Delineation Addendum delineation. 25 Pa Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
21. The E&S Plan drawing E&S-3.21 depicts a temporary stream crossing of stream S-Y6 at approximately pipe station 7200+50 which does not cross the stream but rather depicts the edge of the matting overtop of the stream channel. This is inconsistent with the standard detail. Revise the plans to cross the stream as close to perpendicular as practicable and if the crossing remains as proposed, provide plans depicting how the crossing will be accomplished in this fashion. 25 Pa Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
22. The delineated boundaries on LK-2 (from the Chapter 105 permit application) are inconsistent with the open water visible on the aerial imagery on the plan drawings and on the contours on the plan drawings and the E&S Plan drawings ES-3.22 and ES-3.23. Revise the delineation boundaries for LK-2 to be accurate and consistent on the plan drawings. 25 Pa Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
23. The impact table identifies that stream S-L45A will have a temporary impact; however, the site plan (from the Chapter 105 permit application) and E&S Plan do not depict temporary impacts to this stream. Revise and clarify the application to be consistent and accurate. 25 Pa Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
24. It appears that stream S-L30 continues and crosses the proposed access road identified on plan sheets 36 and 37 (from the Chapter 105 permit application) and E&S Plan sheet ES-3.60. No stream has been identified in the Aquatic Resource Report (from the Chapter 105

- permit application). Revise the application to identify this stream and if any water obstructions are proposed. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v) & 102.4(b)(5)(ix)
25. Provide profiles for the temporary crossings identified in the E&S Plan that depict at a minimum the existing conditions and the proposed conditions. Also, provide information regarding the length of time that all temporary crossings will be in place. Some of the plans appear to use unnatural stream contours upon restoration. Identify the aggregate and the typical timber mat crossing being used. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
 26. E&S Plan drawing ES-3.73 identify that stream S-K94, which is 20-feet wide, will be temporarily crossed with timber mats. Explain how timber mats will be utilized to construct a temporary bridge of this length. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
 27. The ATWS area on plan sheet 45 (from the Chapter 105 permit application) appears to include wetland K71. However, the plan is not of a sufficient scale to depict whether wetland K71 will be impacted or not, and E&S Plan sheet ES-3.74 does not contain all of the ATWS area on it. Revise the E&S plan to clearly depict this area in the floodway of stream S-K96 and that wetland K71 will not be impacted. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
 28. Stream S-L16 is depicted on E&S Plan sheet ES-3.78 as being crossed by a temporary timber mat at the same location as a proposed gas line. Explain how this will occur and provide additional plan sheets to show stages of construction if necessary. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
 29. E&S Plan drawing ES-3.84 does not depict any water obstructions or encroachments in stream S-K83 in this temporary ROW. Ensure that all activities are properly identified on the E&S Plan. 25 Pa. Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v) & 102.4(b)(5)(ix)
 30. Wetland M3 is identified on the impact table, and identified and depicted impact plan drawing sheet 43, as being open cut and stream S-M3 is identified as the floodway being bored (from the Chapter 105 permit application). However, the E&S Plan sheet ES-3.71 and bore plan drawing PPP-PA-HU-0102.000-RD (from the Chapter 105 permit application) depict that stream S-M3 and wetland M3 will be bored and the floodway of S-M3 will be bored and partially open cut for bore pits. Revise and clarify the E&S Plan to be accurate and consistent. 25 Pa. Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v) & 102.4(b)(5)(ix)
 31. The site impact plan sheet 23 (from the Chapter 105 permit application), E&S Plan sheet ES-3.37, site specific drawing S-BB7-C-101 (from the Chapter 105 permit application), and Bore drawing PPP-PA-HU-0047.012-RD (from the Chapter 105 permit application) all depict different proposed impacts, construction techniques, and BMPs. Revise the E&S Plan

to provide plan drawings which are all consistent, accurate, and depict the same proposed impact. 25 Pa. Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v) & 102.4(b)(5)(ix)

32. The E&S Plan drawing ES-3.37 depicts proposed temporary matting in wetland BB127 north of the proposed pipelines while the site specific plan (from the Chapter 105 permit application) depicts temporary matting south of the proposed pipelines. Revise and clarify the site plans to be accurate and consistent. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

E&S Plan – Mount Union Station Technical Deficiencies

1. The Note on the Cover Sheet refers to a Geotechnical Report which is being prepared separately from the E&S Plan and that the certifying engineer for the E&S Plan does not certify the geotechnical features. Identify how this note meets the regulatory requirements for the E&S Plan. Identify what information is contained in this additional geotechnical report and identify how this other report affects the design and planning of the E&S Plan. 25 Pa Code §§ 102.4(b)(5)(ii) & 102.4(b)(5)(xii)
2. The following technical deficiencies are associated with Sheet C-1:
 - a. Please provide a complete legend, as some of the symbols on the plan sheet C-2 are not included in the legend provided on plan sheet C-1. 25 Pa Code § 102.4(b)(5)(i)
 - b. Notes 1 & 6 make it appear that the existing site has not been field surveyed for existing conditions and existing contour/grades. Clarify if the existing conditions shown on the plan are field survey. If they are not, identify how the information shown meets the regulatory requirements. 25 Pa Code §§ 102.4(b)(5)(i), 102.4(b)(5)(iii) & 102.4(b)(5)(ix)
 - c. The Soil Stockpile in the Legend identifies to reference Standard Erosion & Sediment Control Note 7 on Sheet ES-7; however, Sheet ES-7 is not provided nor part of the E&S Plan for the Mount Union Station. If a separate E&S Plan is provided for the Mount Union Station, then provide all required regulatory information in this Plan. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5) & 102.4(b)(5)(xiv)
3. The following technical deficiencies are associated with Sheet C-2:
 - a. The type of cover at this location is not clear on the plan sheets. Please provide additional information as to the type of cover that is found here. 25 Pa Code § 102.4(b)(5)(i)
 - b. The information shown on the plan is confusing. It appears that the existing valve station is shown as proposed on this E&S Plan. If there is an existing station/site features,

identify those as existing (including existing contours/grades). 25 Pa Code §§ 102.4(b)(5)(i), 102.4(b)(5)(iii) & 102.4(b)(5)(ix)

- c. Identify the receiving surface waters and their Chapter 93 Designated and Existing Uses. 25 Pa Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
 - d. The outlet from the unidentified infiltration trench proposes to discharge concentrated stormwater directly at the compost filter sock. Compost filter socks are not intended to manage concentrated runoff; either revise the design or provide a demonstration showing that the silt sock is an appropriate BMP to be used in a concentrated flow condition and across a stream. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi), 102.4(b)(5)(ix), 102.11(a)(1) & 102.11(b)
 - e. It appears that construction may be taking place outside the LOD, in particular the area north of the RCE. Clarify this discrepancy. 25 Pa Code § 102.4(b)(5)(ix)
 - f. The compost filter sock located along the SW edge of the LOD may need extended to better protect the existing wetland (CC27) during construction and prior to blanketing. Make all revisions necessary. 25 Pa Code § 102.4(b)(5)(ix)
 - g. Identify the location of the compost filter sock below the rock construction entrance (as identified in the Rock Construction Entrance detail on Sheet C-4). 25 Pa Code § 102.4(b)(5)(ix)
4. The following technical deficiencies are associated with Sheet C-3:
- a. Provide a note on the plan sheet regarding if soil/rock is to be removed from the site that the soil/rock must be taken to a location w/an E&S plan and BMPs in place. 25 Pa Code § 102.4(b)(5)(ix)
 - b. Provide a note on the plan sheets regarding clean fill, including the definition and reference to the correct DEP Document Number. 25 Pa Code § 102.4(b)(5)(ix)
 - c. Provide a complete and site specific construction sequence, the current sequence does not address when the launcher, receiver, knock-out tank, pipe supports, storm sewer system and infiltration trench are to be constructed. 25 Pa Code §§ 102.4(b)(5)(vii) & 102.4(b)(5)(ix)

5. The following technical deficiencies are associated with Sheet C-4:
 - a. If concrete will be needed on site, please provide on the plan sheets a concrete wash-out location, relevant detail and direction for disposal. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(ix), 102.4(b)(5)(x) & 102.4(b)(5)(xi)
6. Standard E&S Worksheet #1 does not include the 24" silt sock. The Worksheet also identifies the 12" silt sock as sock #1 and #2. Revise the E&S Plan Sheet C-2 to include a call-out for the location of sock #1 and #2 and revise the Worksheet to include the 24" silt sock. 25 Pa Code §§ 102.4(b)(5)(ix) & 102.4(b)(5)(viii)

E&S Plan – Juniata County Technical Deficiencies

1. The ATWS areas in the floodway of Stream S-K80 on Sheet 2 of Tab 7A (from the Chapter 105 permit application) are designated for spoil; however a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to the stream. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
2. The plans (from the Chapter 105 permit application) indicate that Streams S-L12, S-K70, S-K65, S-K62, S-K63, S-L8, S-L9, K58, S-K57, and S-K56 flow in and along and under the ROW and proposed pipelines and not across and immediately through them or start/end in the area of excavation for the pipes. The plans provided for S-K69 and S-K70 in Tab 7D (from the Chapter 105 permit application) do not adequately depict the existing or proposed conditions upon stream restoration or excavation limits. The E&S Plan does not provide sufficient detail on the stream limits, banks, excavation limits, etc. Provide site-specific plans, cross sections, and profiles that adequately depict the existing and proposed conditions, stream bed, stream banks, limits of excavation, and methods for the stream restorations. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
3. Wetland Q64 is depicted on the plan drawings and impact tables (from the Chapter 105 permit application) as being impacted; however, the E&S Plan drawing ES-3.06 appears to delineate wetland Q64 in a different location than the plan drawings and aquatic resource delineation (from the Chapter 105 permit application). Revise the E&S Plan to accurately depict the location and impacts to wetland Q64. 25 Pa. Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
4. E&S Plan sheet ES-3.06 depicts temporary matting which is different than the site specific plan drawing S-K69-S-K70-C-101 (from the Chapter 105 permit application). Revise the E&S Plan to be accurate and consistent. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

5. Table 3 identifies 93 feet of permanent impact to stream S-K58 in the ROW (from the Chapter 105 permit application); however, E&S Plan ES-3.08 depicts over 100ft of stream S-K58 is within the ROW. Make all revisions necessary to consistently and accurately identify the area of impact to this stream. 25 Pa. Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v) & 102.4(b)(5)(ix)

E&S Plan – Lancaster County Technical Deficiencies

1. Spot checks at several locations found that a number of maximum slope lengths have been exceeded for the proposed filter socks, including those at Socks #7, 8, 24, 27, 29, 32 & 49. Ensure that all filter socks are to be sized according to the maximum slope length above the sock, not just the disturbed area above the sock and to the recommended maximum slope lengths should conform to those provided in Figure 4.2 on Page 66 of the E&S Manual. 25 Pa Code §§ 102.4(b)(5)(viii) & 102.11(a)(1)
2. The ATWS area in the floodway of Stream S-B82 on Sheet 9 of Tab 7A (from the Chapter 105 permit application) is designated for spoil; however, a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to the stream. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
3. The ATWS area in the floodway of Stream S-B10 on Sheet 12 of Tab 7A (from the Chapter 105 permit application) is designated for spoil; however a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to the stream. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
4. E&S Plan drawing ES-1.12 is inconsistent with the site plan drawings and the HDD plan drawings (from the Chapter 105 permit application), which only depict one continuous HDD for each pipeline. Revise the E&S Plan drawings to be consistent and accurate. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
5. The site specific drawing S-B83-C-101 (from the Chapter 105 permit application) depicts different temporary wetland and stream crossing impacts than the E&S Plan drawing ES-1.17. Revise the E&S Plan drawings to be consistent and accurately depict the proposed impacts. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
6. Provide profiles for the temporary crossings identified in the E&S Plan that depict at a minimum the existing conditions and the proposed conditions. Provide information regarding the length of time that all temporary crossings will be in place. Some of the plans

appear to use unnatural stream contours upon restoration. Identify the aggregate and the typical timber mat crossing being used. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

E&S Plan – Lebanon County Technical Deficiencies

1. Bore pits are shown at Station 11842+50 (on Sheet ES-1.02) and Station 11847+00 (on Sheet ES-1.03); however, there is no plan identification of an area to be bored. Clarify this discrepancy and make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(iii) & 102.4(b)(5)(ix)
2. A temporary equipment bridge appears to be intersecting an existing road/driveway at Station 12012+00 on Sheet ES-1.14. Identify how the existing road/driveway will continue to function during use of the temporary equipment bridge. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
3. The E&S Plan sheets indicate that wetland J47 is within both Dauphin and Lebanon Counties. Clarify if all of the proposed impacts to this wetland are accounted for in the Dauphin County Application. Revise the impact plan drawing to depict the county boundary and accurately identify the impacts to the wetland in Lebanon County. In addition, it is recommended that the Dauphin County E&S Plan be evaluated and revised for consistency as necessary. 25 Pa Code §§ 102.4(b)(5)(iii) & 102.4(b)(5)(ix)
4. The impact plans and impact table (from the Chapter 105 permit application) indicate temporary impacts from a temporary bridge are proposed to stream S-A49. However, the E&S Plan does not depict any proposed temporary impacts. Revise the E&S Plan to depict any proposed temporary impacts to stream S-A49 and clarify what permanent impacts are proposed beyond the HDD installed pipelines. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
5. The plans (from the Chapter 105 permit application) indicate that Streams S-B77, S-A2, S-A3, S-A5, S-A10, and S-H7 flow in and along and under the ROW and proposed pipelines and not across and immediately through them. The E&S Plan does not provide sufficient detail on the stream limits, banks, and excavation limits etc. Provide site-specific plans, cross sections, and profiles that adequately depict the existing and proposed conditions, stream bed, stream banks, limits of excavation, and methods for the stream restorations. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
6. The HDD plan drawing PA-LE-0055.0000-RD (from the Chapter 105 permit application) indicates that the HDD Entry/Exit point will be located within wetland A13. However, the site impact plan drawings (from the Chapter 105 permit application) and the E&S Plan drawing depict that this entry exit point will not be located within this wetland. Revise and

clarify the E&S Plan drawings to be consistent and accurately reflect the proposed impacts. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

7. The stream banks of S-A25 are not depicted on the E&S Plan drawing ES-1.50. Based on the width of the stream, it appears that this stream may be partially located within the permanent ROW on the southern portion of the proposed ROW. Revise the E&S Plan drawing to depict the proposed stream banks and any proposed impacts to the stream from the meander of the stream re-entering the proposed ROW. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
8. The Site Plan drawing and impact table (from the Chapter 105 permit application) state that the stream crossing S-A27 will be a dry crossing; however, the site plan drawing, sheet 30 (from the Chapter 105 permit application), and E&S Plan drawing ES-1.53 depict that the stream will have temporary timber mat bridge crossing and that the pipelines will be bored underneath the stream. Revise the E&S Plan to be consistent and accurate to what is proposed, and include a site specific/auger bore drawing for this crossing. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
9. The ATWS area in the floodplain and floodway of Stream S-A24 on Sheet 26 of Tab 7A (from the Chapter 105 permit application) is designated for spoil; however, a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to streams. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
10. E&S Plan drawing ES-1.32 identifies that stream S-A17, which is 25-feet wide, will be temporarily crossed with timber mats. Explain how timber mats will be utilized to construct a temporary bridge of this length. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

E&S Plan – Perry County Technical Deficiencies

1. E&S Plan drawing ES-3.09 and C-2 of the Doylesburg Station E&S Plan do not identify the temporary impacts indicated on Sheet 6 of Tab 7A (from the Chapter 105 permit application). Ensure that the E&S Plans properly identify all of the proposed activities. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
2. The plans (from the Chapter 105 permit application) indicate that Streams S-K51, S-K52, S-Q64, S-Q67, S-J63, S-J62, a portion of S-J70, and S-J69 flow in and along and under the ROW and proposed pipelines and not across and immediately through them or start/end in the area of excavation for the pipes. The plan (from the Chapter 105 permit application) provided for S-Q67 in Tab 7D does not adequately depict the existing or proposed conditions upon stream restoration or excavation limits. The E&S Plans does not provide sufficient

detail on the stream limits, banks, excavation limits, etc. Provide site-specific plans, cross sections, and profiles that adequately depict the existing and proposed conditions, stream bed, stream banks, limits of excavation, and methods for the stream restorations. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

3. Stream S-J70 is delineated as being within the Temporary ROW on E&S Plan drawing ES-3.27 and outside of the Temporary ROW on plan sheet 17 (from the Chapter 105 permit application). Revise the E&S Plan to be accurate with the site plan (from the Chapter 105 permit application). 25 Pa Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
4. The E&S Plan drawing ES-3.03 does not have all of wetlands L1 and L2 delineated in the March 2016 Aquatic Resource Report Addendum (from the Chapter 105 permit application). In addition, this plan sheet does not depict stream S-Q70. Revise the E&S Plan drawings to accurately delineate the streams and wetlands. 25 Pa Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
5. The E&S Plan drawing ES-3.1 delineates streams S-K51 and S-K53 differently than the delineation report and site plan drawings (from the Chapter 105 permit application). Revise the E&S Plan to accurately delineate and depict these watercourses, their floodways, and the proposed impacts. 25 Pa Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
6. E&S Plan drawing ES-3.10 identifies that stream S-K53, which is 25-feet wide, will be temporarily crossed with timber mats. Explain how timber mats will be utilized to construct a temporary bridge of this length. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
7. E&S Plan sheet ES-3.17 identifies that a bore pit is partially located within wetland W-25e; however, the site specific bore plan PPP-PA-PE-0010.0000-AR (from the Chapter 105 permit application) depicts that all bore pits will be located outside of wetlands. Revise the E&S Plan to be consistent and accurate. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
8. The site specific plan drawing S-Q66-S-Q67-C-101 (from the Chapter 105 permit application) depicts different temporary crossings with timber matting than the E&S Plan sheet ES-3.17. Revise the E&S Plan to be consistent and accurate. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
9. E&S Plan sheet ES-3.22 does not accurately delineate wetland J-70 as delineated in the March 2016 Aquatic Resource Report Addendum (from the Chapter 105 permit application). Revise the E&S Plan drawings to accurately delineate this wetland. 25 Pa Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)

10. E&S Plan sheet ES-3.31 identifies that the proposed temporary timber mat stream crossing over stream S-J62 is in excess of 100-feet in length across the stream. Explain how timber mats will be utilized to construct a temporary bridge of this length. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
11. E&S Plan sheet ES-3.31 does not delineate stream S-J62 as it is delineated on the Aquatic Resource Report delineation or the site plan drawings (from the Chapter 105 permit application). Revise the E&S Plan to accurately delineate this stream and accurately depicts the stream banks. 25 Pa Code §§ 102.4(b)(5)(v) & 102.4(b)(5)(ix)
12. The ATWS areas in the floodway of Stream S-K80 on Sheet 2 of Tab 7A (from the Chapter 105 permit application) are designated for spoil; however, a plan depicting the location of the spoil in conjunction with E&S controls could not be found. Ensure that the E&S Plan demonstrates proper measures to minimize the potential for discharge of fill material to the stream. In addition, the western ATWS is located in the stream; however, the impact table (from the Chapter 105 permit application) does not identify any temporary impacts. Revise the E&S Plan as necessary. 25 Pa Code §§ 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
13. The site plan drawing on Sheet 20 of Tab 7A (from the Chapter 105 permit application) and E&S Plan drawing ES-3.32 appear to indicate that stream S-J64 is proposed to be crossed by the proposed pipelines where it currently flows underneath and/or alongside Meadow Road. Provide detailed plans, cross sections, and profiles for the construction of the proposed pipelines and temporary crossing which depict existing and proposed conditions. This includes plans and profiles for any culvert or bridge carrying stream S-J64 underneath Meadow Road. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

E&S Plan – Doyleburg Pump Station Technical Deficiencies

1. The following technical deficiencies are associated with Sheet C-2: 25 Pa Code § 102.4(b)(5)(ix)
 - a. Verify that all of the Detail Indicators have correct references (e.g. rock filter & rock construction entrance).
 - b. Proposed grading is shown outside the limit of disturbance for the channel on the east side of the site. Ensure that all earth disturbances are shown within the limit of disturbance. Make all revisions necessary. 25 Pa Code § 102.4(b)(5)(iii)

- c. Clearly identify the existing features versus the proposed features. 25 Pa Code § 102.4(b)(5)(iii)
2. Provide a more specific sequence of construction, including site specific information and the specific BMPs that will be employed during each stage of construction. 25 Pa Code § 102.4(b)(5)(vii)
3. Remove “as needed” from Stage 2 of the sequence of construction for the installation of rock construction entrance. This location of this E&S BMP is provided on the plan drawings and it is to be utilized where equipment/traffic will exit the site. 25 Pa Code §§ 102.4(b)(5)(vii) & 102.4(b)(5)(xiv)
4. Remove the reference of silt fence and other BMP from Stage 5 of the sequence of construction. This site located in a special protection watershed (Sherman Creek; HQ-CWF); ABACT BMPs are to be provided and utilized. An alternative would be to provide the necessary information (details, notes, plan view, etc.) to upgrade the silt fence to an ABACT rating using additional E&S BMPs (refer to Page 75 of the E&S Manual). 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(vii), 102.4(b)(5)(ix), 102.4(b)(5)(x), 102.4(b)(6)(ii) & 102.11(a)(1)
5. The proposed rock filters provided in the Rock Filters detail on Sheet C-4 are not ABACT rated. In order to be raised to an ABACT rating, the rock filters are to be provided with a 6-in layer of compost on the upslope side (refer to Page 92 of the E&S Manual). Revise the rock filter detail so that the E&S BMP conforms to the ABACT rating for use in the special protection watershed. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(ix), 102.4(b)(6)(ii) & 102.11(a)(1)
6. The Rock Filters detail provided on Sheet C-4 references a Channel C. Identify Channel C on the plan view and if Channel C is proposed, provide a detail for Channel C. 25 Pa Code §§ 102.4(b)(5)(iii) & 102.4(b)(5)(ix)
7. Provide calculations, including the drainage area delineations, for each proposed channel, DEP recommends utilizing Standard E&S Worksheet #11 in Appendix B of the E&S Manual. 25 Pa Code §§ 102.4(b)(5)(viii) & 102.11(a)
8. Revise the county reference from Huntingdon to Perry in Section 2.0 on Page 2-1 of the E&S Plan Narrative. 25 Pa Code § 102.4(b)(5)(iii)

E&S Plan – York County Technical Deficiencies

1. Provide site specific instructions to address how the contractor will open trench, bypass the stream flow and restore the 80' wide stream crossing at S-H56. Identify how timber mats will be able to be used at this location, as the existing conditions were observed as an approximately 80' wide boulder strewn field consisting of diabase material. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(vii) & 102.4(b)(5)(ix)
2. The waterbars in several locations appear to outlet back onto the right-of-way (e.g. east of stream crossing S-H67, between Stations 10960+00 and 10967+00, between Station 11130+70 and stream crossing S-H59). Provide additional BMPs if the waterbars cannot be extended to discharge the runoff off the right-of-way. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
3. Provide discussion related to the use of compost filter sock at Stations 10980+70 & 10984+70, as it appears that concentrated flow will be directed to the compost filter sock. 25 Pa Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(ix)
4. Identify how access will be maintained for the existing driveways and roadways crossings (e.g. Stations 11011+25, 11086+60, 11107+15, 11111+75, 11119+75 & 11139+25). 25 Pa Code §§ 102.4(b)(5)(iii) & 102.4(b)(5)(ix)
5. The slope length to the 12" compost filter sock located along the on the east side of stream crossing S-H60, between Station 11147+00 and stream crossing S-H58 & in the area of stream crossing S-H58 exceed the maximum allowable slope length for the percent slope. Provide an appropriately size E&S BMP in these locations. 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(viii) & 102.4(b)(5)(ix)
6. An existing linear clearing is shown to the south of the proposed pipeline starting at Station 11154+00 (on Sheet ES-4.19) and continuing along to the south of the proposed pipeline and then crosses the proposed pipeline at Station 11167+00 (on Sheet ES-4.20). Identify what this existing clearing is for (i.e. existing trail, existing above ground utility, existing below ground utility, etc.). 25 Pa Code §§ 102.4(b)(5)(iii) & 102.4(b)(5)(ix)
7. It appears that there is a portion of the disturbed area near the proposed bore pits at Station 11169+50 (on Sheet ES-4.20) that would not be managed by an E&S BMP, due to the close proximity of the bore pits to the existing stream. Clarify this discrepancy. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(vi) & 102.4(b)(5)(ix)

Site Restoration and PCSM Plan Narrative – Pennsylvania Pipeline Project – South Central Region: Spreads 3, 4, 5

1. Page 1 is confusing, as it is not clear what this narrative covers. Clearly identify if this narrative covers just the areas that require a PCSM Plan (block valve, stations, etc.) or if the narrative covers the site restoration of the mainline project (under site restoration) and the areas that require a PCSM Plan. 25 Pa Code § 102.8(f)(3)
2. Identify the source and cause of an impairment for any stream which is impaired and not just for the siltation impaired streams. Make all revisions necessary. 25 Pa Code § 102.8(f)(5)
3. Section 2.0 on Page 2 references “This site E&S and Site Restoration Plan...” This is the narrative for post construction. The PCSM Plan shall be separate from the E&S Plan and the E&S Plan shall be separate from the PCSM Plan. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)
4. Section 2.0 on Page 2 references 24 new block valve locations, 3 station valves, 1 substation and 3 additional block valves at existing facilities (for a total of 31 sites); however, Table 1 in Attachment 5 only lists 30 sites. Clarify this discrepancy. 25 Pa Code § 102.8(f)(3)
5. Section 2.0 on Page 2 is not clear if the 3 additional block valves at the existing facilities are included in the earth disturbance for the project. Clearly identify if these block valves are included or not; if not, include them in the ESCGP-2 Permit Boundary. Make all revisions necessary. 25 Pa Code §§ 102.5(c) & 102.8(f)(3)
6. Section 2.1 on Page 4 is not specific to the locations cover by this Plan. Ensure that Plan is related to portions for which is covered by this Plan and ESCGP-2 Permit (i.e. Monongahela River and Cambria County are outside of this Permit application). 25 Pa Code § 102.8(f)(3)
7. Section 2.3 on Page 5 provides for soil resolutions, but does not identify the site specific soils or their limitations. Provide the site specific soils, limitations and appropriate resolution for this soil limitation for the post construction condition and how the project was designed to address the limitation for the PCSM BMPs. 25 Pa Code §§ 102.8(f)(2), 102.8(f)(12) & 102.8(g)(5)
8. Section 2.3 on Page 5 identifies that the receiving surface waters can be seen on the maps and drawings in Attachments 1 & 2; however, the maps and drawings provided in Attachments 1 & 2 do not clearly identify the receiving surface waters. Clearly identify the receiving surface waters as indicated in the narrative. 25 Pa Code §§ 102.8(f)(5) & 102.8(f)(9)

9. Section 2.3 on Page 5 references to see the E&S Plan. The PCSM Plan shall be separate from the E&S Plan and the E&S Plan shall be separate from the PCSM Plan. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)
10. The following technical deficiencies are associated with the construction sequence in Section 3.1 starting on Page 7: 25 Pa Code § 102.8(f)(7)
 - a. It is identified that “It is not intended that the drawings and this report show detailed information on methods and materials.” This statement does not meet regulations. The E&S and PCSM Plans shall be final for construction, and the information, details and provide the methods and materials to properly construct and implement the Plans, including the BMPs, within the construction sequences associated with these Plans. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)
 - b. The narrative identifies that the contractor can deviate from the authorized E&S and PCSM Plans based upon field conditions. A deviation from the authorized plans may be necessary under certain limited circumstances; however, the appropriate county conservation district and DEP have to approve any deviation to the authorized plans. Make all revisions necessary to clearly identify this requirement.
 - c. Provide a schedule of inspections for critical stages of PCSM BMP installation with the construction sequence.
11. More information is required to properly identify what the “Adverse Sites” are or how to identify them in Permanent Seeding sections in Section 3.1 on Page 7 and Section 4.1 on Page 18. 25 Pa Code § 102.8(f)(6)
12. Footnote 7 on Pages 8 & 19 for the Permanent Seeding section tables references extreme southeastern and extreme southwester areas. If this is not applicable to the area covered by this ESCGP-2 Permit, then remove the reference. If this is applicable to the area covered by this ESCGP-2 Permit, then provide a more specific reference as to where it is acceptable. 25 Pa Code § 102.8(f)(6)
13. Section 3.2 on Page 11 and Section 4.2 on Page 22 are not sufficient as they do not provide for procedures which ensure that the proper measures for recycling or disposal of materials associated with or from the PCSM BMPs are in accordance with Department laws, regulations and requirements. 25 Pa Code § 102.8(f)(11)
14. Section 3.3 on Page 11 is not sufficient as there is no clear demonstration that the thermal impacts will be mitigated by the minimized clearing during construction and by permanent

stabilization as soon as practicable. This thermal impact analysis appears to be more for the E&S Plan than for the PCSM Plan. Provide an appropriate thermal impact analysis specific to the PCSM Plan for this location. 25 Pa Code § 102.8(f)(13)

15. Section 3.4 on Page 11 and Section 4.4 on Page 29 provide information related to the riparian buffer/riparian forest buffer waiver request. Identify if this information is in addition to the information provided with the NOI. Provide all riparian/riparian forest buffer waiver request information in one place together. 25 Pa Code §§ 102.14(d)(2) & 102.14(d)(3)
16. Section 3.5 on Page 13 appears to have information related to the E&S Plan and activities during construction are included in this narrative. The PCSM Plan shall be separate from the E&S Plan and the E&S Plan shall be separate from the PCSM Plan. 25 Pa Code §§ 102.4(b)(5)(xiv), 102.8(d) & 102.8(f)(10)
17. If the information provided in Section 3.9 is not a sufficient antidegradation analysis. The narrative identifies that non-discharge alternatives were evaluated; however, there is no discussion related to show what was evaluated. It appears that the discussion is focus on the E&S Plan and during the earth disturbance activities; provide an antidegradation analysis for the PCSM Plan. Provide an antidegradation analysis for each point of discharge that requires one. 25 Pa Code §§ 102.8(d), 102.8(f)(6) & 102.8(h)
18. The narrative discussion in Section 3.7 on Page 14 is not clear as to what is being discussed; site restoration or post construction. If the activities are site restoration and meet 25 Pa Code § 102.8(n), then a stormwater analysis is not required. If the activities are site restoration and the Site Restoration Plan was planned and designed to 25 Pa Code § 102.8(n), then clearly identify that as such along with which areas are included in the Site Restoration Plan. 25 Pa Code § 102.8
19. 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 § 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 §§ 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 §§ 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. §§ 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 § 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 § 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 § 102.8(f)(6)
20. It appears that additional information is necessary for Section 4.0 on Page 16. Provide additional information related to all areas covered by the PCSM Plan. 25 Pa Code § 102.8(f)(6)
21. The following technical deficiencies are associated with the construction sequence in Section 4.1 starting on Page 16: 25 Pa Code § 102.8(f)(7)
- a. It is identified that “It is not intended that the drawings and this report show detailed information on methods and materials.” This statement does not meet regulations. The E&S and PCSM Plans shall be final for construction, and the information, details and provide methods and materials to properly construct and implement the Plans, including the BMPs, within the construction sequences associated with these Plans. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)
 - b. The narrative identifies that the contractor can deviate from the authorized E&S and PCSM Plans based upon field conditions. A deviation from the authorized plans may be necessary in certain limited circumstances; however, the appropriate county conservation

district and DEP have to approve any deviation to the authorized plans. Make all revisions necessary to clearly identify this requirement.

- c. Provide a schedule of inspections for critical stages of PCSM BMP installation.
 - d. More information is required related to how to properly excavate/construct the individual PCSM BMPs. Step 2 for the Infiltration Berm is not sufficient, as it is not directive enough for the contractor to ensure that the infiltration area will not be compacted. Step 2 for the Infiltration Trench, provide measures for how the area will be protected. Provide additional information identifying how the areas will be constructed/excavated to ensure that compaction does not occur.
 - e. The following technical deficiencies are related to the steps for the Infiltration Trench:
 - i. Step 3: If it is not possible to install the trench in later phases of site construction, identify how the trench will be protected from sedimentation and damage.
 - ii. Step 4: This step appears to be out of order, as the E&S BMPs should be installed prior to construction of the infiltration trench. Clarify why this step is not earlier.
 - iii. Steps 8 & 9: Identify what "lightly compacting" means.
22. The following technical deficiencies are associated with Section 4.3 on Page 22: 25 Pa Code § 102.8(f)(13)
- a. The table only provides for 23 site locations. Clarify this number of site locations versus the previously provided number of site locations.
 - b. The narrative discussions reference multiple BMPs at each site; however, Section 4.6 on Page 32 references a singular BMP for each site. Clarify this discrepancy, and clearly identify how many BMPs are proposed for each site location.
23. The following technical deficiencies are associated with Section 4.5 starting on Page 30: 25 Pa Code § 102.8(f)(10)
- a. It appears that information related to the E&S Plan and activities during construction are included in this narrative. The PCSM Plan shall be separate from the E&S Plan and the E&S Plan shall be separate from the PCSM Plan. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)

- b. Provide a demonstration that inspecting the infiltration only 4 times per year is sufficient to ensure proper function and operation.
 - c. No information is provided related to inspecting the infiltration BMPs to ensure that they are dewatering. Ensure that appropriate repair, replacement and other routine maintenance is provided.
 - d. Ensure that appropriate long-term operation and maintenance schedules are provided for all PCSM BMPs (including any and all PCSM BMPs utilized on PCSM Standard Worksheet #10).
24. The following technical deficiencies are related to Section 4.6 starting on Page 32: 25 Pa Code §§ 102.8(f)(15) & 102.8(h)
- a. The narrative identifies that the project site was designed to minimize the amount of impervious area; however, there is no discussion related to show how this was achieved or evaluated.
 - b. It does not appear that non-discharge alternatives were evaluated. Clearly provide the discussion related to the evaluation of non-discharge alternatives.
 - c. Identify what “resultant stormwater” is.
 - d. Clearly identify how the site will be promptly restored/stabilized.
 - e. Provide the demonstration as to how cuts and fills were minimized.
 - f. Provide additional information to support the claim that pre-construction drainage patterns will be maintained.
25. The following technical deficiencies are associated with Section 4.7 starting on Page 36: 25 Pa Code § 102.8(g)
- a. Provide the drainage area maps with the PCSM Plan, not as part of the E&S Plan. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)
 - b. In the seventh sentence of the second paragraph, clarify if the reference to “stormwater runoff” is just for volume.

- c. Provide a narrative discussion as to how water quality is being managed. 25 Pa Code § 102.8(g)(2)
 - d. The regulatory requirement is to manage post construction stormwater for storm events of a 24-hour duration. Make all revisions to appropriately identify the storm events. 25 Pa Code §§ 102.8(g)(2) & 102.8(g)(3)
 - e. Identify to what standards the PCSM Plan was designed and planned to (i.e. Act 167 Plan, 25 Pa Code §§ 102.8(g)(2) & 102.8(g)(3), or an alternative design standard per 25 Pa Code §§ 102.8(g)(2)(iv) & 102.8(g)(3)(iii)).
 - f. The following technical deficiencies are associated with the Loading Ratio Analysis: 25 Pa Code §§ 102.8(f)(6), 102.8(f)(8), 102.8(f)(15), 102.11(a)(2) & 102.11(b)
 - i. Identify how it was determined that the failure of a BMP is defined as when the BMP does not dewater within 72 hours. The failure of a PCSM BMP would occur if the BMP is not operating and functioning as designed. Make all revisions necessary.
 - ii. The provided information is not sufficient to demonstrate that the proposed alternative BMP and design standard will achieve the same regulatory standard as the recommendations of the PCSM Manual. Provide this clear demonstration.
 - iii. Identify what the proposed loading ratios are for each PCSM BMP.
 - iv. The loading ratios are provided to ensure that the BMP is properly designed; which is more than just failure of the BMP. Make all revisions necessary.
 - v. There are several sites located in karst geology (e.g. Middlesex Road location), and Protocol 2.2.e in Appendix C of the PCSM Manual recommends an impervious loading ratio of 3:1 for infiltration BMPs in karst areas. However, the provided analysis does not appear to account for or include discussions for those sites in karst areas. Make all revisions necessary.
26. Section 5.0 on Page 54 references the *Pennsylvania Stormwater Best Management Practices Manual Draft, Pennsylvania Department of Environmental Protection, Bureau of Watershed Management, October, 2009*. This referenced manual is not the current PCSM Manual. The current PCSM Manual is dated December 30, 2006 with DEP Document No. 363-0300-002. Identify the DEP Document Number for the referenced manual. If the PCSM Plan and BMPs were not designed to the current version of the PCSM Manual, then all designs shall

be considered an alternative BMP and design standard. Provide all required information and make all revisions necessary. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)

27. Verify that the Receiving Waters Table clearly identifies the receiving surface waters and their Designated and Existing Uses. Hay Creek is identified with a Designated Use of Exceptional Value (EV) and with an Existing Use of High Quality (HQ) Cold Water Fishes (CWF); however, there is no section of Hay Creek with these Uses together. If the project discharges to the same surface water but in different segments with different Uses; then identify each segment and its Uses. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(v), 102.6(1) & 102.8(f)(5)
28. Protocol 2.1.c in Appendix C of the PCSM Manual recommends soils underlying infiltration devices to have infiltration rates between 0.1 and 10 in./hr. Protocol 2.1.c also recommends that soils with rates in excess of 6.0 in./hr. may require an additional soil buffer (such as an organic layer over the bed bottom) if the Cation Exchange Capacity is less than 5 and pollutant loading is expected to be significant. If the tested/raw infiltration rates are outside the recommendations of the PCSM Manual, then submit additional information which demonstrates that the proposed alternative BMP and design standard will achieve the same regulatory standards as the recommendations of the PCSM Manual. 25 Pa Code §§ 91.51(a), 102.8(f)(6), 102.8(f)(15), 102.11(a)(2) & 102.11(b)
29. Provide a narrative discussion related to the planning and design of the PCSM BMPs for site located in karst areas. 25 Pa Code §§ 102.8(f)(2), 102.8(f)(6), 102.8(f)(12), 102.8(f)(15) & 102.8(g)(5)
30. Provide the dewatering calculations for all PCSM BMPs. 25 Pa Code § 102.8(f)(8)
31. The following technical deficiencies are associated with Attachment 3: 25 Pa Code § 102.8(f)(6)
 - a. Details for E&S BMPs are provided. The PCSM Plan shall be separate from the E&S Plan and the E&S Plan shall be separate from the PCSM Plan. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)
 - b. The Berm Detail is not consistent with the Infiltration Berm Detail provided in the PCSM Plan drawings. Clarify this discrepancy. 25 Pa Code § 102.8(f)(9)
 - c. Identify why a portion of Chapter 6 of the PCSM Manual is provided related to an infiltration trench.

32. The following technical deficiencies are associated with Attachment 4: 25 Pa Code §§ 102.8(f)(8), 102.8(g)(2), 102.8(g)(3) & 102.8(g)(4)
- a. It is not clear how the rainfall depths were determined. Clearly identify how the utilized rainfall depths were determined for each location (i.e. regulator station, compressor station, permanent access road, etc.). Chapter 8 (Page 6) of the PCSM Manual recommends utilizing the rainfall data from the NOAA Atlas 14. If the recommendations of the PCSM Manual are not followed, then provide a demonstration which identifies how the alternative BMP and design standard will achieve the same regulatory standards as the recommendations of the PCSM Manual. 25 Pa Code §§ 102.8(f)(15), 102.11(a)(2) & 102.11(b)
 - b. Identify the breakdown for the Curve Numbers (CN) used in the hydrograph analyses.
 - c. Ensure that the Major River Basins (e.g. Susquehanna, Ohio, Schuylkill, etc.) are properly identified in PCSM Standard Worksheet #1.
 - d. Identify the existing sensitive natural resource identified in PCSM Standard Worksheet #2. 25 Pa Code § 102.8(g)(1)
 - e. PCSM Standard Worksheet #4 uses gravel as a ground cover. However, the type of gravel that will be utilized for the pad and drives is not clearly identified in the PCSM Plan drawings. Properly identify what type of gravel will be used. If PennDOT #2A will be utilized provide discussion as to why it wasn't analyzed as an impervious area (as PennDOT #2A acts like an impervious surface due its fines and its ability to be compacted).
 - f. Provide the latest version of the PCSM Standard Worksheet #5. Identify/provide calculations as to how the volume to be permanently reduced was calculated.
 - g. 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.
 - h. PCSM Standard Worksheet #10 identifies PCSM BMPs to be utilized; however, there is little to no information related to these PCSM BMPs provided throughout the PCSM Plan narrative and drawings. Provide the regulatory required information for each PCSM BMP utilized in the design (e.g. narrative discussion, long-term operation and

maintenance schedule, plan location, etc.). 25 Pa Code §§ 102.8(f)(6), 102.8(f)(7), 102.8(f)(9) & 102.8(f)(10)

- i. In order to be able to utilize PCSM Standard Worksheet #10, 90% 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% of the disturbed area at each site (individually) is controlled/managed by a PCSM BMP (e.g. it appears that less than 90% of the disturbed area is being controlled/managed by a PCSM BMP at the Juniata River West Block Valve site). If less than 90% of the disturbed area is being controlled/managed by a PCSM BMP, then water quality management can be shown through PCSM Standard Worksheets # 12 & 13 (for TSS, TP & NO₃). Make all revisions necessary. 25 Pa Code §§ 102.8(f)(6) & 102.11(a)(2)
- j. Provide drainage area maps for the pre and post construction conditions, including contour information, at a legible scale. The drainage area maps on USGS Quads are not appropriate, as their scale is too large.
- k. Provide discussion as to why such large drainage areas are analyzed for each site. 25 Pa Code § 102.8(f)(15)
- l. Valley Forge site:
 - i. It appears that the hydrograph combination for the Post Without BMPs is not returning an accurate result. The combination peak rate being returned is less than the largest peak of the contributing hydrographs. Verify that the combination hydrographs are accurate.
- m. Juniata River West site:
 - i. The Post With BMPs identifies an increase of 0.03 cfs in the runoff rate for the 50-year/24-hour storm event and an increase of 0.01 cfs in the runoff rate for the 100-year/24-hour storm event. These increases do not meet 25 Pa Code § 102.8(g)(3). Provide the demonstration of an alternative design standard per 25 Pa Code § 102.8(g)(3)(iii).
- n. Juniata River East site:
 - i. Identify the Area in PCSM Standard Worksheet #5.
 - ii. The Post With BMPs identifies an increase of 0.13 cfs in the runoff rate for the 100-year/24-hour storm event. This increase does not meet 25 Pa Code §

102.8(g)(3). Provide the demonstration of an alternative design standard per 25 Pa Code § 102.8(g)(3)(iii).

o. Raystown Road site:

- i. Identify the site consistently. Other locations in the narrative identify this site as SR 26 Raystown Road.
- ii. The predevelopment drainage area analyzed is 2.81 acres; however, the post development drainage areas analyzed are 2.37 acres (Undetained = 1.43 ac. + Detained 0.94 ac.). Provide the discussion as to why the post development conditions analyzed 0.44 ac. less than the predevelopment conditions.
- iii. Rename the post drainage area hydrographs to from SR29 to SR26.

p. Raystown Lake West site:

- i. Provide the justification for using a higher CN for the forest/woods condition as compared to the meadow condition in PCSM Standard Worksheet #4.
- ii. Identify how a volume reduction is shown on PCSM Standard Worksheet #5 when Table 1 in Attachment 5 identifies "N/A" for an infiltration rate.
- iii. The project is proposing an increase in impervious/gravel area, which will increase the runoff; however, the calculations show a reduction in runoff rate without implementing the PCSM BMPs. Provide discussion as to how the runoff rate is being reduced without the use of PCSM BMPs. 25 Pa Code § 102.8(f)(15)

q. Happy Hills site:

- i. Provide the justification for using a higher CN for the forest/woods condition as compared to the meadow condition in PCSM Standard Worksheet #4.
- ii. Verify that all hydrograph printouts are provided. It appears that the post development hydrographs are not included and that the hydrographs provided may be out of sequence.
- iii. Identify if a Time of Adjustment used for this site, as there are no Post With BMPs hydrographs provided. The Post Without BMPs identifies an increase of 0.01 cfs in the runoff rate for the 2- & 10-year/24-hour storm events. These

increases do not meet 25 Pa Code § 102.8(g)(3). Provide the demonstration of an alternative design standard per 25 Pa Code § 102.8(g)(3)(iii).

r. PA 655 site:

- i. Verify the Major River Basin as the Ohio River, as identified on PCSM Standard Worksheet #1.
- ii. Provide the justification for using a higher CN for the forest/woods condition as compared to the meadow condition in PCSM Standard Worksheet #4.
- iii. Clearly identify which contributing drainage area worksheets go to which berm.
- iv. Provide consistency in the naming conventions for the drainage areas between the maps and hydrographs. The maps identify DA-1 as undetained, DA-2 as detained and DA-3 as detained; however, the hydrographs utilized Detained 1 and Detained 2.

s. Shade Valley Highway site:

- i. Provide the justification for using a higher CN for the forest/woods condition as compared to the meadow condition in PCSM Standard Worksheet #4.
- ii. Clearly identify which contributing drainage area worksheets go to which berm.
- iii. The calculations on PCSM Standard Worksheet #5 utilize an infiltration time of 12 hours. Provide justification for use of an infiltration time of 12 hours versus the recommended infiltration time of 2 hours or the Time of Concentration (whichever is greater) from Chapter 6 of the PCSM Manual. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)
- iv. PCSM Standard Worksheet #5 identifies a volume permanently reduced of 1,173 cf; however, the contributing drainage area worksheets identify on 951 cf generated in the storm event. Clarify this discrepancy. Make all revisions necessary.
- v. Provide consistency in the naming conventions for the drainage areas between the maps and hydrographs. The maps identify DA-1 as undetained, DA-2 as detained and DA-3 as detained; however, the hydrographs utilized Detained 1 and Detained 2.

- vi. The post development drainage areas analyzed do not add to the predevelopment drainage area analyzed. Clarify this discrepancy.
 - vii. Provide all hydrographs and information for all regulatory storm events in all conditions. Make all revisions necessary.
 - viii. Identify if infiltration testing and soil probes were performed for Infiltration Berm A.
- t. Plainfield Station Valves A & B site:
- i. Verify that the Major River Basin is not the Susquehanna River (PCSM Standard Worksheet #1).
 - ii. Provide the discussion as to why there are two PCSM Standard Worksheets #4 & 5 and only one PCSM Standard Worksheet #10 and one point of discharge analysis for the runoff rate.
 - iii. Provide consistency in the naming conventions for the drainage areas between the maps and hydrographs. The maps identify DA-1 as undetained, DA-2 as detained and DA-3 as detained; however, the hydrographs utilized Detained 1 and Detained 2.
 - iv. Identify why a CN of 89 was used on PCSM Standard Worksheet #4 and a CN of 91 was used in the hydrograph calculations for the same ground cover type.
 - v. Provide all hydrographs and information for all regulatory storm events in all conditions. Make all revisions necessary.
- u. Creek Road site:
- i. Provide the justification for using a higher CN for the forest/woods condition as compared to the meadow condition in PCSM Standard Worksheet #4.
 - ii. Identify how a volume reduction is shown on PCSM Standard Worksheet #5 when Table 1 in Attachment 5 identifies "N/A" for an infiltration rate.
 - iii. Verify the naming convention for the Post With BMPs hydrographs.
 - iv. The project is proposing an increase in impervious/gravel area, which will increase the runoff; however, the calculations show a reduction in runoff rate

without implementing the PCSM BMPs. Provide discussion as to how the runoff rate is being reduced without the use of PCSM BMPs. 25 Pa Code § 102.8(f)(15)

v. Wolf Bridge Road A & B site:

- i. Provide the justification for using a single CN for Hydrologic Soil Groups C & D on PCSM Standard Worksheet #4.
- ii. The calculations on PCSM Standard Worksheet #5 utilize an infiltration time of 12 hours. Provide justification for use of an infiltration time of 12 hours versus the recommended infiltration time of 2 hours or the Time of Concentration (whichever is greater) from Chapter 6 of the PCSM Manual. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)
- iii. The infiltration rate utilized in Infiltration Volume calculation on PCSM Standard Worksheet #5 does not match the recommended infiltration rate from Table 1 in Attachment 5. Clearly identify which contributing drainage area worksheets go to which berm. Clarify these discrepancies.
- iv. Clarify which worksheets go to which berm, then match the naming conventions.
- v. It appears that PCSM Standard Worksheet #5 for DA-2 is with the other worksheets for DA-1, and vice versa. Re-group the worksheets such that each drainage area is together.
- vi. Provide all hydrographs and information for all regulatory storm events in all conditions. Make all revisions necessary.
- vii. Verify the naming convention for the Post With BMPs hydrographs. Verify that all the hydrographs are provided in the correct sequence.
- viii. PCSM Standard Worksheet #5 appears to show volume reduction for Infiltration Berm B; however, the testing resulted in an infiltration rate of zero. Identify how Infiltration Berm B will reduce runoff volume.

w. Middlesex site:

- i. Provide the justification for using a higher CN for the forest/woods condition as compared to the meadow condition in PCSM Standard Worksheet #4.
- ii. The calculations on PCSM Standard Worksheet #5 utilize an infiltration time of

- 12 hours. Provide justification for use of an infiltration time of 12 hours versus the recommended infiltration time of 2 hours or the Time of Concentration (whichever is greater) from Chapter 6 of the PCSM Manual. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)
- iii. The calculations on PCSM Standard Worksheet #5 identify a pipe diameter of 24 in.; however, the Infiltration Trench Detail on the PCSM Plan drawings identifies an 18 in. diameter. Clarify this discrepancy. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(9)
 - iv. Verify the naming convention for the Post With BMPs hydrographs.
 - v. The project is proposing an increase in impervious/gravel area, which will increase the runoff; however, the calculations show a reduction in runoff rate without implementing the PCSM BMPs. Provide discussion as to how the runoff rate is being reduced without the use of PCSM BMPs. 25 Pa Code § 102.8(f)(15)
 - vi. Provide all hydrographs and information for all regulatory storm events in all conditions. Make all revisions necessary.
- x. Arcona Road site:
- i. PCSM Standard Worksheet #4 uses soils with a Hydrologic Soil Group (HSG) C; however, the contributing drainage area worksheet uses a HSG of B. Clarify this discrepancy.
 - ii. The calculations on PCSM Standard Worksheet #5 utilize an infiltration time of 12 hours. Provide justification for use of an infiltration time of 12 hours versus the recommended infiltration time of 2 hours or the Time of Concentration (whichever is greater) from Chapter 6 of the PCSM Manual. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)
- y. Middletown Junction Valves 1 & 2 site:
- i. DA-1:
 - 1. Provide the justification for using a higher CN for the forest/woods condition as compared to the meadow condition in PCSM Standard Worksheet #4.

2. The predevelopment drainage area analyzed does not match the total post development drainage area analyzed. Clarify this discrepancy and make all revisions necessary.
3. The Post With BMPs identifies an increase of 0.02 cfs, 0.16 cfs, 0.89 cfs & 1.18 cfs in the runoff rate for the 2-, 10-, 50- & 100-year/24-hour storm events, respectively. These increases do not meet 25 Pa Code § 102.8(g)(3). Provide the demonstration of an alternative design standard per 25 Pa Code § 102.8(g)(3)(iii).

ii. DA-2:

1. Provide the justification for using a higher CN for the forest/woods condition as compared to the meadow condition in PCSM Standard Worksheet #4.
2. The predevelopment drainage area analyzed does not match the total post development drainage area analyzed. Clarify this discrepancy and make all revisions necessary.
3. The Post With BMPs identifies an increase of 0.03 cfs & 0.05 cfs in the runoff rate for 50- & 100-year/24-hour storm events, respectively. These increases do not meet 25 Pa Code § 102.8(g)(3). Provide the demonstration of an alternative design standard per 25 Pa Code § 102.8(g)(3)(iii).

z. Gates Road site:

- i. Conewago Township does not have a MS4 Permit. Revise PCSM Standard Worksheet #1 and all other document accordingly. 25 Pa Code § 102.8(g)(1)
- ii. Provide the justification for using a higher CN for the forest/woods condition as compared to the meadow condition in PCSM Standard Worksheet #4.
- iii. The calculations on PCSM Standard Worksheet #5 utilize an infiltration time of 12 hours. Provide justification for use of an infiltration time of 12 hours versus the recommended infiltration time of 2 hours or the Time of Concentration (whichever is greater) from Chapter 6 of the PCSM Manual. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)

aa. Schaeffer Road/Obie Road site:

- i. Provide the justification for using a higher CN for the forest/woods condition as compared to the meadow condition in PCSM Standard Worksheet #4.

bb. Schaefferstown Tie In site:

- i. Provide the justification for using a higher CN for the forest/woods condition as compared to the meadow condition in PCSM Standard Worksheet #4.
- ii. The calculations on PCSM Standard Worksheet #5 utilize an infiltration time of 12 hours. Provide justification for use of an infiltration time of 12 hours versus the recommended infiltration time of 2 hours or the Time of Concentration (whichever is greater) from Chapter 6 of the PCSM Manual. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)

cc. Hopeland Road site:

- i. Provide the justification for using a higher CN for the forest/woods condition as compared to the meadow condition in PCSM Standard Worksheet #4.
- ii. The calculations on PCSM Standard Worksheet #5 utilize an infiltration time of 12 hours. Provide justification for use of an infiltration time of 12 hours versus the recommended infiltration time of 2 hours or the Time of Concentration (whichever is greater) from Chapter 6 of the PCSM Manual. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)
- iii. Provide consistency in the naming conventions for the drainage areas between the maps and hydrographs. The maps identify DA-1 as undetained, DA-2 as detained and DA-3 as detained; however, the hydrographs utilized Detained 1 and Detained 2.

dd. Blainsport site:

- i. Provide the justification for using a higher CN for the forest/woods condition as compared to the meadow condition in PCSM Standard Worksheet #4.
- ii. Identify why the soil amendment is not listed on the table on PCSM Standard Worksheet #5. Provide justification for use of an infiltration time of 12 hours versus the recommended infiltration time of 2 hours or the Time of Concentration

(whichever is greater) from Chapter 6 of the PCSM Manual. §§ 102.11(a)(2) & 102.11(b)

- iii. PCSM Standard Worksheet #5 appears to show volume reduction for the Infiltration Berm; however, the testing resulted in an infiltration rate of zero. Identify how the Infiltration Berm will reduce runoff volume.
- iv. Verify the naming convention for the Post With BMPs hydrographs.
- v. Verify that the correct Time of Concentrations with adjustment were used for the Post With BMPs hydrographs.
- vi. The Post With BMPs identifies an increase of 0.02 cfs, 0.89 cfs & 1.18 cfs in the runoff rate for 10-, 50- & 100-year/24-hour storm events, respectively. These increases do not meet 25 Pa Code § 102.8(g)(3). Provide the demonstration of an alternative design standard per 25 Pa Code § 102.8(g)(3)(iii).

ee. Montello site:

- i. Provide the justification for using a higher CN for the forest/woods condition as compared to the meadow condition in PCSM Standard Worksheet #4.
- ii. PCSM Standard Worksheet #5 appears to show volume reduction for the Infiltration Berm; however, the testing resulted in an infiltration rate of zero for the smaller infiltration berm. Identify how the smaller infiltration berm will reduce runoff volume.
- iii. If the site is proposing two separate PCSM BMPs, identify why the two separate BMPs were not analyzed separately in the hydrographs (like all other sites).
- iv. Verify the naming convention for the Post With BMPs hydrographs.
- v. Provide all hydrographs and information for all regulatory storm events in all conditions. Make all revisions necessary.

ff. Wyomissing site:

- i. Provide the justification for using a higher CN for the forest/woods condition as compared to the meadow condition in PCSM Standard Worksheet #4.

- ii. PCSM Standard Worksheet #5 appears to show volume reduction for the Infiltration Berm; however, the testing resulted in an infiltration rate of zero for the smaller infiltration berm. Identify how the smaller infiltration berm will reduce runoff volume.
- iii. If the site is proposing two separate PCSM BMPs, identify why the two separate BMPs were not analyzed separately in the hydrographs (like all other sites).
- iv. Verify the naming convention for the Post With BMPs hydrographs.
- v. Provide all hydrographs and information for all regulatory storm events in all conditions. Make all revisions necessary.

33. The following technical deficiencies are associated with Attachment 5: 25 Pa Code § 102.8(g)(1)

- a. Table 1 only provides for 18 site locations, and there are an additional 7 site locations provide in the table after the certification. Clarify the number of site locations versus the identified number of site locations throughout the narrative.
- b. There appear to be at least three sites identified on Table 1 for which no infiltration testing was performed at the site or at the BMP. The provided discussion is not an adequate demonstration of appropriate infiltration and geologic studies. Provide the demonstration that the predevelopment site characterization and assessment of soil and geology is adequate.
- c. Identify why some Soil Types are identified as "N/A" in Table 1.
- d. Identify how the Safety Factor was determined for use in Table 1. If the utilized Safety Factor is not within the recommendations of Appendix C of the PCSM Manual; then provide an adequate demonstration of an alternative BMP and design standard. 25 Pa Code §§ 102.8(f)(8), 102.11(a)(2) & 102.11(b)
- e. On Table 1 for Schaeffer Road, testing IT-01 through 04 & 06 were identified. Identify if a test location of IT-05 was performed. If so, provide those testing results. Provide the detailed information for IT-06.
- f. The table provided after the certification appears to include sites located outside of the South-central Region. Revise the table to only include sites that are covered by the ESCGP-02 Permit application.

- g. Table 1 identifies that tests IT-01 & 02 are with or near the BMP; however, the PCSM Plan drawings identify the testing outside of the BMP. Clarify this discrepancy.
- h. Provide additional information related to the elevations of the identified limiting zones (e.g. bedrock, weathered bedrock, groundwater, regularly occurring seasonally high water table, etc.).
- i. There appear to be numerous sites which propose to infiltrate stormwater with less than a 2-ft. separation from a limiting zone (e.g. bedrock, weathered bedrock, groundwater, regularly occurring seasonally high water table, etc.) or the Soil Logs ended before 2-ft. below the proposed infiltration elevation. Provide discussion as to how the stormwater is being infiltrated properly. If the 2-ft. separation is not provided, then provide the alternative BMP and design standard demonstration. 25 Pa Code §§ 91.51(a), 102.8(f)(15), 102.11(a)(2) & 102.11(b)
- j. Provide more appropriate soil color descriptions (e.g. from the Munsell Soil Color Charts).
- k. There appear to be numerous locations where two infiltration tests were performed, but only one soil log was recorded. Provide a discussion as to why this is appropriate and also provide an adequate predevelopment site characterization and assessment of soil and geology.
- l. Valley Forge site: Provide the location of the July 12, 2015 auger.
- m. Locke Mountain Road site: Clearly identify if any redoximorphic (redox.) features were observed in the Soil Log.
- n. Juniata River West site: Provide additional discussion related to the identified redoximorphic (redox.) features, and what the relationship is to the top and bottom being dry.
- o. Juniata River East site:
 - i. Clearly identify if groundwater was/was not encountered during the assessment of soil and geology.
 - ii. It does not appear that IT-2 reached a stabilized rate or that eight consecutive readings were taken; provide discussion as to why a stabilize rate or eight consecutive readings were not recorded. Identify how the "Average Stabilized Rate" was determined. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)

p. Raystown Lake West site:

- i. Section 3.1 discusses assuming a weathered rock elevation. Provide additional information as to how the weathered rock elevation was assumed (i.e. what information was evaluated to reach the determination) and identify how this is an adequate and appropriate predevelopment site characterization and assessment of soil and geology.
 - ii. Identify where the Boring Log and Soil Log were taken, as it appears that tests IT-01 & 02 were far apart from each other.
- q. Happy Hills site: Clarify why there are Site Geology Maps provided for Site 1 and Site 2.
- r. PA 655 site: Identify what the second Boring Log and Soil Log are for.
- s. Shade Valley Highway site: Clarify why there are Site Geology Maps provided for Site 1 and Site 2.
- t. Creek Road site:

- i. Section 2.0 identified that the testing was performed in accordance with the recommendations of the PCSM Manual. Protocol 1, Step 3.b in Appendix C of the PCSM Manual identified that the prepared hole should have a uniformed diameter of 6 to 10 inches; however, IT #1 identifies the hole being a conical oblong with a maximum width of 20 inches and IT #2 identified the hole being conical with a varying diameter of 8-12 inches. Because the testing was not done in accordance with the recommendations of the PCSM Manual, provide the demonstration of alternative BMP and design standard. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)
- ii. Provide the Reduction Factor calculations. 25 Pa Code § 102.8(f)(8)

u. Wolf Bridge Road A & B site:

- i. Identify why there are only three Soil Logs for four infiltration test locations. Identify why one Soil Log is for IT #1 and another Soil Log is for IT #1/3.
- ii. Oxidation in the shale is identified. Provide discussion as to what the oxidation is from.

- iii. It appears that weathered rock is not being identified as a limiting zone. Provide discussion as to why weathered rock was not included in the recommended 2 ft. separation between infiltration and rock.
- v. Middletown Junction Valves 1 & 2 site:
- i. Provide additional discussion as to why the single-ring falling head infiltration test is an appropriate testing methodology for this site. This type of testing methodology is not identified as a recommended test in Protocol 1, Step 3 of Appendix C of the PCSM Manual. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)
 - ii. Provide the information from and the location of the Standard Penetration Test.
 - iii. Identify what the underlying geology is for the site.
- w. Gates Road site:
- i. Provide additional discussion as to why the double-ring constant head infiltration test in an appropriate testing methodology for this site. This type of testing methodology is not identified as a recommended test in Protocol 1, Step 3 of Appendix C of the PCSM Manual. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)
 - ii. For IT-01, 17 of the 20 trials identified zero movement for the inner ring. Provide discussion as to how infiltration is adequate and appropriate for this site. Identify how the average rate of 0.1012 in./hr. was determined, as the inner ring average appears to be 0.0805 in./hr. § 102.8(f)(8)
 - iii. For IT-02, identify how the average rate of 1.6862 in./hr. was determined. 25 Pa Code § 102.8(f)(8)
 - iv. Identify what the underlying geology is for the site.
- x. Schaeffer Road/Obie Road site: The Schaeffer Road #5 summary does not match the Infiltration Test Data Sheet; the drop time at 1430 is reported differently. Clearly identify if a stabilized rate or that eight consecutive readings were taken.
- y. Schaefferstown Tie In site:
- i. Provide additional discussion as to why the double-ring constant head infiltration test is an appropriate testing methodology for this site. This type of testing

methodology is not identified as a recommended test in Protocol 1, Step 3 of Appendix C of the PCSM Manual. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)

- ii. Identify what the underlying geology is for the site.

z. Hopeland Road site:

- i. Provide additional discussion as to why the double-ring constant head infiltration test is an appropriate testing methodology for this site. This type of testing methodology is not identified as a recommended test in Protocol 1, Step 3 of Appendix C of the PCSM Manual. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)
- ii. For IT-01, 17 of the 20 trials identified zero movement for the inner ring. Provide discussion as to how infiltration is adequate and appropriate for this site.
- iii. Identify what the underlying geology is for the site.

aa. Blainsport site:

- i. Provide additional discussion as to why the single-ring falling head infiltration test is an appropriate testing methodology for this site. This type of testing methodology is not identified as a recommended test in Protocol 1, Step 3 of Appendix C of the PCSM Manual. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)
- ii. Provide the information from and the location of the Standard Penetration Test.
- iii. Identify what the underlying geology is for the site.

bb. Montello site:

- i. Provide additional discussion as to why the single-ring falling head infiltration test is an appropriate testing methodology for this site. This type of testing methodology is not identified as a recommended test in Protocol 1, Step 3 of Appendix C of the PCSM Manual. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)
- ii. Table 1 identifies the test depth for IT-05 as 0.5 in.; however the Double Ring Infiltration Test results identify a test depth of 0.5 ft. Clarify this discrepancy.
- iii. For IT-04, 14 of the 20 trials identified zero movement for the inner ring. Provide discussion as to how infiltration is adequate and appropriate for this site.

- iv. For IT-05, 19 of the 20 trials identified zero movement for the inner ring. Provide discussion as to how infiltration is adequate and appropriate for this site.
 - v. Identify what the underlying geology is for the site.
- cc. Wyomissing site:
- i. Provide additional discussion as to why the single-ring falling head infiltration test is an appropriate testing methodology for this site. This type of testing methodology is not identified as a recommended test in Protocol 1, Step 3 of Appendix C of the PCSM Manual. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)
 - ii. Identify what the underlying geology is for the site.
34. DEP recommends only providing one copy of the plan drawings per application set (do not provide reduced scale drawings in Attachment 6), to avoid confusion and potential inconsistencies. 25 Pa Code § 102.8(f)(9)

PCSM Narrative Mount Union Valves

1. Section 1.0 on Page 1 identifies that this Post Construction Stormwater Management (PCSM) Plan is incorporated in the project's Erosion and Sediment Control (E&S) Plan. The PCSM Plan shall be separate from the E&S Plan and the E&S Plan shall be separate from the PCSM Plan. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)
2. Section 2.0 on Page 2 does not include discussion related to any proposed PCSM best management practices (BMPs). Ensure that the Site Description properly identifies and includes the PCSM BMPs. 25 Pa Code §§ 102.8(f)(3) & 102.8(f)(6)
3. Section 2.2 on Page 3 provides for resolution if high groundwater is encountered; however, the resolution is only related to during earth disturbance activities. Provide appropriate resolution for this soil limitation for the post construction condition and how the project was designed to address the limitation for the PCSM BMPs. 25 Pa Code §§ 102.8(f)(12) & 102.8(g)(5)
4. Section 2.3 on Page 4 identifies "This E&S plan..." This is the narrative for the PCSM Plan for the Mount Union Valves site. The PCSM Plan shall be separate from the E&S Plan and the E&S Plan shall be separate from the PCSM Plan. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)

5. The following technical deficiencies are associated with Section 3.1 starting on Page 5: 25 Pa Code § 102.8(f)(7)
- a. The first sentence identifies to reference the E&S plan drawings for the PCSM BMPs. This does not meet regulation. The PCSM Plan is the document to reference for the PCSM BMPs. Make all revisions necessary.
 - b. It is identified that "It is not intended that the drawings and this report show detailed information on methods and materials." This statement does not meet regulations. The E&S and PCSM Plans shall be final for construction, and the information, details and provide methods and materials to properly construct and implement the Plans, including the BMPs, as part of the construction sequences associated with these Plans. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)
 - c. The narrative identifies that the contractor can deviate from the authorized E&S and PCSM Plans based upon field conditions. A deviation from the authorized plans may be necessary; however, the appropriate county conservation district and DEP have to approve any deviation to the authorized plans. Make all revisions necessary to clearly identify this requirement.
 - d. Provide a schedule of inspections for critical stages of PCSM BMP installation with the construction sequence.
 - e. The specific construction sequence for the infiltration filter appears to be written for more of an actual constructed filter with a soil mixture, as opposed to the designed and detailed BMP of an infiltration trench. Ensure that the type of PCSM BMP is properly identified, and ensure that the construction sequence is written for the BMP that is designed.
 - f. Step 2 references reinforced concrete boxes; however, the PCSM Plan does not appear to identify concrete boxes as part of the design. Ensure that the construction sequence is written for the BMP that is designed.
 - g. More information is required in Step 3 related to how to properly excavate for the infiltration trench. Identify how the trench will be constructed (Will the trench be excavated from the sides? If not, how will the heavy equipment be used so that the underlying soil is not compacted? Etc.). Identify how the contractor will lightly compact the stone without compacting the underlying soil.
 - h. Steps 3 & 4 are confusing, as these seem to be more design related components of the BMP and not part of the construction sequence. Step 4 identifies that infiltration filter to be underlain by a layer of permeable non-woven-geotextile; if the design is to have a

geotextile fabric, in the construction sequence clearly identify that the geotextile fabric is to be placed. Make all revisions necessary.

- i. Step 5 identifies to place the underlying stone in minimum 6 inch lifts; however, the details on the plan drawings identify the underlying stone depth as 6 in. Ensure that the construction sequence is written for the BMP that is designed.
 - j. Step 10 appears to be more design related than construction related. Revise this step as necessary so that this step is more related to the construction sequence of the BMP.
6. Section 3.5 on Page 11 is not sufficient as it does not provide for procedures which ensure that the proper measures for recycling or disposal of materials associated with or from the PCSM BMPs are in accordance with Department laws, regulations and requirements. 25 Pa Code § 102.8(f)(11)
 7. Section 3.6 on Page 11 is not sufficient as there is no clear demonstration that the thermal impacts will be mitigated by the minimized clearing during construction and by permanent stabilization as soon as practicable. This thermal impact analysis appears to be more for the E&S Plan than for the PCSM Plan. Provide an appropriate thermal impact analysis specific to the PCSM Plan for this location. 25 Pa Code § 102.8(f)(13)
 8. The following technical deficiencies are associated with Section 3.8 starting on Page 11: 25 Pa Code § 102.8(f)(10)
 - a. It appears that information related to the E&S Plan and activities during construction are included in this narrative. The PCSM Plan shall be separate from the E&S Plan and the E&S Plan shall be separate from the PCSM Plan. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)
 - b. The long-term operation and maintenance schedule appears to be written for more of an actual constructed filter with a soil mixture, as opposed to the designed and detailed BMP of an infiltration trench. Ensure that the long-term operation and maintenance schedule is written for the BMP that is designed.
 - c. Provide a demonstration that inspecting the infiltration only 4 times per year is sufficient to ensure proper function and operation. The PCSM Manual recommends inspecting the storm sewer system associated with an infiltration trench; provide this as part of the schedule. There is no inspection identified to ensure that the infiltration trench is dewatering properly (in accordance with the designed dewatering time); ensure that this critical inspection is clearly identified and that proper repair, replacement and other routine maintenance is identified.

- d. Ensure that appropriate long-term operation and maintenance schedules are provided for all PCSM BMPs (including any and all PCSM BMPs utilized on PCSM Standard Worksheet #10).
9. Section 3.9 on Page 13 identifies that the receiving surface water is impaired for siltation. Identify how this determination was made, as it appears that the receiving surface water for the Mount Union Valves is attaining its Designated Use (i.e. it is not impaired). 25 Pa Code § 102.8(f)(5)
10. If an antidegradation analysis has to be completed, the information provided in Section 3.9 is not sufficient. The narrative identifies that non-discharge alternatives were evaluated; however, there is no discussion related to show what was evaluated. It appears that the discussion is focused on the E&S Plan and during the earth disturbance activities; provide an antidegradation analysis for the PCSM Plan. 25 Pa Code §§ 102.8(d), 102.8(f)(6) & 102.8(h)
11. The regulatory requirement is to manage post construction stormwater for storm events of a 24-hour duration. Make all revisions to appropriately identify the storm events (e.g. Section 3.10 on Page 13). 25 Pa Code §§ 102.8(g)(2) & 102.8(g)(3)
12. Section 3.10 on Page 14 identifies that a single PCSM BMP will manage the runoff volume and rate for the 2-year storm. Provide discussion related to what PCSM BMPs will manage the runoff rate for the large storm events. Provide discussion in Section 3.10 related to how the runoff water quality is being managed. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(15)
13. Section 4.1 on Page 14 identifies that the PCSM Plan is designed to comply with the Township of Shirley Subdivision and Land Development Ordinance and the Huntingdon County Stormwater Management Plan. Attachment V to the NOI identifies that there is no approval date for the Huntingdon County Stormwater Plan. The post construction stormwater shall be managed as specified in an applicable Department approved and current Act 167 stormwater management plan, as identified in the regulations (25 Pa Code §§ 102.8(g)(2) & 102.8(g)(3)), or to an alternative design standard (per 25 Pa Code §§ 102.8(g)(2)(iv) & 102.8(g)(3)(iii)). Clearly identify the design standards used for this PCSM Plan. If an alternative design standard was utilized, ensure that all required information is provided to make the alternative design demonstration. Make all revisions necessary throughout all of the application documents.
14. It is not clear how the rainfall depths were determined, as identified in Section 4.1 on Page 14. Clearly identify how the utilized rainfall depths were determined for each location (i.e. regulator station, compressor station, permanent access road, etc.). Chapter 8 (Page 6) of the PCSM Manual recommends utilizing the rainfall data from the NOAA Atlas 14. If the

recommendations of the PCSM Manual are not followed provide a demonstration which identifies how the alternative BMP and design standard will achieve the same regulatory standards as the recommendations of the PCSM Manual. 25 Pa Code §§ 102.8(f)(8), 102.8(f)(15), 102.8(g)(2), 102.8(g)(3), 102.8(g)(4), 102.11(a)(2) & 102.11(b)

15. Section 4.1 on Page 14 identifies that the PCSM BMPs have been designed to comply with quality and quantity management requirements where possible. Clearly identify the areas where the PCSM design does not comply with the regulations. Ensure that proper information is provided demonstrating compliance with all regulatory requirements. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(15)
16. Provide additional information/calculations to clarify how the volumes were calculated in Table 4.3 on Page 16. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(15)
17. Identify if a Safety Factor was utilized in the infiltrate rate for design purposes (in Section 4.4 on Page 17). If a Safety Factor was utilized, identify the Safety Factor and identify how it was determined. If a Safety Factor was not utilized, provide discussion as to why a Safety Factor was not utilized (as recommended on Page 19 of Appendix C of the PCSM Manual). Make all revisions necessary. 25 Pa Code §§ 102.8(f)(8), 102.8(g)(2), 102.8(g)(3), 102.8(g)(4), 102.11(a)(2) & 102.11(b)
18. Section 4.5 on Page 17 identifies that E&S details are included in the land development plans; however, this is not in accordance with the regulations. For the ESCGP-2 Permit, provide the regulatory required information in the E&S Plan. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5), 102.4(b)(5)(xiv) & 102.8(d)
19. Section 5.0 on Page 18 references the *Pennsylvania Stormwater Best Management Practices Manual Draft, Pennsylvania Department of Environmental Protection, Bureau of Watershed Management, October, 2009*. This referenced manual is not the current PCSM Manual. The current PCSM Manual is dated December 30, 2006 with DEP Document No. 363-0300-002. Identify the DEP Document Number for the referenced manual. If the PCSM Plan and BMPs were not designed to the current version of the PCSM Manual, then all designs will be considered an alternative BMP and design standard. Provide all required information and make all revisions necessary. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)
20. The following technical deficiencies are associated with the Trip Report in Appendix B:
 - a. Section 3.1 on Page 2 identifies that mottling (or redoximorphic (redox.) features) were recorded from 4 to 30 inches, that redox. may be an indication of seasonal high water table and that groundwater was not observed in the test pits. This discussion is not sufficient, as it does not identify what the redox. features indicate; for example the redox.

features may indicate that a soil layer that is limiting downward movement of the water or that the redox. feature exists due to a regularly occurring seasonally high water table. Provide more information related to the redox. features, including an identification whether infiltration is appropriate and will meet all regulatory requirements (e.g. Protocol 2.1.a in Appendix C of the PCSM Manual). 25 Pa Code §§ 91.51(a), 102.8(g)(1), 102.11(a)(2) & 102.11(b)

- b. Figure 1 is not a sufficient location map for the testing. Provide and identify the test locations on the PCSM Plan drawings, so that DEP can evaluate their location versus the location of the PCSM BMPs. 25 Pa Code §§ 102.8(f)(9) & 102.8(g)(1)
- c. The following technical deficiencies are associated with the Soil Log: 25 Pa Code § 102.8(g)(1)
 - i. Provide a separate log for each Test Pit.
 - ii. Provide more appropriate soil color descriptions (e.g. from the Munsell Soil Color Charts).
 - iii. Provide more description as to what the 'mixed' color patterns represent. Do the redox. features stop at 30 inches?
- d. The Infiltration Test Data Sheet for IT-1 appears to identify a raw/tested infiltration rate of 4.69 in./hr.; which is different from the identified tested rate in Section 4.4 on Page 17. Clarify this discrepancy and make all revisions necessary. 25 Pa Code § 102.8(f)(8)
- e. It does not appear that a stabilized rate was achieved for IT-2. Protocol 1, Step 3.a in Appendix C of the PCSM Manual recommends taking readings for 8 readings or until a stabilized rate is obtained. If 8 readings or a stabilized rate were not obtained, provide the demonstration of an alternative BMP and design standard. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)

21. The following technical deficiencies are associated with Appendix C:

- a. Figure No. C-1 is not of sufficient detail/scale/contour information to delineate the drainage area. Provide a more accurate/appropriate drainage area map. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(9)
- b. Figure No. C-2 is titled "Post-Construction Drainage Area Map"; however, Appendix C is identified as "Pre-Development Runoff Map". Provide an accurate/appropriate pre-

development drainage area map, including contours. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(9)

22. Figure No. D-1 in Appendix D is not of sufficient detail/scale/contour information to delineate the drainage area. Provide an accurate/appropriate post-development drainage area map, including contours, and identify the Time of Concentration Path. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(9)

23. The following technical deficiencies are associated with Appendix E:

- a. Provide the hydrographs and routings for all regulatory storm events. In the hydrographs identify the drainage area, Curve Number (CN), Time of Concentration (Tc), etc. 25 Pa Code § 102.8(f)(8)
- b. Identify the invert elevation for Culvert – 1. The calculations identify a slope of 2.0% and a length of 50 ft.; however, the PCSM Plan drawings identify a slope of less than 1% and a length of approx. 104 ft. Clarify these discrepancies. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(9)

24. The following technical deficiencies are associated with Appendix F:

- a. Section 3.9 on Page 13 identifies the receiving surface water to be impaired; however, PCSM Standard Worksheet #1 does not identify the receiving surface water as impaired. Clarify this discrepancy. 25 Pa Code §§ 102.8(f)(5) & 102.8(g)(1)
- b. PCSM Standard Worksheet #2 identifies existing natural sensitive resources, but does not identify their Total Area. If an existing natural sensitive resource is mapped, then identify its Total Area. 25 Pa Code §§ 102.8(f)(3) & 102.8(g)(1)
- c. The following technical deficiencies are associated with PCSM Standard Worksheet #4:
 - i. The Managed Site Area is identified as 2.83 ac.; however, only 0.632 ac. was analyzed. Clarify this discrepancy. 25 Pa Code §§ 102.8(f)(8), 102.8(g)(2) & 102.8(g)(4)
 - ii. Hydrologic Soil Groups (HSG) C & D utilize different CNs for all types of ground cover, except impervious. Provide discussion as to why HSGs C & D were combined. 25 Pa Code §§ 102.8(f)(8), 102.8(f)(15), 102.8(g)(2) & 102.8(g)(4)

- iii. Identify how the CNs of 85 & 90 were determined for the gravel areas for HSGs B & C/D. PCSM Plan drawing C-3 appears to identify the gravel pad as PennDOT #2A stone; which is a highly compactable stone and will act like an impervious surface. Provide discussion as to why a PennDOT #2A stone was not modeled as an impervious surface. 25 Pa Code §§ 102.8(f)(8), 102.8(f)(15), 102.8(g)(2) & 102.8(g)(4)
- d. Utilize the latest version of the PCSM Standard Worksheet #5. Identify/provide calculations as to how the volume to be permanently reduced was calculated. Provide the Area for the PCSM BMP. 25 Pa Code §§ 102.8(f)(8), 102.8(f)(15), 102.8(g)(2) & 102.8(g)(4)
- e. PCSM Standard Worksheet #10 identifies PCSM BMPs to be utilized; however, there is little to no information related to these PCSM BMPs provided throughout the PCSM Plan. Provide the regulatory required information for each PCSM BMP utilized in the design (e.g. narrative discussion, long-term operation and maintenance schedule, plan location, etc.). 25 Pa Code §§ 102.8(f)(6), 102.8(f)(7), 102.8(f)(9) & 102.8(f)(10)
- f. The following technical deficiencies are associated with Stormwater BMP Information Chart 5.B:
 - i. It is identified that a Safety Factor of 2 was utilized; however, the calculations do not appear to have utilized a Safety Factor. Clarify this discrepancy. 25 Pa Code § 102.8(f)(8)
 - ii. Identify how the dewatering time was calculated. 25 Pa Code § 102.8(f)(8)
 - iii. The additional information provided to justify the exceeded recommended loading ratios is not sufficient. Provide more information to clearly demonstrate that the proposed loading ratios will achieve the same regulatory standards as the recommendations of the PCSM Manual. 25 Pa Code §§ 102.8(f)(15), 102.11(a)(2) & 102.11(b)
 - iv. It appears that the infiltration testing was performed 3 ft. below the proposed bottom elevation of the infiltration trench. Provide discussion as to how the proposed testing is an adequate and appropriate predevelopment site characterization, as Protocol 1, Step 3 of Appendix C of the PCSM Manual recommends testing at the proposed bottom elevation of an infiltration BMP. 25 Pa Code §§ 102.8(g)(1), 102.11(a)(2) & 102.11(b)

25. DEP recommends only providing one copy of the plan drawings per application set (do not provide reduced scale drawings in Appendix G), to avoid confusion and potential inconsistencies. 25 Pa Code § 102.8(f)(9)

PCSM Narrative Doylestown Station/Valves

1. Section 1.0 on Page 4 identifies that this Post Construction Stormwater Management (PCSM) Plan is incorporated in the project's Erosion and Sediment Control (E&S) Plan. The PCSM Plan shall be separate from the E&S Plan and the E&S Plan shall be separate from the PCSM Plan. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)
2. Section 2.0 on Page 5 does not include discussion related to any proposed PCSM best management practices (BMPs). Ensure that the Site Description properly identifies and includes the PCSM BMPs. 25 Pa Code §§ 102.8(f)(3) & 102.8(f)(6)
3. Section 2.2 on Pages 5-6 provides for soil resolutions, but does not identify the site specific soils or their limitations. Provide the site specific soils, limitations and appropriate resolution for this soil limitation for the post construction condition and how the project was designed to address the limitation for the PCSM BMPs. 25 Pa Code §§ 102.8(f)(2), 102.8(f)(12) & 102.8(g)(5)
4. Section 2.3 on Page 6 identifies the waters are designated as attained, supporting recreation, but fails to identify that the water is also attained, supporting aquatic life. Update accordingly. 25 Pa Code § 102.8(f)(5)
5. Section 2.3 on Page 6 identifies "This E&S plan..." This is the narrative for the PCSM Plan for the Doylestown Station site. The PCSM Plan shall be separate from the E&S Plan and the E&S Plan shall be separate from the PCSM Plan. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)
6. The following technical deficiencies are associated with Section 3.1 starting on Page 7: 25 Pa Code § 102.8(f)(7)
 - a. The first sentence references the E&S plan drawings for the PCSM BMPs. This does not meet regulation. The PCSM Plan must be the document referenced for the PCSM BMPs. Make all revisions necessary.
 - b. It is identified that "It is not intended that the drawings and this report show detailed information on methods and materials." This statement does not meet regulations. The E&S and PCSM Plans shall be final for construction, and the information, details and

provide the methods and materials to properly construct and implement the Plans, including the BMPs, as part of the construction sequences associated with these Plans. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)

- c. The narrative identifies that the contractor can deviate from the authorized E&S and PCSM Plans based upon field conditions. A deviation from the authorized plans may be necessary; however, the appropriate county conservation district and DEP have to approve any deviation to the authorized plans. Make all revisions necessary to clearly identify this requirement.
 - d. Provide a schedule of inspections for critical stages of PCSM BMP installation with the construction sequence.
 - e. The specific construction sequence for the Level Spreader Installation need to be specific to the site design and details. The sequence indicates to protect the lip and for permanent installations the material shall be a non-erodible material, such as pressure-treated timbers or concrete curbing. The Detail on the plan does not reflect this. Clarify if the level spreader is permanent and ensure the detail on the plan matches the construction sequence.
 - f. Step 2 in construction sequence for the Underground Storage Pipe Installation references reinforced concrete boxes; however, the PCSM Plan does not appear to identify concrete boxes as part of the design. Ensure that the construction sequence is written for the BMP that is designed.
 - g. More information is required in Step 3 in construction sequence for the Underground Storage Pipe Installation related to how to properly excavate for the infiltration trench. Identify how the trench will be constructed (Will the trench be excavated from the sides? If not, how will the heavy equipment be used so that the underlying soil is not compacted? Etc.). Identify how the contractor will lightly compact the stone without compacting the underlying soil.
7. Section 3.5 on Page 13 is not sufficient as it does not provide for procedures which ensure that the proper measures for recycling or disposal of materials associated with or from the PCSM BMPs are in accordance with Department laws, regulations and requirements. 25 Pa Code § 102.8(f)(11)
 8. Section 3.6 on Page 14 is not sufficient as there is no clear demonstration that the thermal impacts will be mitigated by the minimized clearing during construction and by permanent stabilization as soon as practicable. This thermal impact analysis appears to be more for the

E&S Plan than for the PCSM Plan. Provide an appropriate thermal impact analysis specific to the PCSM Plan for this location. 25 Pa Code § 102.8(f)(13)

9. The following technical deficiencies are associated with Section 3.8 starting on Page 14: 25 Pa Code § 102.8(f)(10)
- a. It appears that information related to the E&S Plan and activities during construction are included in this narrative. The PCSM Plan shall be separate from the E&S Plan and the E&S Plan shall be separate from the PCSM Plan. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)
 - b. The long-term operation and maintenance schedule indicates the Stormwater BMPs can be altered or removed only after approval by the municipality. Stormwater BMPs can only be altered or removed after approval by DEP as well. Update accordingly.
 - c. The maintenance schedule for the level spreader indicates to inspect the channel to the level spreader annually. Provide a demonstration to verify that only an annual inspection is appropriate to ensure proper function and operation. Since the conveyance channel is critical to the PCSM design, it needs to be included as a PCSM BMP and have proper operation and maintenance. Provide for repair, replacement and other routine maintenance for the channels.
 - d. The maintenance schedule for the level spreader indicates to remove sediment and debris removal when build up occurs in the clean out. Clarify if/where are the proposed clean outs associated with the level spreaders.
 - e. Provide a measure to inspect the infiltration facility to ensure proper function and operation. The PCSM Manual recommends inspecting the storm sewer system associated with an infiltration trench; provide this as part of the schedule. There is no inspection identified to ensure that the infiltration bed (underground storage pipe system) is dewatering properly (in accordance with the designed dewatering time); ensure that this critical inspection is clearly identified and that proper repair, replacement and other routine maintenance is provided for.
 - f. Ensure that appropriate long-term operation and maintenance schedules are provided for all PCSM BMPs (including any and all PCSM BMPs utilized on PCSM Standard Worksheet #10).

10. Section 3.9 on Page 16 identifies that the receiving surface water is impaired for siltation. Identify how this determination was made, as it appears that the receiving surface water for the Doyleburg Station is attaining its Designated Uses (i.e. it is not impaired). 25 Pa Code § 102.8(f)(5)
11. If an antidegradation analysis has to be completed, the information provided in Section 3.9 is not sufficient. The narrative identifies that non-discharge alternatives were evaluated; however, there is no discussion related to show what was evaluated. It appears that the discussion is focused on the E&S Plan and during the earth disturbance activities; provide an antidegradation analysis for the PCSM Plan. 25 Pa Code §§ 102.8(d), 102.8(f)(6) & 102.8(h)
12. The regulatory requirement is to manage post construction stormwater for storm events of a 24-hour duration. Make all revisions to appropriately identify the storm events (e.g. Section 3.10 on Page 17). 25 Pa Code §§ 102.8(g)(2) & 102.8(g)(3)
13. Section 3.10 on Page 14 identifies that a single PCSM BMP will manage the runoff volume and rate for the 2-year storm. Provide discussion related to what PCSM BMPs will manage the runoff rate for the large storm events. Provide discussion in Section 3.10 related to how the runoff water quality is being managed. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(15)
14. Section 3.10 identifies the BMP as an infiltration filter with perforated piping for additional storage. However the BMP is referenced differently within the narrative and on the PCSM plan. In accordance with the PCSM Manual, the BMP appears to be a subsurface infiltration bed. Ensure that the type of PCSM BMP is properly identified and all the necessary information is provided within the PCSM plan. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(10)
15. Section 4.1 on Page 18 identifies that the PCSM Plan is designed to comply with the Perry County SWM Plan and the state regulations. Worksheet #1 in Appendix F indicates that there is an approved Act 167 Plan. Attachment V to the NOI identifies that there is no approved Countywide Act 167 Plan, but identifies the adopted plan as 'Perry County Subdivision and Land Development Ordinance w/ Stormwater Requirements' which is indicated to be approved in 2008. Clarify if there is an adopted Act 167 Plan, as this chart seems to imply that the 'Perry County Subdivision and Land Development Ordinance w/ Stormwater Requirements' is an adopted Act 167 Plan. The post construction stormwater shall be managed as specified in an applicable Department approved and current Act 167 stormwater management plan, as identified in the regulations (25 Pa Code §§ 102.8(g)(2) & 102.8(g)(3)), or to an alternative design standard (per 25 Pa Code §§ 102.8(g)(2)(iv) & 102.8(g)(3)(iii)). Clearly identify the design standards used for this PCSM Plan. If an

alternative design standard was utilized, ensure that all required information is provided to make the alternative design demonstration. Make all revisions necessary throughout all of the application documents.

16. It is not clear how the rainfall depths were determined, as identified in Section 4.1 on Page 18. Clearly identify how the utilized rainfall depths were determined for each location (i.e. regulator station, compressor station, permanent access road, etc.). Chapter 8 (Page 6) of the PCSM Manual recommends utilizing the rainfall data from the NOAA Atlas 14. If the recommendations of the PCSM Manual are not followed provide a demonstration which identifies how the alternative BMP and design standard will achieve the same regulatory standards as the recommendations of the PCSM Manual. 25 Pa Code §§ 102.8(f)(8), 102.8(f)(15), 102.8(g)(2), 102.8(g)(3), 102.8(g)(4), 102.11(a)(2) & 102.11(b)
17. Provide additional information/calculations to clarify how the volumes were calculated in Table 2 starting on Page 19. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(15)
18. Section 4.3, Table 3 is labeled as 'BMP-4 Routing Summary POI-2 Basin'. The report indicates there is only 1 POI and there is no 'basin' proposed. Clarify the discrepancy. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(15)
19. Identify if a Safety Factor was utilized in the infiltrate rate for design purposes (in Section 4.4 on Starting on Page 20). If a Safety Factor was utilized, identify the Safety Factor and identify how it was determined. If a Safety Factor was not utilized, provide discussion as to why a Safety Factor was not utilized (as recommended on Page 19 of Appendix C of the PCSM Manual). Make all revisions necessary. 25 Pa Code §§ 102.8(f)(8), 102.8(g)(2), 102.8(g)(3), 102.8(g)(4), 102.11(a)(2) & 102.11(b)
20. Section 4.4, based on the results of the infiltration testing, no infiltration was achieved at on test point and an extremely low infiltration rate was achieved at the other test point. Provide a demonstration or additional data to support that infiltration is appropriate at the proposed location and depth of the infiltration BMP. 25 Pa Code § 102.8(g)(1)
21. Section 4.5 on Page 21 identifies that E&S details are included in the land development plans; however, this is not in accordance with the regulations. For the ESCGP-2 Permit, provide the regulatory required information in the E&S Plan. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5), 102.4(b)(5)(xiv) & 102.8(d)
22. Section 5.0 on Page 23 references the *Pennsylvania Stormwater Best Management Practices Manual Draft, Pennsylvania Department of Environmental Protection, Bureau of Watershed Management, October, 2009*. This referenced manual is not the current PCSM Manual. The current PCSM Manual is dated December 30, 2006 with DEP Document No. 363-0300-002.

Identify the DEP Document Number for the referenced manual. If the PCSM Plan and BMPs were not designed to the current version of the PCSM Manual, then all designs will be considered an alternative BMP and design standard. Provide all required information and make all revisions necessary. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)

23. Since the channels are critical to the PCSM design, they are considered PCSM BMPs.

- a. Provide associated operation and maintenance schedule and calculations. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(10)
- b. Demonstrate that the proposed bypass channels can safely bypass the flow from a 100 year storm event to allow the other BMPs to function as designed. 25 Pa Code § 102.8(f)(8)
- c. Provide calculations for the existing channel and ensure that the additional flow will be stable and the channel will function as designed. 25 Pa Code § 102.8(f)(8)

24. The following technical deficiencies are associated with the Trip Report in Appendix B:

- a. Figure 1 is not a sufficient location map for the testing. Provide and identify the test locations on the PCSM Plan drawings, so that DEP can evaluate their location versus the location of the PCSM BMPs. 25 Pa Code §§ 102.8(f)(9) & 102.8(g)(1)
- b. Provide more appropriate soil color descriptions (e.g. from the Munsell Soil Color Charts) in the Soil Log. 25 Pa Code § 102.8(g)(1)
- c. The trip report indicates that the infiltration test depths were at 18 inches from surface for TP-1 and 12 inches from the surface for TP-2). It also indicates that test pits were completed to two feet below the target infiltration test depths. The soil logs appear to only go to 28" below the surface. Clarify the discrepancy and provide documentation to ensure that is 2 feet separation from the proposed bottom of the infiltration facility. 25 Pa Code §§ 102.8(g)(1) & 102.11(a)(2)

25. Figure No. C-1 in Appendix C, is not of sufficient detail/scale/contour information to delineate the drainage area. Provide a more accurate/appropriate drainage area map. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(9)

26. Figure No. D-1 in Appendix D is not of sufficient detail/scale/contour information to delineate the drainage area. Provide an accurate/appropriate post-development drainage area map, including contours and identify the Time of Concentration Path. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(9)

27. The following technical deficiencies are associated with Appendix E:

- a. Provide the hydrographs and routings for all regulatory storm events. Provide the drainage area, Curve Number (CN), Time of Concentration (Tc), etc. with the hydrographs. 25 Pa Code § 102.8(f)(8)
- b. The pond elevation and pond volume table on page 5 of 10, does not correlate to the Cumulative storage volume table on pages 19-20 of the PCSM narrative. Clarify the discrepancy.
- c. The outlet pipe data indicates that the outlet input data indicates that the culvert 1 is 20 feet, but the plan shows the outlet pipe at approximately 75 linear feet. Clarify the discrepancy. 25 Pa Code § 102.8(f)(8)
- d. Clarify the existing type of gravel on the site if 20% of the existing impervious area to be disturbed has been considered meadow in good condition. 25 Pa Code § 102.8(g)(2)(i)

28. The following technical deficiencies are associated with Appendix F:

- a. The following technical deficiencies are associated with PCSM Standard Worksheet #4:
 - i. The Managed Site Area is identified as 1.68 ac.; however, 8.17 acres were analyzed. Clarify this discrepancy. 25 Pa Code §§ 102.8(f)(8), 102.8(g)(2) & 102.8(g)(4)
 - ii. Identify how the CNs of 85 was determined for the gravel areas for HSGs B. PCSM Plan drawing C-3 appears to identify the gravel pad as PennDOT #2A stone; which is a highly compactable stone and will act like an impervious surface. Provide discussion as to why a PennDOT #2A stone was not modeled as an impervious surface. 25 Pa Code §§ 102.8(f)(8), 102.8(f)(15), 102.8(g)(2) & 102.8(g)(4)
- b. Provide the latest version of the PCSM Standard Worksheet #5. Identify/provide calculations as to how the volume to be permanently reduced was calculated. Provide the Area for the PCSM BMP. 25 Pa Code §§ 102.8(f)(8), 102.8(f)(15), 102.8(g)(2) & 102.8(g)(4)
- c. PCSM Standard Worksheet #10 identifies PCSM BMPs to be utilized; however, there is little to no information related to these PCSM BMPs provided throughout the PCSM Plan. Provide the regulatory required information for each PCSM BMP utilized in the

design (e.g. narrative discussion, long-term operation and maintenance schedule, plan location, etc.). 25 Pa Code §§ 102.8(f)(6), 102.8(f)(7), 102.8(f)(9) & 102.8(f)(10)

- d. The following technical deficiencies are associated with Stormwater BMP Information Chart 5.B:
- i. It is identified that a Safety Factor of 2 was utilized; however, the calculations do not appear to have utilized a Safety Factor. Clarify this discrepancy. 25 Pa Code § 102.8(f)(8)
 - ii. Identify how the dewatering time was calculated. The PCSM Manual identifies that that the stormwater volume should dewater within a maximum of 72 hours after the design storm. Revise the design accordingly. 25 Pa Code §§ 102.8(f)(8) & 102.11(a)(2)
 - iii. The additional information provided to justify the exceeded recommended loading ratios is not sufficient. Provide more information to clearly demonstrate that the proposed loading ratios will achieve the same regulatory standards as the recommendations of the PCSM Manual. 25 Pa Code §§ 102.8(f)(15), 102.11(a)(2) & 102.11(b)
 - iv. It appears that the infiltration testing was performed 3 ft. above the proposed bottom elevation of the infiltration facility. Provide discussion as to how the proposed testing is an adequate and appropriate predevelopment site characterization, as Protocol 1, Step 3 of Appendix C of the PCSM Manual recommends testing at the proposed bottom elevation of an infiltration BMP (ensure that the soil profiles have been investigated at least 2 feet below the bottom of the infiltration BMP). 25 Pa Code §§ 102.8(g)(1), 102.11(a)(2) & 102.11(b)

29. DEP recommends only providing one copy of the plan drawings per application set (do not provide reduced scale drawings in Appendix G), to avoid confusion and potential inconsistencies. 25 Pa Code § 102.8(f)(9)

PCSM Narrative Middletown Pump Station

1. Identify to what standards the PCSM Plan was designed and planned (i.e. Act 167 Plan, 25 Pa Code §§ 102.8(g)(2) & 102.8(g)(3), or an alternative design standard per 25 Pa Code §§ 102.8(g)(2)(iv) & 102.8(g)(3)(iii)).

2. Section 2.0 indicates that the Worksheets # 4 & 5 are included in Appendix D, but the Worksheets are located in Appendix E. Clarify the discrepancy. 25 Pa Code §§ 102.8(f)(3) & 102.8(f)(6)
3. It is not clear how the rainfall depths were determined, as identified in Section 2.0. Clearly identify how the utilized rainfall depths were determined. Chapter 8 (Page 6) of the PCSM Manual recommends utilizing the rainfall data from the NOAA Atlas 14. If the recommendations of the PCSM Manual are not followed provide a demonstration which identifies how the alternative BMP and design standard will achieve the same regulatory standards as the recommendations of the PCSM Manual. 25 Pa Code §§ 102.8(f)(8), 102.8(f)(15), 102.8(g)(2), 102.8(g)(3), 102.8(g)(4), 102.11(a)(2) & 102.11(b)
4. Section 3.0 indicates that the pre-development has a single point of discharge. However, based on the existing contours, surface waters and assumed property lines shown on the plan, there needs to be at least 3 points of discharge: (1) Draining to the North to an UNT to Swatara Creek, (2) draining to a wetland from a central portion of the access drive, and (3) draining to the south to an UNT to Swatara Creek. Reevaluate the points of the discharge and update the application accordingly. 25 Pa Code § 102.8(f)(4)
5. Clearly identify the drainage areas and delineate the boundaries on the pre-development and post-development drainage area maps. While the maps are provided, the drainage areas are not clear. 25 Pa Code §§ 102.8(f)(4) & 102.8(f)(9)
6. Provide documentation to support the CN utilized in the analysis, including identifying the specific soils Hydraulic Soil Group (HSG) and the input data and calculations used to achieve the weighted CN values. 25 Pa Code § 102.8(f)(8)
7. Provide documentation to support the Time of Concentration utilized in the analysis. 25 Pa Code § 102.8(f)(8)
8. The pre-development and post-development runoff calculations, utilized at 96-hour storm duration for each of the storm events. The regulations required utilizing a 24-hour duration for each storm event. Update the calculations accordingly. 25 Pa Code § 102.8(g)(3)
9. The post-developed drainage areas (area and CN values) explained in Section 3.0, do not correlate directly with the Post-Development Hydrology calculations in Appendix D. Clarify the discrepancy and clearly explain the drainage areas and analysis. 25 Pa Code § 102.8(f)(8)

10. Sections 3.0 & 4.0 reference post-development calculations are located in Appendix C, but Appendix C only contains the pre-development calculations. Clarify the discrepancy. 25 Pa Code § 102.8(f)
11. The invert elevation (for the 2-inch orifice and overflow for infiltration bed #1 do not correlate to the plans. Clarify the discrepancy and ensure the calculations are consistent. 25 Pa Code §§ 102.8(f)(6), 102.8(f)(8) & 102.8(f)(9)
12. The spillway elevation (354) for Infiltration Bern #2 does not correlate to the detail on the plan (355). Clarify the discrepancy and ensure the calculations are consistent. 25 Pa Code §§ 102.8(f)(6), 102.8(f)(8) & 102.8(f)(9)
13. Section 5.0 identifies that E&S details are included in the land development plans; however, this is not in accordance with the regulations. For the ESCGP-2 Permit, provide the regulatory required information in the E&S Plan. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5), 102.4(b)(5)(xiv) & 102.8(d)
14. Section 5.0 fails to identify all of the PCSM BMPs, including Detention Basin 1. Make all revisions necessary. 25 Pa Code § 102.8(f)(6)
15. In Section 5.0, the infiltration rates identified do not correlate with the infiltration testing provided in Appendix F. Clarify the discrepancy. 25 Pa Code §§ 102.8(f)(6) & 102.8(g)(1)
16. In Section 5.0, the volume reduction identified does not correlate to Worksheet #5 or the NOI. Clarify the discrepancy. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(8)
17. Section 7.0, Provide specific long-term operation and maintenance schedules for all PCSM BMPs. The schedule which needs to provide for inspection, needs to include, repair, replacement and other routine maintenance of the PCSM BMPs to ensure proper function and operation. The program must provide for completion of a written report documenting each inspection and all BMP repair and maintenance activities and how access to the PCSM BMPs will be provided. Refer the PCSM Manual for reference for the operation and maintenance for each type of PCSM BMP. 25 Pa Code § 102.8(f)(10)
18. In Section 8.0 and on the PCSM Plans, clarify when the basin is to be constructed within the Construction Sequence. Ensure to include the installation of the outlet structure, specifically, the anti-seep collar as a critical stages of PCSM BMP installation. 25 Pa Code § 102.8(f)(7)
19. Delineate the site location on the location map in Appendix A. 25 Pa Code § 102.8(f)(1)

20. In Appendix D, provide a schematic to explain the runoff analysis, including the nodes, links and outlet structures. 25 Pa Code §§ 102.8(f)(8) & 102.8(g)(3)
21. In Appendix D, clarify that the weir lengths are accurate for both Outlet Structure 3 & 4, which appears to be associated with infiltration Berms 1 & 2. It indicates the weir length is 10 feet, but that does not appear to correlate with the yard drain size shown on the plans. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(8)
22. The following comments relate to the Trip Report in Appendix F:
- a. Section 1.0 indicates single and double ring tests were conducted. Section 2.0 indicates that only double ring testing was performed. Clarify the discrepancy. 25 Pa Code § 102.8(g)(1)
 - b. Figure 1 is not a sufficient location map for the testing. Provide and identify the test locations on the PCSM Plan drawings, so that DEP can evaluate their location versus the location of the PCSM BMPs. 25 Pa Code §§ 102.8(f)(9) & 102.8(g)(1)
 - c. Provide a table to demonstrate the infiltration test elevation, the proposed elevation at the bottom of the infiltration facility and the depth of the soil log to in order to correlate the testing with the proposed design. 25 Pa Code § 102.8(g)(1)
 - d. The infiltration testing results do not appear to be related with the proposed PCSM BMP design calculations. For instance the Infiltration Test Data Sheet for IT-5 appears to correlate to the location of the infiltration bed #1. Infiltration Test Data Sheet for IT-5 identifies a raw/tested infiltration rate of 0.3 in./hr.; however an infiltration rate of 1.15 in/hr was used in the infiltration facilities design on Worksheet #4. Clarify the discrepancies and ensure the PCSM BMP design calculations reflect the infiltration testing. 25 Pa Code §§ 102.8(f)(8), 102.8(g)(1) & 102.8(g)(2)
 - e. Clarify if infiltration is appropriate at Infiltration Berm #1. It appears the testing in that vicinity resulted in no infiltration. 25 Pa Code §§ 102.8(f)(8), 102.8(g)(1) & 102.8(g)(2)
23. The following technical deficiencies are associated with Appendix E:
- a. Provide the latest version of the PCSM Standard Worksheet #5. Identify/provide calculations as to how the volume to be permanently reduced was calculated. Provide the Area for the PCSM BMP. 25 Pa Code §§ 102.8(f)(8), 102.8(f)(15), 102.8(g)(2) & 102.8(g)(4)
 - b. The Volumes of Stormwater treated from each BMP on Worksheet #5 does not correlate

with the Volume of Stormwater treated in Section D.4 of the Notice of Intent. Clarify the discrepancies. 25 Pa Code §§ 102.8(f)(8) & 102.6(a)(1)

24. DEP recommends only providing one copy of the plan drawings per application set (do not provide reduced scale drawings after Appendix F in the narrative), to avoid confusion and potential inconsistencies. 25 Pa Code § 102.4(b)(5)(ix)
25. Clarify if the infiltration calculations for the PCSM BMPs account the time of concentration or 2 hours as the infiltration Period. If the infiltration period exceeds the time of concentration or 2 hours as recommended in the PCSM Manual, provide a discussion of how the proposed infiltration period will achieve the same regulatory standards as the recommendations of the PCSM Manual 25 Pa Code §§ 102.8(f)(8), 102.8(g)(2) & 102.11(a)(2)
26. Clarify how the conveyance facilities (i.e. pipes and swales) are designed. Will they convey the 100 year storm event or was the overflow/bypass accounted for in the design. Provide conveyance calculations for any stormwater conveyance features which are critical to the PCSM BMP design. For instance if the stormwater up to the 100 year storm event is to be managed by a PCSM BMP and the stormwater only reaches the PCSM BMP by being conveyed to the PCSM BMP through a conveyance feature, calculations demonstrating the conveyance facility can convey the 100-year storm to the PCSM BMP are required. The conveyance feature needs to be identified as a PCSM BMP and have associated Operation and Maintenance. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(15)
27. Provide procedures which ensure the proper measures for recycling or disposal of materials associated with or from the PCSM BMPs in accordance with Department laws, regulations and requirements. 25 Pa Code § 102.8(f)(11)
28. Provide the proposed loading ratios (total and impervious) and associated calculations for each infiltration PCSM BMP. If the loading ratios exceed the recommendations in the PCSM Manual, provide a discussion of how the proposed loading ratios will achieve the same regulatory standards as the recommendations of the PCSM Manual. 25 Pa Code §§ 102.8(f)(15), 102.11(a)(2) & 102.11(b)
29. Provide a thermal impact analysis for the project. 25 Pa Code § 102.8(f)(13)
30. Provide Worksheets #1-3 for the project. 25 Pa Code §§ 102.6(a)(1), 102.8(g)(1) & 102.8(g)(2)
31. Provide an analysis to demonstrate the PCSM BMPs will meet the water quality requirements (i.e. Worksheet #10 and/or Worksheets #11-13). Refer to the Water Quality

Process Flow chart on page 40 in Chapter 8 of the PCSM Manual for additional information. 25 Pa Code §§ 102.8(g)(2) & 102.11(a)(2)

32. Clarify if an antidegradation analysis has to be completed. If so, provide an antidegradation analysis for the PCSM Plan. 25 Pa Code §§ 102.8(d), 102.8(f)(6) & 102.8(h)
33. Provide additional information/calculations to clarify how the volumes were calculated for the infiltration basin and berm(s) in Worksheet #5. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(15)
34. Identify if a Safety Factor was utilized in the infiltrate rate for design purposes. If a Safety Factor was utilized, identify the Safety Factor and identify how it was determined. If a Safety Factor was not utilized, provide discussion as to why a Safety Factor was not utilized (as recommended on Page 19 of Appendix C of the PCSM Manual). Make all revisions necessary. 25 Pa Code §§ 102.8(f)(8), 102.8(g)(2), 102.8(g)(3), 102.8(g)(4), 102.11(a)(2) & 102.11(b)
35. Provide dewatering time calculations of the proposed PCSM BMPs. § 102.8(f)(8) & 102.11(a)(2)
36. Clarify if the Diversion Channels 1 & 2 will bypass the upstream drainage area from the project site. If so, provide calculations supporting that the channels will be able to convey the 100-year storm event and bypass the project site. 25 Pa Code §§ 102.8(f)(4) & 102.8(f)(8)
37. Provide calculations for the design of the level spreader. Ensure the design is in accordance with the PCSM Manual or provide the required information related to the alternative BMP and design standard. 25 Pa Code §§ 102.8(f)(8), 102.11(a)(2) & 102.11(b)

PCSM Narrative Beckersville Pump Station

1. Section 1.0 indicates that the project area drains via an unnamed tributary (UNT) to Muddy Creek, however the location map indicates the project site drains to an UNT to Rock Run and/or an UNT Alleghany Creek. Clarify the discrepancy. 25 Pa Code § 102.8(f)(5)
2. Identify to what standards the PCSM Plan was designed and planned (i.e. Act 167 Plan, 25 Pa Code §§ 102.8(g)(2) & 102.8(g)(3), or an alternative design standard per 25 Pa Code §§ 102.8(g)(2)(iv) & 102.8(g)(3)(iii)). Section 2.0 identifies that the PCSM Plan is designed to comply with the Brecknock Township's Subdivision and Land Development Ordinance. Please note that the Conestoga River Watershed Act 167 plan is not current. Clearly identify the design standards used for this PCSM Plan. If an alternative design standard was utilized,

ensure that all required information is provided to make the alternative design demonstration. Make all revisions necessary throughout all of the application documents.

3. It is not clear how the rainfall depths were determined, as identified in Section 2.0. Clearly identify how the utilized rainfall depths were determined. Chapter 8 (Page 6) of the PCSM Manual recommends utilizing the rainfall data from the NOAA Atlas 14. If the recommendations of the PCSM Manual are not followed, then provide a demonstration which identifies how the alternative BMP and design standard will achieve the same regulatory standards as the recommendations of the PCSM Manual. 25 Pa Code §§ 102.8(f)(8), 102.8(f)(15), 102.8(g)(2), 102.8(g)(3), 102.8(g)(4), 102.11(a)(2) & 102.11(b)
4. In Section 3.0, the narrative indicates that drainage area 1 is routed to a basin and drainage area 2 is undetained. This description of the post developed site conditions is not consistent with what is shown on the PCSM plans. Clarify the discrepancy. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(8)
5. Section 3.0 indicates that the pre-development has a single point of interest. However, based on the existing contours and assumed property lines shown on the plan, there needs to be at least 2 points of discharge in order to compare the post development condition. Reevaluate the points of the discharge and update the application accordingly. 25 Pa Code §§ 102.8(f)(4) & 102.8(f)(9)
6. The peak flowrates in the report do not correlate to the flowrates in the Notice of Intent (NOI). Clarify the discrepancy. 25 Pa Code §§ 102.6(a)(1) & 102.8(g)(3)
7. Provide documentation to support the CN utilized in the analysis, including identifying the specific soils Hydraulic Soil Group (HSG) and the input data and calculations used to achieve the weighted CN values. 25 Pa Code § 102.8(f)(8)
8. Provide documentation to support the Time of Concentration utilized in the analysis. Show/Identify the Time of Concentration paths on the drainage area maps. 25 Pa Code § 102.8(f)(8)
9. The pre-development and post-development runoff calculations, utilized at 72-hour storm duration for each of the storm events. The regulations required utilizing a 24-hour duration for each storm event. Update the calculations accordingly. 25 Pa Code § 102.8(g)(3)
10. The following technical deficiencies are associated with Section 5.0:
 - a. The Section indicates that a 12" forebay is proposed within the bottom of the detention basin and will promote infiltration and evaporation of runoff and improve water quality.

However, the intent of a forebay is to collect sediment and as such is not an appropriate infiltration area. Clarify the discrepancy. 25 Pa Code § 102.8(f)(6)

- b. Section 5.0 identifies that E&S details are included in the land development plans; however, this is not in accordance with the regulations. For the ESCGP-2 Permit, provide the regulatory required information in the E&S Plan. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5), 102.4(b)(5)(xiv) & 102.8(d)
 - c. Clarify how the project will meet the volume reduction and water quality requirements in accordance with 25 Pa Code § 102. 25 Pa Code § 102.8(g)(2)
11. The following technical deficiencies are associated with the Operation and Maintenance Program in Section 7.0: 25 Pa Code § 102.8(f)(10)
- a. Item 2 needs to indicate that DEP will need to approve any deviation to the approved PCSM plans. Make all revisions necessary to clearly identify this requirement.
 - b. Expand the schedule to include repair, replacement and other routine maintenance to ensure proper function and operation of each PCSM BMP. Refer the PCSM Manual for reference for the operation and maintenance for each type of PCSM BMP.
 - c. Specify what is meant by the 'significant storm event' within the inspection schedule as the term is subjective.
 - d. Expand the schedule to include monitoring the dewatering of the infiltration PCSM BMPs.
 - e. The program must provide for completion of a written report documenting each inspection and all BMP repair and maintenance activities and how access to the PCSM BMPs will be provided.
12. In Section 8.0 and on the PCSM Plans, clarify in the construction sequence how the detention basin will be protected from sediment during construction or what measures are proposed so the basin will infiltrate as designed in post developed conditions. 25 Pa Code § 102.8(f)(7)
13. In Section 8.0, ensure to include the installation of the outlet structure, specifically, the anti-seep collar as a critical stages of PCSM BMP installation. 25 Pa Code § 102.8(f)(7)
14. The table in the narrative with the inlet and pipe information (i.e. TG, INV, Length, etc.) and the 'Proposed Storm Pipe Table' on PCSM plan sheet 3 is not consistent with the detail on

the PCSM plan sheet 8 for the slope of pipe, P-2. Clarify the discrepancy. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(8)

15. Appendix A, the PNDI receipt indicates an avoidance measure, which can be implemented and would require no further coordination. The avoidance measure indicates to not conduct this project/activity within 50 feet of any stream, rivers, creeks or tributaries and is signed indicating it will be implemented. However, the plans show the 'LOD' within 50 feet of unnamed tributary #62107. Revise the design to implement the avoidance measure or provide evidence of clearance from U.S. Fish and Wildlife Service. 25 Pa Code § 102.6(a)(2)
16. In Appendix D, provide a schematic to explain the runoff analysis, including the nodes, links and outlet structures. 25 Pa Code §§ 102.8(f)(8) & 102.8(g)(3)
17. In Appendix D, provide the outlet structure input parameters for the basin. 25 Pa Code §§ 102.8(f)(8) & 102.8(g)(3)
18. In Appendix D, the infiltration rate utilized (0.08 in/hr) does not correlate with the infiltration testing provided in Appendix G. Clarify the discrepancy. 25 Pa Code §§ 102.8(f)(6) & 102.8(g)(1)
19. The following technical deficiencies are associated with Appendix E:
 - a. The CN utilized in Worksheet #4 are associated with HSG B, but the calculations at the end of the narrative associated with the outlet channel to the stream, indicate the entire are is in HSG C. Clarify the discrepancy. 25 Pa Code §§ 102.8(f)(8) & 102.8(g)(1)
 - b. Identify how the CNs of 85 was determined for the gravel area in the calculations. PCSM Plan sheet 6 identifies the gravel pad as PennDOT #2A stone; which is a highly compactable stone and will act like an impervious surface. Revise the calculations or provide discussion as to why a PennDOT #2A stone was not modeled as an impervious surface. 25 Pa Code §§ 102.8(f)(8), 102.8(f)(15), 102.8(g)(2) & 102.8(g)(4)
 - c. Provide the justification for using a higher CN for the grass condition as compared to the meadow condition in PCSM Standard Worksheet #4. 25 Pa Code §§ 102.8(g)(2)(i) & 102.8(g)(2)(iv)
 - d. Clarify if 20% of the existing impervious area to be disturbed has been considered meadow in good condition on Worksheet #4. 25 Pa Code § 102.8(g)(2)(i)

- e. Provide a drainage area delineation to the infiltration berm, so that the calculations demonstrating that the 2-year volume reaching the berm can be confirmed. 25 Pa Code §§ 102.8(f)(8) & 102.8(g)(2)
 - f. Provide the latest version of the PCSM Standard Worksheet #5. Identify/provide calculations as to how the volume to be permanently reduced was calculated. Provide the Area for the PCSM BMP. 25 Pa Code §§ 102.8(f)(8), 102.8(f)(15), 102.8(g)(2) & 102.8(g)(4)
 - g. Provide a calculation to support the Volume of Stormwater treated on Worksheet #5. 25 Pa Code §§ 102.8(f)(8) & 102.8(g)(2)
20. The following comments relate to the Trip Report in Appendix F:
- a. Provide additional discussion as to why the single-ring falling head infiltration test is an appropriate testing methodology for this site. This type of testing methodology is not identified as a recommended test in Protocol 1, Step3 of Appendix C of the PCSM Manual. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)
 - b. Figure 1 is not a sufficient location map for the testing. Provide and identify the test locations on the PCSM Plan drawings, so that DEP can evaluate their location versus the location of the PCSM BMPs. 25 Pa Code §§ 102.8(f)(9) & 102.8(g)(1)
 - c. Provide a table to demonstrate the infiltration test elevation, the proposed elevation at the bottom of the infiltration facility and the depth of the soil log in order to correlate the testing with the proposed design. 25 Pa Code § 102.8(g)(1)
 - d. Clarify if infiltration is appropriate at Infiltration Berm. It appears the testing in that vicinity resulted in no infiltration or infiltration less than the recommended infiltration range in Appendix C of the PCSM Manual. 25 Pa Code §§ 102.8(f)(8), 102.8(g)(1) & 102.8(g)(2)
21. DEP recommends only providing one copy of the plan drawings per application set (do not provide reduced scale drawings after Appendix F in the narrative), to avoid confusion and potential inconsistencies. 25 Pa Code § 102.4(b)(5)(ix)
22. Clarify if the infiltration calculations for the PCSM BMP account the time of concentration or 2 hours as the infiltration Period. If the infiltration period exceeds the time of concentration or 2 hours as recommended in the PCSM Manual, provide a discussion of how the proposed infiltration period will achieve the same regulatory standards as the

recommendations of the PCSM Manual. 25 Pa Code §§ 102.8(f)(8), 102.8(g)(2), 102.11(a)(2) & 102.11(b)

23. Identify if a Safety Factor was utilized in the infiltrate rate for design purposes. If a Safety Factor was utilized, identify the Safety Factor and identify how it was determined. If a Safety Factor was not utilized, provide discussion as to why a Safety Factor was not utilized (as recommended on Page 19 of Appendix C of the PCSM Manual). Make all revisions necessary. 25 Pa Code §§ 102.8(f)(8), 102.8(g)(2), 102.8(g)(3), 102.8(g)(4), 102.11(a)(2) & 102.11(b)
24. Clarify how the conveyance facilities (i.e. pipes and swales) are designed. Will they convey the 100 year storm event or was the overflow/bypass accounted for in the design. Provide conveyance calculations for any stormwater conveyance features which are critical to the PCSM BMP design. For instance if the stormwater up to the 100 year storm event is to be managed by a PCSM BMP and the stormwater only reaches the PCSM BMP by being conveyed to the PCSM BMP through a conveyance feature, calculations demonstrating the conveyance facility can convey the 100-year storm to the PCSM BMP are required. The conveyance feature needs to be identified as a PCSM BMP and have associated Operation and Maintenance. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(15)
25. Provide procedures which ensure the proper measures for recycling or disposal of materials associated with or from the PCSM BMPs in accordance with Department laws, regulations and requirements. 25 Pa Code § 102.8(f)(11)
26. Provide the proposed loading ratios (total and impervious) and associated calculations for each infiltration PCSM BMP. If the loading ratios exceed the recommendations in the PCSM Manual, provide a discussion of how the proposed loading ratios will achieve the same regulatory standards as the recommendations of the PCSM Manual. 25 Pa Code §§ 102.8(f)(15), 102.11(a)(2) & 102.11(b)
27. Provide a thermal impact analysis for the project. 25 Pa Code § 102.8(f)(13)
28. Provide Worksheets #1-3 for the project. 25 Pa Code §§ 102.6(a)(1), 102.8(g)(1) & 102.8(g)(2)
29. Provide an analysis to demonstrate the PCSM BMPs will meet the water quality requirements (i.e. Worksheet #10 and/or Worksheets #11-13). Refer to the Water Quality Process Flow chart on page 40 in Chapter 8 of the PCSM Manual for additional information. 25 Pa Code §§ 102.8(g)(2) & 102.11(a)(2)

30. Clarify if an antidegradation analysis has to be completed. If so, provide an antidegradation analysis for the PCSM Plan. 25 Pa Code §§ 102.8(d), 102.8(f)(6) & 102.8(h)
31. Provide additional information/calculations to clarify how the volumes were calculated for the infiltration basin and berm in Worksheet #5. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(15)
32. Provide dewatering time calculations of the proposed PCSM BMPs. 25 Pa Code § 102.8(f)(8) & 102.11(a)(2)

PCSM Plan Drawings – Block Valve

1. The following technical deficiencies are associated with Sheet PCS-0.01 (for all Spreads):
 - a. Note 1 appears to indicate that the sites have not been field surveyed for contour information; which is not adequate for a final design. Provide the existing topographic features of the project site and immediate surrounding area. 25 Pa Code §§ 102.8(f)(1) & 102.8(f)(9)
 - b. Note 2 identifies the project as being in Dauphin County. While this is partially correct, as part of the project is within Dauphin County; provide the full identification of where the project is located. If there are different plan sets for each Spread, then identify those counties which are covered by that particular set of drawings for each Spread. 25 Pa Code §§ 102.8(f)(3) & 102.8(f)(9)
 - c. Notes 6, 7 & 11 appear to be related to E&S and not PCSM. The PCSM Plan shall be separate from the E&S Plan and the E&S Plan shall be separate from the PCSM Plan. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)
 - d. The plan set is identified as PCSM; however, a Site Restoration Schedule and Site Restoration notes are provided. Clarify if this plan set includes any areas covered by site restoration. 25 Pa Code §§ 102.8(f)(3) & 102.8(f)(9)
 - e. The following technical deficiencies are associated with the construction sequence in Section 3.1 starting on Page 7: 25 Pa Code § 102.8(f)(7)
 - i. It is identified that “It is not intended that the drawings and this report show detailed information on methods and materials.” This statement does not meet regulations. The E&S and PCSM Plans shall be final for construction. Provide the information, details, methods and materials to properly construct and

implement the Plans, including the BMPs, within the construction sequences associated with these Plans. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)

- ii. It is identified that the contractor can deviate from the authorized E&S and PCSM Plans based upon field conditions. A deviation from the authorized plans may be necessary; however, the appropriate county conservation district and DEP have to approve any deviation to the authorized plans. Make all revisions necessary to clearly identify this requirement.
 - iii. Provide a schedule of inspections for critical stages of PCSM BMP installation with the construction sequence.
- f. The Long Term Inspections and Maintenance for Site Restoration and PCSM Controls notes are not sufficient. Refer to the technical deficiencies identified within the corresponding Site Restoration and PCSM Plan narrative and make all revisions necessary. 25 Pa Code § 102.8(f)(10)
2. The following technical deficiencies are associated with Sheet PCS-0.02 (for all Spreads):
- a. The notes and information provided on this plan sheet appear to be related to E&S Plan and not the Site Restoration and PCSM Plans (the plan sheet in Spread 4 is titled "Erosion & Sediment Control Notes" and the plan sheet in Spread 5 is titled "Post Construction Stormwater Management Plan Erosion & Sediment Control Notes"). The PCSM Plan shall be separate from the E&S Plan and the E&S Plan shall be separate from the PCSM Plan. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)
3. The following technical deficiencies are associated with Sheet PCS-0.03 (for all Spreads):
- a. Refer to the technical deficiencies identified within the corresponding Site Restoration and PCSM Plan narrative related to the seeding information and make all revisions necessary. 25 Pa Code § 102.8(f)(6)
4. The following technical deficiencies are associated with Sheet PCS-0.04 (for all Spreads):
- a. Identify why details for E&S BMPs have been provided. The PCSM Plan shall be separate from the E&S Plan and the E&S Plan shall be separate from the PCSM Plan. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(xiv) & 102.8(d)
 - b. Provide a detail or information for the stone/gravel for the sites included within these plan sets. 25 Pa Code § 102.8(f)(6)

- c. The following technical deficiencies are associated with the Soil Amendment Detail: 25 Pa Code § 102.8(f)(6)
- i. Note 3 identifies that on-site soils with at least 5% organic content can be a substitute for the compost. Design Consideration 1.e on Page 224 in Chapter 6 of the PCSM Manual recommends that on-site soils with an organic content of at least 5% can be properly stockpiled and re-used. Identify if the existing on-site soils have been tested. Identify how the on-site soils will be properly stockpiled. Identify that it will be determined if the on-site soils have at least a 5% organic content. Identify if the 5% organic content is by weight or by volume. 25 Pa Code §§ 102.8(g)(1), 102.11(a)(2) & 102.11(b)
 - ii. Provide sufficient information to identify how the soil amendments will be accomplished (by tilling, by excavation, mixing and placement, etc.).
- d. The following technical deficiencies are associated with the Infiltration Berm Detail: 25 Pa Code § 102.8(f)(6)
- i. The shape of the berm is not per the recommendations of the PCSM Manual. The PCSM Manual recommends that the crest of the berm is smoothly convex, the toes of the berm are smoothly concave and that the crest of the berm should be located near the downstream end of the berm rather than in the middle. Revise the design or provide the required information for the alternative BMP and design standard. 25 Pa Code §§ 102.11(a)(2) & 102.11(b)
 - ii. Note 1 appears to indicate that all berms will have soil amendments in ponded area behind the berms. If that is the case, provide the soil amendment as part of the Infiltration Berm Detail.
- e. The following technical deficiencies are associated with the Infiltration Trench Detail: 25 Pa Code § 102.8(f)(6)
- i. Identify the stone to be used for the trench.
 - ii. Provide additional information related to the nonwoven geotextile fabric (strength, overlap, etc.).
 - iii. Identify the required pipe size for the trench; it is not appropriate to identify a minimum pipe size.

- iv. Identify how the infiltration trench will be inspected for proper function and operation, including full dewatering to the bottom of the trench. 25 Pa Code § 102.8(f)(10)
 - v. Identify if an infiltration trench proposed for Spread 5. If an infiltration trench is not proposed for Spread 5, then remove the detail and information related to the trench from the Spread 5 plan set. 25 Pa Code § 102.8(f)(9)
5. The following technical deficiencies are general technical deficiencies that appear on most or all of the individual site plan sheets:
- a. There is different shading/coloring used on the plan drawings that does not match what is provided in the Legend. Provide consistency between the plan drawings and the Legend. 25 Pa Code § 102.8(f)(9)
 - b. The existing contours are lost on the plan views due to the shading/coloring. Provide legible existing contour information. 25 Pa Code §§ 102.8(f)(1), 102.8(f)(3) & 102.8(f)(9)
 - c. Provide the ESCGP-2 Permit Boundary, identify the soil types and their locations, and provide additional contour labels (existing and proposed). 25 Pa Code §§ 102.8(f)(3) & 102.8(f)(9)
 - d. Correctly show the grading for the infiltration berms, including the 2 ft. berm height, the 3:1 side slopes and the 2 ft. wide top of berm. Identify how runoff will be fully captured behind the berms; without any up-turns at the end of the berms runoff will flow around the ends and bypass the berms. 25 Pa Code §§ 102.8(f)(3) & 102.8(f)(9)
 - e. Ensure that all proposed grading is clearly shown, and ensure that all proposed grading ties back into the existing contour lines. 25 Pa Code §§ 102.8(f)(3) & 102.8(f)(9)
 - f. Provide the existing grade in the Section cuts. 25 Pa Code §§ 102.8(f)(1), 102.8(f)(3) & 102.8(f)(9)
 - g. Identify how the proposed underdrain will be able to convey the runoff to the infiltration berm as shown on the plan. It appears that there would be some surface runoff that does not percolate through the stone to the underdrain, and that there would be flow along the bottom of the stone/gravel pad that could bypass the underdrain all together (especially if the underdrain is not installed at the very bottom of the stone/gavel). Provide calculations showing that the underdrain system can convey the entire 100-year/24-hour

storm event for each site where it is proposed. Provide additional information for the underdrain detail to ensure that the system is properly installed. 25 Pa Code §§ 102.8(b), 102.8(f)(3), 102.8(f)(6), 102.8(f)(8) & 102.8(f)(9)

- h. There are numerous sites where the infiltration BMP is proposed directly or partially over the proposed mainline, which will be backfilled and compacted as part of the mainline construction. Protocol 2.2.a of Appendix C of the PCSM Manual recommends against infiltrating in areas of compacted fill. Provide the demonstration that these PCSM BMPs will properly manage the runoff for the function intended. If the recommendations of the PCSM Manual are not followed, then provide a demonstration which identifies how the alternative BMP and design standard will achieve the same regulatory standards as the recommendations of the PCSM Manual. 25 Pa Code §§ 102.8(f)(15), 102.8(g)(1), 102.8(g)(2), 102.8(g)(3), 102.11(a)(2) & 102.11(b)
- i. The ponding area for many of the infiltration berms is shown to be within the grading for, and in some instances within, the stone/gravel pad. Protocol 2.2.a of Appendix C of the PCSM Manual recommends against infiltrating in areas of compacted fill. Provide the demonstration that these PCSM BMPs will properly manage the runoff for the function intended. If the recommendations of the PCSM Manual are not followed, then provide a demonstration which identifies how the alternative BMP and design standard will achieve the same regulatory standards as the recommendations of the PCSM Manual. 25 Pa Code §§ 102.8(f)(15), 102.8(g)(1), 102.8(g)(2), 102.8(g)(3), 102.11(a)(2) & 102.11(b)
- j. Orange construction fence is identified to be installed. Clearly identify the function of the orange construction fence. If the function is to protect the ponding area during construction, then identify how the stone/gravel sites will be able to be properly constructed; as the orange construction fence is shown with the grading and area for the stone/gravel site. 25 Pa Code §§ 102.8(f)(3), 102.8(f)(6), 102.8(f)(7) & 102.8(f)(9)
- k. Verify the drainage area delineations. There are numerous areas where the drainage area delineation is not perpendicular to the contours. Ensure that adequate plan information is provided (including any necessary calculations) to properly construct the site and drainage area divides. 25 Pa Code §§ 102.8(f)(3), 102.8(f)(8) & 102.8(f)(9)
- l. Verify the Time of Concentration calculations match the flow paths shown on the corresponding plan sheets. An example is for the Middlesex site (Sheet PCS-4.04): the Time of Concentration flow path for the Detained Area is shown on the plan as approx. 65 ft.; however, the calculations utilize a flow path of 465 ft. The sheet flow condition across the roadway appears to be 22 ft. from the plan view; however, the calculations utilized an impervious sheet flow length of 45 ft. Clarify these discrepancies. Make all

revisions necessary to all Time of Concentration flow paths and calculations. 25 Pa Code §§ 102.8(f)(8), 102.8(f)(9), 102.8(g)(3) & 102.8(g)(4)

6. On Sheet PCS-3.01 the shading/coloring shown for the existing driveway is narrower than the existing width of the drive shown by the line type. Clarify this discrepancy. 25 Pa Code §§ 102.8(f)(3) & 102.8(f)(9)
7. The following technical deficiencies are associated with Sheet PCS-3.04
 - a. Identify the location for infiltration test IT-01. Infiltration test IT-03 is shown within the BMP area; however, Table 1 in Attachment 5 of the Plan narrative identifies this test outside of the BMP area; clarify this discrepancy. 25 Pa Code §§ 102.8(f)(9) & 102.8(g)(1)
 - b. Identify how the runoff will be forced into the infiltration trench. 25 Pa Code §§ 102.8(f)(3) & 102.8(f)(9)
 - c. Provide an adequate representation of the proposed infiltration trench on Section A-A (including the 6 in. minimum soil on top of the stone, the perforated pipe is not shown, etc.). Provide the existing and proposed contours/grading and the stone/gravel site on Section A-A. 25 Pa Code §§ 102.8(f)(3), 102.8(f)(6) & 102.8(f)(9)
 - d. The limits of the infiltration trench are difficult to discern. Properly identify the limits of the infiltration trench, including the required trench length. 25 Pa Code §§ 102.8(f)(3), 102.8(f)(6) & 102.8(f)(9)
 - e. Based upon the contour information, it appears that the infiltration trench will be constructed with a top elevation that varies. Identify if the infiltration trench's bottom will be constructed at a constant elevation (if so, identify that elevation). If the infiltration trench will be constructed with a sloping bottom, ensure that any and all calculations for the trench properly account for the sloping bottom (i.e. reduced capacity). 25 Pa Code §§ 102.8(f)(3), 102.8(f)(6), 102.8(f)(8) & 102.8(f)(9)
 - f. Identify the existing PennDOT right-of-way. 25 Pa Code § 102.8(f)(9)
8. The following technical deficiencies are associated with Sheet PCS-3.05
 - a. The top of berm is identified as 822.90; however, a contour line for elevation 823 is shown at the top of the berm. Clarify this discrepancy. 25 Pa Code § 102.8(f)(9)
 - b. Identify the existing PennDOT right-of-way. 25 Pa Code § 102.8(f)(9)

9. The following technical deficiencies are associated with Sheet PCS-3.06
 - a. It appears that the flow direction arrow for S-M54 is backwards. Clarify this discrepancy. 25 Pa Code § 102.8(f)(9)
 - b. Identify the hatching shown at the POI and the receiving surface water. 25 Pa Code § 102.8(f)(9)
10. Based upon the existing and proposed contours on Sheet PCS-3.07, the drainage area delineation and Time of Concentration flow path for the Detained Area are not shown correctly. As it appears that the runoff would be directed towards the road and not across the stone/gravel site and down the embankment to the BMP. Clarify this discrepancy. 25 Pa Code § 102.8(f)(9)
11. Identify if the waterbars shown on Sheet PCS-3.08 are permanent and will remain after construction. If the waterbars are permanent and will remain, then properly account for them in the drainage area delineations and the Time of Concentration flow paths. Make all revisions necessary. 25 Pa Code §§ 102.8(f)(3), 102.8(f)(8) & 102.8(f)(9)
12. The following technical deficiencies are associated with Sheet PCS-3.09
 - a. Clarify why the proposed stone drive for the site is not shown connecting to the existing drive. 25 Pa Code §§ 102.8(f)(3) & 102.8(f)(9)
 - b. Correct the overlapping text. 25 Pa Code § 102.8(f)(9)
13. The following technical deficiencies are associated with Sheet PCS-4.01
 - a. The top of berm is labeled as 563.00; however, a contour line for elevation 568 is shown at the top of the berm. Clarify this discrepancy. 25 Pa Code § 102.8(f)(9)
 - b. Identify if infiltration testing and soil probes were performed for Infiltration Berm A. 25 Pa Code §§ 102.8(f)(9) & 102.8(g)(1)
 - c. It appears that the Infiltration Berms have separate points of discharge to a receiving surface water; however, the runoff rate calculations were performed for a single point of interest. Clarify this discrepancy. 25 Pa Code §§ 102.8(f)(4), 102.8(f)(8), 102.8(f)(9), 102.8(g)(3) & 102.8(g)(4)

14. The following technical deficiencies are associated with Sheet PCS-4.02

- a. The grading for the infiltration berm does not show the top elevation of 434.00. 25 Pa Code § 102.8(f)(9)
- b. It appears that the infiltration testing for the infiltration berm is not located near the berm's proposed location. Provide the demonstration that this testing is an adequate predevelopment site characterization and assessment of soil and geology for the proposed PCSM BMP. 25 Pa Code §§ 102.8(f)(9) & 102.8(g)(1)
- c. Identify how the offsite runoff will be safely and appropriately conveyed across the proposed access drive and onto and across the existing roadway. 25 Pa Code § 102.8(f)(15)

15. The following technical deficiencies are associated with Sheet PCS-4.03

- a. Identify the rectangular feature in the middle of the stone/gravel site. 25 Pa Code §§ 102.8(f)(3) & 102.8(f)(9)
- b. Based upon the Section cut arrows, it appears that the Sections are shown backwards. Clarify this discrepancy. 25 Pa Code § 102.8(f)(9)
- c. Infiltration Tests IT-01, 03 & 04 are shown outside the BMP area; however, Table 1 in Attachment 5 of the Plan narrative identifies these tests are within the BMP area; clarify this discrepancy. Provide discussion as to infiltration test IT-01 is appropriate for testing for Infiltration Berm A, as it is located more than 25 ft. away from the BMP (Protocol 1, Step 2 in Appendix C of the PCSM Manual recommends testing within 25 ft. of a BMP). 25 Pa Code §§ 102.8(f)(9), 102.8(g)(1), 102.11(a)(2) & 102.11(b)
- d. There appears to be a discrepancy between the Time of Concentration flow path for the Undetained Area to POI B versus the flow path shown from Infiltration Berm B. The flow paths are shown to be crossing each other, which would not happen. Clearly identify the flow paths and make all revisions necessary. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(9)

16. The following technical deficiencies are associated with Sheet PCS-4.04

- a. Identify if there is any proposed contour at this location, or if the site will be returned to existing grade. 25 Pa Code § 102.8(f)(9)

- b. Identify how the runoff will be forced into the infiltration trench. 25 Pa Code §§ 102.8(f)(3) & 102.8(f)(9)
- c. Provide an adequate representation of the proposed infiltration trench on Section A-A (including the 6 in. minimum soil on top of the stone, the perforated pipe is not shown, etc.). Provide the existing and proposed contours/grading and the stone/gravel site on Section A-A. 25 Pa Code §§ 102.8(f)(3), 102.8(f)(6) & 102.8(f)(9)
- d. The limits of the infiltration trench are difficult to discern. Properly identify the limits of the infiltration trench, including the required trench length. 25 Pa Code §§ 102.8(f)(3), 102.8(f)(6) & 102.8(f)(9)
- e. Identify if the infiltration trench's bottom will be constructed at a constant elevation (if so, identify that elevation). If the infiltration trench will be constructed with a sloping bottom, ensure that any and all calculations for the trench properly account for the sloping bottom (i.e. reduced capacity). 25 Pa Code §§ 102.8(f)(3), 102.8(f)(6), 102.8(f)(8) & 102.8(f)(9)

17. The following technical deficiencies are associated with Sheet PCS-4.05

- a. It appears that the proposed contours are lost due to the shading/coloring. Clarify this discrepancy. 25 Pa Code § 102.8(f)(9)
- b. Clearly identify the extents of the existing drive, as it is difficult to discern what is existing versus what is proposed. 25 Pa Code §§ 102.8(f)(3) & 102.8(f)(9)

18. The following technical deficiencies are associated with Sheet PCS-4.06

- a. Identify the infiltration test and soil probe locations. 25 Pa Code §§ 102.8(f)(9) & 102.8(g)(1)
- b. Identify if the waterbars shown are permanent and to remain after construction. If the waterbars are permanent and will remain, then properly account for them in the drainage area delineations and the Time of Concentration flow paths. Make all revisions necessary. 25 Pa Code §§ 102.8(f)(3), 102.8(f)(8) & 102.8(f)(9)

19. The following technical deficiencies are associated with Sheet PCS-4.07

- a. Provide the drainage area delineation between POIs A & B. 25 Pa Code § 102.8(f)(9)

- b. Identify if the GEOWEB drive is accounted for in the detained drainage area to Infiltration Berm A or in the undetained drainage area to POI A. If the GEOWEB drive is included in the detained drainage area to Infiltration Berm A, then provide a demonstration of how the runoff is conveyed to the BMP. 25 Pa Code §§ 102.8(f)(3), 102.8(f)(8) & 102.8(f)(9)
20. The following technical deficiencies are associated with Sheet PCS-5.01
 - a. Identify the location for infiltration tests IT-01, 02 & 03. 25 Pa Code §§ 102.8(f)(9) & 102.8(g)(1)
 - b. Correctly identify the drainage area divide between Snitz Creek -- Quittapahilla Creek & Hammer Creek, as the line shown does not align with the contour information provided. 25 Pa Code § 102.8(f)(9)
 - c. Correct the spelling of Quittapahilla Creek. 25 Pa Code § 102.8(f)(9)
21. The following technical deficiencies are associated with Sheet PCS-5.02
 - a. Identify if the waterbars shown are permanent and to remain after construction. If the waterbars are permanent and will remain, then properly account for them in the drainage area delineations and the Time of Concentration flow paths. Make all revisions necessary. 25 Pa Code §§ 102.8(f)(3), 102.8(f)(8) & 102.8(f)(9)
 - b. Identify the existing road right-of-way. 25 Pa Code § 102.8(f)(9)
 - c. It appears that E&S BMPs are shown on these PCSM Plan drawings. Make all revisions necessary. 25 Pa Code §§ 102.4(b)(5)(xiv), 102.8(d) & 102.8(f)(9)
22. On Sheet PCS-5.03, identify if the waterbars shown are permanent and to remain after construction. If the waterbars are permanent and will remain, then properly account for them in the drainage area delineations and the Time of Concentration flow paths. Make all revisions necessary. 25 Pa Code §§ 102.8(f)(3), 102.8(f)(8) & 102.8(f)(9)
23. On Sheet PCS-5.04, it appears that the Pre/Undetained Time of Concentration flow path is shown flowing in the wrong direction. Clarify this discrepancy. 25 Pa Code § 102.8(f)(9)
24. On Sheet PCS-5.05 two separate infiltration berms are shown; however, the hydrograph calculations only modeled one BMP. Provide discussion as to how the modeling is appropriate and adequate. 25 Pa Code §§ 102.8(f)(8), 102.8(f)(9), 102.8(g)(3) & 102.8(g)(4)

25. The following technical deficiencies are associated with Sheet PCS-5.06
- a. Identify the locations for infiltration tests. 25 Pa Code §§ 102.8(f)(9) & 102.8(g)(1)
 - b. Identify the existing road right-of-way. 25 Pa Code § 102.8(f)(9)
 - c. Identify how the channelized runoff from the proposed drive will be safely and appropriately conveyed onto and along the existing roadway. 25 Pa Code § 102.8(f)(15)

PCSM Drawings Mount Union Valves

1. The Note on the Cover Sheet refers to a Geotechnical Report which is being prepared separately from the PCSM Plan and that the certifying engineer for the PCSM Plan does not certify the geotechnical features. Identify how this note meets the regulatory requirements for the PCSM Plan. Identify what information is contained in this additional geotechnical report and identify how this other report affects the design and planning of the PCSM Plan. 25 Pa Code §§ 102.8(f)(2), 102.8(f)(12), 102.8(g)(1) & 102.8(g)(5)
2. The following technical deficiencies are associated with Sheet C-1:
 - a. Notes 1, 4 & 6 make it appear that the existing site has not been field surveyed for existing conditions and existing contour/grades. Clarify if the existing conditions shown on the plan are field survey. If they are not, identify how the information shown meets the regulatory requirements. 25 Pa Code §§ 102.8(f)(1), 102.8(f)(3) & 102.8(f)(9)
 - b. Provide a full and complete Legend. There are numerous lines types on Sheet C-2 which are not provided for in the Legend. 25 Pa Code § 102.8(f)(9)
3. The following technical deficiencies are associated with Sheet C-2:
 - a. The information shown on the plan is confusing. It appears that the existing valve station is shown as proposed on this PCSM Plan. If there is an existing station/site features, identify those as existing (including existing contours/grades). 25 Pa Code §§ 102.8(f)(1), 102.8(f)(3) & 102.8(f)(9)
 - b. Identify the ESCGP-2 Permit Boundary. 25 Pa Code § 102.8(f)(9)
 - c. Provide the proposed grading with contour lines or spot elevations. Identify how the berm ends will be constructed to prevent runoff from flowing around the ends (i.e. will the ends be up-turned?). 25 Pa Code § 102.8(f)(9)

- d. The proposed pipe from Drop Inlet #1 to the 24" Tee is designed with a slope of 0.3%. Provide calculations that show this pipe will be able to convey the 100-year/24-hour event to the infiltration trench. 25 Pa Code § 102.8(f)(8)
 - e. Provide additional contour labels. 25 Pa Code §§ 102.8(f)(1) & 102.8(f)(9)
 - f. The proposed infiltration BMP appears to be located centrally within the pad. Clarify how the pad will function. Will the infiltration area be protected from vehicular traffic? Are any other measures proposed to ensure the BMP will function properly? 25 Pa Code § 102.8(f)(6)
4. The following technical deficiencies are associated with Sheet C-3:
- a. If the infiltration trench will be constructed with AASHTO #57 stone on top of the AASHTO #57 stone for the trench (as shown on Infiltration Filter-Section C), then identify the cap of AASHTO #57 with a different style of hatching that the undisturbed soil below and to the sides of the trench. Make all revisions necessary to accurately and consistently identify how the infiltration trench will be constructed. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(9)
 - b. The Berm Detail identifies a height of 2 ft.; however, Section 4.3 on Page 15 of the PCSM Plan narrative identifies the height as 1 ft. Clarify this discrepancy and make all revisions necessary. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(9)
 - c. The Drop Inlet Detail shows that there will be a sump condition created by the PVC Drain Basin. Identify how this area was designed or will be managed to avoid a condition of continuous standing water in the sump. 25 Pa Code §§ 102.8(f)(6), 102.8(f)(9) & 102.8(f)(15)
 - d. The details for the infiltration trench are not sufficient to be able to construct the BMP. Provide additional detail information, including the necessary manifolds, fittings, etc. Ensure that all pipe joints are identified to be water tight. 25 Pa Code §§ 102.8(f)(6), 102.8(f)(9) & 102.8(f)(15)
 - e. Identify how the infiltration trench will be inspected to ensure that it is properly and completely dewatering. The Cleanout Detail can only be inspected to the bottom of the perforated pipe. Provide a way to inspect the bottom of the infiltration trench to ensure proper dewatering. 25 Pa Code §§ 102.8(f)(6), 102.8(f)(9) & 102.8(f)(10)

- f. The following technical deficiencies are related to the Manhole Detail: 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(9)
 - i. Identify the cover elevation.
 - ii. Identify how the weir structure will be constructed, including how it will be attached and sealed to the inside of the manhole and of what material the weir structure is to be made.

PCSM Drawings Doylestown Station

1. The Note on the Cover Sheet refers to a Geotechnical Report which is being prepared separately from the PCSM Plan and that the certifying engineer for the PCSM Plan does not certify the geotechnical features. Identify how this note meets the regulatory requirements for the PCSM Plan. Identify what information is contained in this additional geotechnical report and identify how this other report affects the design and planning of the PCSM Plan. 25 Pa Code §§ 102.8(f)(2), 102.8(f)(12), 102.8(g)(1) & 102.8(g)(5)
2. On Sheet C-1, provide a full and complete Legend. There are numerous line types on Sheet C-2 which are not provided for in the Legend. 25 Pa Code § 102.8(f)(9)
3. The following technical deficiencies are associated with Sheet C-2:
 - a. The information shown on the plan is confusing. It appears that the existing valve station is shown as proposed on this PCSM Plan. If there are existing station/site features, identify those as existing (including existing contours/grades). 25 Pa Code §§ 102.8(f)(1), 102.8(f)(3) & 102.8(f)(9)
 - b. Identify the ESCGP-2 Permit Boundary. 25 Pa Code § 102.8(f)(9)
 - c. Provide the proposed grading with contour lines or spot elevations. Identify how the berm ends will be constructed to prevent runoff from flowing around the ends (i.e. will the ends be up-turned?) 25 Pa Code § 102.8(f)(9)
 - d. Identify the dimensions/elevations of the existing and proposed features, such as length of the pipes, pipe inverts, and length of the stone trench. Clarify the limits of the ASSHTO 57 and 2A aggregate.
 - e. Provide additional contour labels. 25 Pa Code §§ 102.8(f)(1) & 102.8(f)(9)

4. The following technical deficiencies are associated with Sheet C-3:

- a. The Drop Inlet Detail shows that there will be a sump condition created by the PVC Drain Basin. Identify how this area was designed or will be managed to avoid a condition of continuous standing water in the sump. 25 Pa Code §§ 102.8(f)(6), 102.8(f)(9) & 102.8(f)(15)
- b. The details for the underground storage pipe/infiltration BMP are not sufficient to be able to construct the BMP. Provide additional detail information, including the pipe lengths necessary manifolds, fittings, etc. Ensure that all pipe joints are identified to be water tight. 25 Pa Code §§ 102.8(f)(6), 102.8(f)(9) & 102.8(f)(15)
- c. The details for the level spreader are not sufficient to be able to construct the BMP. Provide additional detail information, including the dimensions, materials, specifying the Erosion Control blanket and if it is temporary or permanent, etc. The construction sequence in the Narrative indicates using pre-treated timbers or concrete curbing. Ensure the detail is consistent. 25 Pa Code §§ 102.8(f)(6), 102.8(f)(9) & 102.8(f)(15)
- d. The channel detail indicates both channel have a bottom width of 0 feet, but the contours on the plan show a bottom width. Clarify the discrepancy. 25 Pa Code §§ 102.8(f)(6), 102.8(f)(9) & 102.8(f)(15)
- e. Identify how the infiltration BMP will be inspected to ensure that it is properly and completely dewatering. The Cleanout Detail can only be inspected to the bottom of the perforated pipe. Provide a way to inspect the bottom of the infiltration trench to ensure proper dewatering. 25 Pa Code §§ 102.8(f)(6), 102.8(f)(9) & 102.8(f)(10)
- f. The following technical deficiencies are related to the Manhole Detail: 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(9)
 - i. Identify the cover elevation.
 - ii. Identify how the weir structure will be constructed, including how it will be attached and sealed to the inside of the manhole and of what material the weir structure is to be.

PCSM Drawings Middletown Pump Station

1. Provide a full and complete Legend. There are numerous lines types shown which are not identified or provided for in the Legend. 25 Pa Code § 102.8(f)(9)

2. Identify the ESCGP-2 Permit Boundary. 25 Pa Code § 102.8(f)(9)
3. On Sheet 2, expand on the proposed construction techniques or special considerations to address the limitation of piping. Ensure all stormwater inlets and pipes are watertight. 25 Pa Code §§ 102.8(f)(2) & 102.8(g)(5)
4. On Sheet 5, the plan and table indicate the top rim of the basin outlet is at an elevation of 342.00, however, the detail on Sheet 8 indicates a top elevation of 340. Clarify the discrepancy and ensure the plans are consistent with the calculations. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(9)
5. On Sheet 5, in the Proposed Storm Pipe Table, clarify Inlet 3 top of grade elevation. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(9)
6. On Sheet 3, clarify the symbol shown on the plans, which are located at the end of diversion channel #1 and at the end of diversion channel #4. Ensure to provide associated details, if applicable. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(9)
7. Diversion Channels 2-3 are directed into the Infiltration Berm#1. Are the diversion channels supposed to be directed to the infiltration berm or diverted around the project site? The drainage area to the infiltration berm is not clear, so it cannot be confirmed if these contributing areas were included in the Berm analysis. Clarify the function of the diversion channels. 25 Pa Code §§ 102.8(f)(4) & 102.8(f)(6)
8. Channel 10 appears to now direct stormwater to an existing infiltration bed. Provide a demonstration to show that the existing infiltration bed can handle the additional water and will function as designed. 25 Pa Code §§ 102.8(f)(4), 102.8(f)(8) & 102.8(f)(9)
9. Clarify if geotextile fabric is proposed to be wrapped around all of the stone in the infiltration bed, as the detail is not clear. Update the detail accordingly. 25 Pa Code § 102.8(f)(6)
10. The Infiltration berm details show the outlet structures as '2 foot by 2 inch precast yard drain' and the plans indicate a 2 foot by 2 foot yard drain. Clarify the discrepancy. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(9)
11. Provide additional information for the infiltration berms, including providing dimensions and specifying the E&S blanket, to ensure they are constructed per the design. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(9)

12. Identify how the infiltration bed will be inspected to ensure that it is properly and completely dewatering. Provide a way to inspect the bottom of the infiltration trench to ensure proper dewatering. 25 Pa Code §§ 102.8(f)(6), 102.8(f)(9) & 102.8(f)(10)
13. Clarify if the Compost Sock Washout Installation will be a permanent feature or only used during construction. If it is not permanent, remove it from the PCSM Plan. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(9)
14. The details for the level spreader are not sufficient to be able to construct the BMP. Provide additional detail information, including the dimensions, materials, specifying the Erosion Control blanket and if it is temporary or permanent, etc. 25 Pa Code §§ 102.8(f)(6), 102.8(f)(9) & 102.8(f)(15)
15. The following comments relate to the long-term operation and maintenance (O&M) schedules for PCSM BMPs: 25 Pa Code §§ 102.8(f)(10) & 102.8(f)(9)
 - a. Expand on the Detention Basin schedule to include measures to repair and replace to ensure proper function and operation.
 - b. Expand on the Infiltration berm schedule to include measures to repair and replace to ensure proper function and operation. Additionally specify 'major storm events' as it is a subjective phrase. This specification will also ensure the applicant is aware of the required inspection schedule.
 - c. Provide a schedule for the infiltration bed.
 - d. Expand on the rip rap apron schedule to include replacement.
 - e. Provide O&M schedule for the Fabco stormbasin inserts. Clarify what cartridges are required in the detail.
 - f. Provide a schedule for the Fabco Connector pipe screen or incorporate it into the overall PCSM BMP schedule.
 - g. Provide a schedule for inspecting the vegetate channels.
 - h. Provide a schedule for the level spreader.

16. Provide the water bar details and associated operation and maintenance schedule that is associated with the Corrective Action Plan (CAP) on the PCSM Plan. 25 Pa Code §§ 102.8(f)(6), 102.8(f)(9) & 102.8(f)(10)

PCSM Drawings Beckersville Pump Station

1. Provide a full and complete Legend. There are numerous lines types shown which are not identified or provided for in the Legend. 25 Pa Code § 102.8(f)(9)
2. Identify the ESCGP-2 Permit Boundary. 25 Pa Code § 102.8(f)(9)
3. On Sheet 2, provide the depth and slope of the on-site soils and geology. Expand on the proposed construction techniques or special considerations to address the limitation of piping. Ensure all stormwater inlets and pipes are watertight. 25 Pa Code §§ 102.8(f)(2) & 102.8(g)(5)
4. On Sheet 4, clearly identify the drainage areas and delineate the boundaries on the pre-development and post-development drainage area maps. While the maps are provided, the drainage areas are not clear. 25 Pa Code §§ 102.8(f)(4) & 102.8(f)(9)
5. On Sheet 3, the plan shows the basin outlet structure connecting to MH #2, however, the detail on Sheet 5 shows the basin outlet structure connecting to MH #3. Clarify the discrepancy. 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(9)
6. Provide additional contour labels to clarify the proposed site grading. 25 Pa Code §§ 102.8(f)(7) & 102.8(f)(9)
7. The proposed contours associated with the infiltration berm do not tie into existing contours. Clarify how this area is to be graded. 25 Pa Code §§ 102.8(f)(7) & 102.8(f)(9)
8. Clarify on the plan if there is any associated work proposed on the plan for the existing riprap apron, EX RRA, or if it currently meets the design and associated detail. The plan is not clear, but includes this area within the Limit of Disturbance (LOD). 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(9)
9. Provide additional information for the infiltration berms to ensure proper construction, including providing dimensions and specifying the E&S blanket. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(9)

10. Clarify if the Compost Sock Washout Installation will be a permanent feature or only used during construction. If it is not permanent, remove it from the PCSM Plan. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(9)
11. The following comments relate to the long-term operation and maintenance (O&M) schedules for PCSM BMPs: 25 Pa Code §§ 102.8(f)(10) & 102.8(f)(9)
 - a. Expand on the Detention Basin schedule to include measures to repair and replace to ensure proper function and operation.
 - b. Provide a schedule for the infiltration berm.
 - c. Expand on the rip rap apron schedule to include replacement.

The following are comments, not technical deficiencies, provided regarding the design of the E&S and PCSM Plans, that DEP and the Districts would like Sunoco Logistics, L.P. and their consultant team to consider.

- A. The Lebanon County Conservation District recommends utilizing Jute Matting for the stabilization of the areas adjacent to flowing surface waters. Jute Matting appears to have better performance and stability for flowing water versus other 'standard' erosion control blankets.
- B. It is recommended to consider placing waterbars at the ends of the rock construction entrances, to avoid concentrated runoff leaving the site via the rock construction entrance (e.g. Stations 10950+60, 11035+00 & 11048+50)
- C. It appears that erosion control matting/blankets may be used in areas where livestock will be present. The use of certain types of erosion control matting/blankets may be harmful to livestock. Consideration should be given to using erosion control matting/blankets that are not harmful to livestock, in the areas where livestock will be present after construction.
- D. Crownvetch is an invasive species. Consideration should be given to removing any invasive species from the E&S and PCSM Plans.

Pursuant to 25 Pa Code § 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 7th, 2016 or DEP may consider the application to be withdrawn by the applicant.

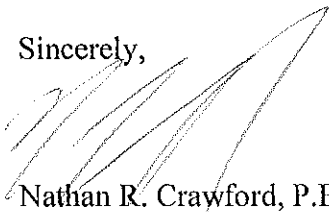
You may request a time extension in writing before November 7th, 2016 to respond to deficiencies beyond the sixty (60) calendar days. Requests for time extensions will be received by DEP and considered. You will be notified in writing of the decision either to grant or deny, including a specific due date to respond if the extension is granted. Time extensions should be in accordance with 25 Pa Code § 102.6(c).

Please submit one (1) copy of the revised E&S/SR and PCSM Plan drawings & narratives to all of the County Conservation Districts, one (1) copy of the revised E&S/SR and PCSM Plan drawings & narratives to Mr. William Himes at DEP's Altoona District Office at 3001 Fairview Drive, Altoona, PA 16602 and the two (2) copies of the revised E&S/SR and PCSM Plan drawings & narratives to the DEP South-central Region at 909 Elmerton Avenue, Harrisburg, PA 17110-8200.

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. Please 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 the 717.705.4798, and refer to ESG0300015001, 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,



Nathan R. Crawford, P.E.
Permits Section Chief
Waterways & Wetlands Program

Enclosure

cc: Mr. Robert Simcik, P.E., Tetra Tech
Berks County Conservation District
Blair County Conservation District
Cumberland County Conservation District
Dauphin County Conservation District

Huntingdon County Conservation District
Juniata County Conservation District
Lancaster County Conservation District
Lebanon County Conservation District
Perry County Conservation District
York County Conservation District
Brecknock, Caernarvon, Cumru, Robeson, South Heidelberg & Spring Townships and New
Morgan Borough, Berks County
Allegheny, Blair, Frankstown, Juniata & Woodbury Townships, Blair County
Lower Allen, Lower Frankford, Lower Mifflin, Middlesex, Monroe, North Middleton,
Silver Spring, Upper Allen & Upper Frankford Townships, Cumberland County
Conewago, Derry, Londonderry & Lower Swatara Townships and Highspire &
Middletown Boroughs, Dauphin County
Penn, Shirley, Tell & Union Townships, Huntingdon County
Lack Township, Juniata County
Clay & West Cocalico Township, Lancaster County
Heidelberg, South Annville, South Lebanon, South Londonderry & West Cornwall
Townships and Cornwall Borough, Lebanon County
Jackson & Toboyne Townships, Perry County
Fairview Township, York County



OFF-SITE DISCHARGES OF STORMWATER TO AREAS THAT ARE NOT SURFACE WATERS

Both construction and post construction stormwater runoff is to be managed through project layout design and best management practices (BMPs) to replicate the stormwater volume, rate and quality of predevelopment conditions. Some sites, after consideration of possible project design and BMP options, do not have direct access to surface waters to discharge stormwater runoff. Applicants for National Pollutant Discharge Elimination System (NPDES) Permits for stormwater discharges associated with construction activities may propose off-site discharges of stormwater to areas that are not surface waters. In these cases, the applicant must have the legal authority to discharge stormwater onto off-site areas. The applicant must also provide documentation that the discharge will not cause accelerated erosion or stormwater damage on the adjacent properties. This documentation is required with the permit application showing that the applicant has avoided, minimized or mitigated accelerated erosion and stormwater impacts.

Off-Site Discharge Analysis for Developers

Persons proposing to discharge must have the authority to discharge through either a common law easement or an express easement. For sites that discharge to existing swales, ditches or similar structures where the new activities will not result in a change in volume or rate of stormwater runoff, the existing common law easement can be relied upon. In cases where an existing swale, ditch or similar structure is not present, an express easement will be necessary when there will be a change in volume or rate of stormwater. If an express easement is necessary, the following information should be obtained by the project applicant:

1. Obtain the names and addresses of all property owners directly receiving stormwater from the project that is not discharged to a surface water;
2. Evaluate stormwater flows (frequency and amount) onto these properties prior to the construction of the project;
3. Evaluate the nature and scope of all changes to the natural drainage characteristics for all stormwater discharged during construction and after construction is completed;
4. Evaluate the volume, rate and frequency of pre-construction, construction and post construction stormwater discharges from the project. Also evaluate the means of flow onto the adjoining properties.

This information should then be utilized by the applicant to obtain the necessary express easements to lawfully discharge the stormwater to off-site areas. If there will be an increase in stormwater to off-site areas and no express easement is obtained, the activity could be found to be a trespass which would nullify permit coverage and could subject the permittee to liability for damages in any private action pursued by adjacent landowners.

Demonstrating that no Accelerated Erosion or Damage from Stormwater will Occur

No matter what type of authorization for easements the applicant obtains for off-site discharges of stormwater, the applicant must also document that the construction and post construction stormwater discharge to areas other than surface waters will not cause accelerated erosion or damage to down slope or adjacent properties. Applicants should use guidance from the *Erosion and Sediment Pollution Control Program Manual* (363-2134-008) and the *Pennsylvania Stormwater Best Management Practices Manual* (363-0300-002) when developing the following information with their NPDES permit applications:

- On the plan drawings, identify all properties and property owners that may directly receive off-site stormwater discharges from the project site.
- On the plan drawings, identify the flow path from discharge point to the confluence with a surface water of Pennsylvania. In addition, identify the soil types, erodibility factors and vegetative cover of the flow path.
- Provide documentation that the proposed volume and rate of stormwater discharging to the flow path will not cause accelerated erosion or sedimentation and/or is consistent with the *Erosion and Sediment Pollution Control Program Manual* (363-2134-008) and the *Pennsylvania Stormwater Best Management Practices Manual* (363-0300-002).
- In the written narrative portion of the plans, provide an analysis that demonstrates how the applicant has avoided, minimized or mitigated stormwater discharges to prevent accelerated erosion or damage to the down slope or adjacent properties.

For more information, visit www.dep.state.pa.us, keyword: NPDES Construction and Erosion Control, or contact your local DEP Waterways and Wetlands program at one of the following regional offices:

WATERWAYS AND WETLANDS PROGRAM

Northwest Regional Office
230 Chestnut St.
Meadville, PA 16335-3481
814-332-6984

*Butler, Clarion, Crawford,
Elk, Erie, Forest, Jefferson,
Lawrence, McKean,
Mercer, Venango and
Warren*

Southwest Regional Office
400 Waterfront Dr.
Pittsburgh, PA 15222-4745
412-442-4315

*Allegheny, Armstrong,
Beaver, Cambria, Fayette,
Greene, Indiana, Somerset,
Washington and
Westmoreland*

North-central Regional Office
208 W. Third St., Suite 101
Williamsport, PA 17701-6448
570-327-0529

*Bradford, Cameron,
Centre, Clearfield, Clinton,
Columbia, Lycoming,
Montour, Northumberland,
Potter, Snyder, Sullivan,
Tioga and Union*

South-central Regional Office
909 Elmerton Ave.
Harrisburg, PA 17110-8200
717-705-4802

*Adams, Bedford, Berks, Blair,
Cumberland, Dauphin,
Franklin, Fulton, Huntingdon,
Juniata, Lancaster, Lebanon,
Mifflin, Perry and York*

Northeast Regional Office
2 Public Square
Wilkes-Barre, PA 18701-1915
570-826-2511

*Carbon, Lackawanna,
Lehigh, Luzerne, Monroe,
Northampton, Pike,
Schuylkill, Susquehanna,
Wayne and Wyoming*

Southeast Regional Office
2 East Main St.
Norristown, PA 19401-4915
484-250-5970

*Bucks, Chester, Delaware,
Montgomery and Philadelphia*

DEP Central Office
Bureau of Waterways Engineering and Wetlands
Division of NPDES Construction and Erosion Control
P.O. Box 8460
Harrisburg, PA 17105-8460
717-787-3411
Fax 717-772-0409