



PITT-02-17-005

February 6, 2017

Project Number 112IC05958

Ms. Ann Roda
 Director, Department of Environmental Protection
 Rachel Carson State Office Building
 400 Market Street
 Harrisburg, PA 17101

Re: Sunoco Pipeline L.P. – Pennsylvania Pipeline Project (Mariner East II)
 Permit No. ESG 0500015001
 Construction Spreads 1 through 6
 Technical Deficiency Response

Dear Ms. Roda:

On behalf of our client, Sunoco Pipeline L.P. (SPLP), Tetra Tech, Inc. provides the following responses to the Pennsylvania Department of Environmental Protection (DEP) Technical Deficiency Response letters dated January 27, 2017 and January 30, 2017 regarding the above-referenced ESCGP-2 Permit Application. The supporting attachments represent a revision of the ESCGP-2 Application in response to the comments received.

For ease of your review, each DEP item is set forth bolded verbatim below, followed by an italicized narrative response.

Comments and Responses to January 27th and January 30, 2017 Technical Deficiency Response

B. ESCGP2 Applications		
Pg. 4 1.	DEP	Act 167 and Stormwater Verification - For the ESCGP-2 - In any applicable County or Municipality where a current and approved Act 167 Plan exists and Sunoco has not obtained an Act 167 Stormwater Consistency Letter from the County or Municipality, they need to submit the Act 167 Stormwater verification report required by the ESCGP-2 for each county. In addition to providing the verification reports, Sunoco needs to confirm which Ch. 102 design standard they used—Option 1- the regulatory standards in 102.8(g)(2) and 102.8(g)(3) or the Act 167 design standards or an alternate standard. The ESCGPs are not clear on which standard they did the design to.
	<i>SPLP Response:</i>	<i>Act 167 Verification Reports are included in the regional ESCGP-2 applications under Tab 5. Act 167 verification reports are provided by county and includes discussion of PCSM BMP design standards at block valves or pump stations. A “Block Valve and Pump Station PCSM Design Standard Table” has been added to the PCSM Report. This table outlines which design standards, either 102.8(g)(2) and 102.8(g)(3) or Act 167 Plans, were used to design PCSM BMPs at block valves and pump stations. The updated NOI Attachment 5, Act 167 verification reports, and Site Restoration and Post Construction Stormwater plan for the entire application will be provided to Department in electronic format on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site</i>

Pg. 4 2.	DEP	Antidegradation Analysis <ul style="list-style-type: none"> • Provide a separate Section G for each site that is not part of this linear analysis (i.e. block valve sites, stations, etc.)
	SPLP Response:	<p>Section G of the NOI has been revised and added to the 102 application for the portions of the project that are not part of the linear analysis, which includes block valve sites and pump stations. The Section G revisions have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</p>
Pg. 4 2.	DEP	<ul style="list-style-type: none"> • Provide a separate Section G for sites that discharge to receiving surface waters that are impaired for siltation.
	SPLP Response:	<p>Section G of the NOI has been revised and added to the 102 application to include sites that discharge to receiving surface waters that are impaired for siltation. The Section G revisions have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</p>
Pg. 5 2.	DEP	<ul style="list-style-type: none"> • Amend the PCSM report to include documentation and justification to support that the proposed pipeline (mainline) restoration adequately addresses 102.8(n). This should specifically address: 102.8(b), (c), (e), (f), (h), (i), (l), and (m) for the entire pipeline (mainline) restoration.
	SPLP Response:	<p>Section 3.7 of the Site Restoration and Post-Construction Stormwater Management Plan has been updated to document the mainline pipeline's compliance with 102.8(n), which also specifically addresses 102.8(b), (c), (e), (f), (h), (i), (l), and (m) for the pipeline (mainline) restoration. The new PCSM Plans have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</p>
Pg. 5 3.	DEP	Infiltration/Calculations <ul style="list-style-type: none"> • Provide additional discussion as to why the single-ring falling head infiltration test is an appropriate testing methodology

	<p><i>SPLP Response:</i></p>	<p><i>Appendix C of the PCSM Manual does not dictate methods to be used, but provides example Methodologies and further discusses the double-ring methodology. The Manual also lists other testing methods and standards and indicates that the list is “not limited to” just these methods. The single-ring falling head test is ASTM approved (ASTM D5126) and is commonly used in determination of infiltration rates. Single-ring falling head tests were only performed at four sites when site-specific conditions did not allow for application of a double-ring test (need to perform single-ring tests at a given location is discussed in its Infiltration Testing Trip Reports). Further, for these four sites, Infiltration Testing results and subsequent recommended rates were not used since these sites are now vegetated.</i></p> <p><i>ASTM D5126 (Standard Guide for Comparison of Field Methods for Determining Hydraulic Conductivity in Vadose Zone) explicitly cites the single-ring infiltrometer method as an alternative approach to determining field saturated hydraulic conductivity of unsaturated materials above the water table (Section 4, subsection 4.1.1, see attachment 102-3a). While this specific ASTM method is not cited in Appendix C of the PCSM Manual, the alternative double-ring method by ASTM D3385 is cited by both Appendix C of the PCSM Method and ASTM D5126. Therefore, when site-specific conditions do not allow for completion of a double-ring test, completion of the tests with the single-ring infiltrometer approach is a valid substitution. Per the ASTM, the fundamental assumptions of the infiltrometer tests are valid with either application of the double- or single-ring testing approach (Section 4.1.1.3, see attachment “Infiltration Test Method D5126-2004,” posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.)</i></p> <p><i>During the 2015 field work for Infiltration Testing, by Tetra Tech EMI of Newark, Delaware utilized the double-ring method by ASTM D3385 and single-ring method by ASTM D5126 when site conditions did not allow for double-ring testing. During both the 2015 and 2016 field work completed by Tetra Tech NUS of Pittsburgh, Pennsylvania, utilized the double-ring method for all testing as outlined by Appendix C of the PCSM Manual. Table 1 distinguishes which test was completed at each site.</i></p>
<p>Pg. 5 3.</p>	<p>DEP</p>	<ul style="list-style-type: none"> • Incorrect infiltration rate was used in the PCSM calculations. <ul style="list-style-type: none"> ○ I.e. at the Fairview Road Valve Site an infiltration rate of 0.3 inches/hour was incorrectly used in the PCSM calculations. According to the submitted Table 1 in Section 5 of Volume IV, the recommended infiltration rate is 0.2 inches per hour
	<p><i>SPLP Response:</i></p>	<p><i>The PCSM drawings and calculations have been reviewed for consistency with the recommended infiltration rates and revised where necessary. Discrepancies were noted and resolved for the following block valve sites: Bush Road, Newport Road, Cooney Road, High Street, and Gates Road. Several additional sites, including Fairview Road, had discrepancies; but will now be vegetated and will not require PCSM infiltration BMPs. These sites include: Westinghouse Road, Kozak Road, Chestnut Ridge Road, Grange Hall Road, Juniata Valley Road, Raystown Road, Seven Points Loop, Happy Hills Road, Hares Valley Road, Wolf Bridge Road, W. Trindle Road, Arcona Road, N Union Street, Schaeffer Road, Sinclair Road, Hopeland Road, Montello Road, Wyomissing Road, Fairview Road, E. Lincoln Highway, Middletown Road, S. Pennell Road, Morgantown Road, Boot Road, and Old York Road. The new PCSM Plan has been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>

Pg. 5 3.	DEP	<ul style="list-style-type: none"> • Middletown Road Valve Site (Vegetated Cover) [102.8(f)(2)], [102.8(f)(4)] <ul style="list-style-type: none"> ○ No PCSM calculations were provided for this Valve Site. Please justify accordingly. 																				
	SPLP Response:	<p><i>The Middletown Road block valve does not propose an impervious surface. This utility infrastructure site will be returned to meadow in good condition, which is equal to or better than existing conditions. As a result, the block valve fulfills the requirements outlined in Chapter 102.8(n), which includes compliance with subsections (b), (c), (e), (f), (h), (i), (l), and (m).</i></p> <p><i>Additional block valve sites, which are listed in response to comment 3b, will also be vegetated and fulfill the requirements outlined in Chapter 102.8(n).</i></p> <p><i>Language has been added to Section 4.0 of the Site Restoration and Post-Construction Stormwater Plan in response to this comment. The new PCSM Plan has been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>																				
Pg. 5 4.	DEP	<p>Chapter 105 consistency</p> <ul style="list-style-type: none"> • Reference to the Chapter 105 permit applications is not sufficient <ul style="list-style-type: none"> ○ I.e. The response provided for TD No. 40 from Southcentral Region identifies that the Alternatives Analysis provided with the Chapter 105 permit applications includes the requested information. 																				
	SPLP Response:	<p><i>The table below identifies where 105 was referenced within the 102 Technical Deficiency responses. The following documents provided in the 105 application have been added to the 102 application.</i></p> <table border="1" data-bbox="500 1115 1471 1587"> <thead> <tr> <th>Regional Application</th> <th>Comment response where reference was made</th> <th>Chapter 105 permit document incorporated into Chapter 102 permit</th> </tr> </thead> <tbody> <tr> <td rowspan="2">SWRO</td> <td>Page 3, #6.a</td> <td>Chapter 105 -Project Description, Chapter 105 - Minimization, Avoidance, and Mitigation Procedures</td> </tr> <tr> <td>Page 5, #14</td> <td>Chapter 105 -Alternatives Analysis</td> </tr> <tr> <td rowspan="3">SCRO</td> <td>Page 4, #5.a</td> <td>Chapter 105-Project Description</td> </tr> <tr> <td>Page 6, #13</td> <td>Chapter 105 -Alternatives Analysis</td> </tr> <tr> <td>Page 16, #40</td> <td>Chapter 105 -Alternatives Analysis</td> </tr> <tr> <td rowspan="2">SERO</td> <td>Page 3, #5.a</td> <td>Chapter 105-Project Description</td> </tr> <tr> <td>Page 6, #13</td> <td>Chapter 105 -Alternatives Analysis</td> </tr> </tbody> </table> <p><i>The documents are located in the following locations of the 102 application.</i> <i>Tab 13: Project Description</i> <i>Tab 14: Minimization, Avoidance, and Mitigation Procedures</i> <i>Tab 15: Alternatives Analysis</i></p> <p><i>These documents have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>	Regional Application	Comment response where reference was made	Chapter 105 permit document incorporated into Chapter 102 permit	SWRO	Page 3, #6.a	Chapter 105 -Project Description, Chapter 105 - Minimization, Avoidance, and Mitigation Procedures	Page 5, #14	Chapter 105 -Alternatives Analysis	SCRO	Page 4, #5.a	Chapter 105-Project Description	Page 6, #13	Chapter 105 -Alternatives Analysis	Page 16, #40	Chapter 105 -Alternatives Analysis	SERO	Page 3, #5.a	Chapter 105-Project Description	Page 6, #13	Chapter 105 -Alternatives Analysis
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Pg. 5 4.	DEP	<ul style="list-style-type: none"> • Ensure that the floodway has been revised per the deficiency from the 25 Pa. Code § 105 permit applications <ul style="list-style-type: none"> ○ I.e. ensure that the floodway has been revised per the deficiency from the 25 Pa Code § 105 permit applications; the floodway is 50-ft. from the top of bank, not the centerline of the stream.
	SPLP Response:	<p><i>In accordance with DEP's regulations, the identification of the floodway was determined using either the FEMA floodway, when FEMA mapping was available, or field survey/delineation data. For the all the crossings where there was no FEMA data, Tetra Tech collected site-specific data regarding the bank to bank width and centerlines. To delineate the assumed floodway of 50 feet from the top of bank when no FEMA mapping was available, Tetra Tech first identified the centerline of these watercourses, and then determined ½ the bank to bank width of that watercourse, and then added 50 feet to determine the assumed floodway boundary in the absence of the FEMA floodway. This methodology is explained within Section 2.8.1 of the Resource Identification and Impacts Report provided in Attachment 11, Enclosure E, Part 2.</i></p> <p><i>DEP comments and our review noted that some centerlines and bank to bank widths were not correctly determined from the collected data. DEP indicated that it believed that the Tuscarora Creek and Aughwick Creek were areas where the top of bank may have been incorrectly identified. To ensure the correct delineation of the assumed floodway, Tetra Tech has undertaken the re-evaluation of all watercourses where there is no FEMA designated floodway to ensure that the floodway is properly identified. Aerial photographs, field photographs, previous application submissions, field investigations (if necessary), and quality checks against the survey grade data, have been performed.</i></p> <p><i>We have had every stream top of bank to top of bank width checked against the field forms, delineation photographs, aerial photographs, and site-specific survey. The staff doing this were some of the same staff that performed the delineations and all of them are experienced wetland biologists. Many stream widths collected in the field by the delineators were overwritten with survey grade data when that was obtained after the March submission. This additional field effort accounted for the majority of the differences between the two submissions. While, the survey data provided accurate top of bank to top of bank widths, an additional QA/QC effort of the survey data indicated that some widths were overestimated with adoption the survey data. Specifically, Tetra Tech determined that of the 1508 streams widths checked, 14 stream widths were overestimated, therefore the floodway's and calculations at these locations are overestimated.</i></p> <p><i>We have also reviewed the stream data for centerline inaccuracies. This was limited to those streams that are readily identifiable on the aerials and therefore larger in size. We identified 9 stream alignments that are offset and would result in an inaccurate estimation of the floodway. However, at 5 of these stream locations, the FEMA floodway layer was available and that floodway was used in the mapping and calculations.</i></p> <p><i>The locations and revisions of the floodway have been summarized and revised on the 102 E&S and 105 site plans and new calculations provided within revised impact tables provided in the 105 submission. The updated E&S plans are provided as part of this addendum in electronic format on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>

Pg. 5 5.	DEP	Impairments/Designated and Existing uses <ul style="list-style-type: none"> • Identify the source and cause of an impairment for any stream which is impaired and not just for the siltation impaired streams <ul style="list-style-type: none"> ○ I.e. In all 5 Valve Sites (including the Vegetated Valve Site at Middletown Road) in the Southeast Region the applicant did not provide the impairments/TMDLs for the project
	SPLP Response:	<p><i>For each region, the PCSM Narrative, Table 1: “Block Valve and Station Summary Table,” has been updated to identify the source and cause of impairment for all receiving streams. This information has been added to the “Impairments” column of the summary tables. The updated Table 1s can be found in the PCSM Narrative for each respective region and have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>
Pg. 5 5.	DEP	<ul style="list-style-type: none"> • Verify that the Receiving Waters Table clearly identifies the receiving surface waters and their Designated and Existing Uses <ul style="list-style-type: none"> ○ I.e. It appears that there are sections of Hay Creek which have different Designated Uses and some sections which have an Existing Use ○ I.e. The Receiving Water Table and the Receiving Wetlands Table are both identified for the Southwest Region, not the Southcentral Region in the Southcentral Region submission
	SPLP Response:	<p><i>The Designated and Existing uses of all of the streams have been reviewed and verified. Upon review, three Berks County tributaries have been revised in the receiving waters table. UNT to Sleepy Hollow Run has been added to the table in Brecknock Township (Existing use: HQ-CWF; Designated use: CWF). Rock Run and UNT to Rock Run have been added to the table in Brecknock and Robeson Townships (Designated Use: HQ-CWF; Existing Use: none). Hay Creek has been updated to reflect its Existing Use (HQ-CWF) and its Designated Use (EV) in New Morgan Township. Also, a portion of Hay Creek in New Morgan Township has been revised to show the corrected Designated Use (CWF). No other Existing Uses of tributaries have been identified throughout the length of the project that haven’t already been provided. (Data Source – PASDA). The South Central Region Receiving Waters Table has been updated in the NOI, E&S Report, and PCSM Report and has been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>
Pg. 6 6.	DEP	E&S <ul style="list-style-type: none"> • 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. These BMP details need to be provided.

	SPLP Response:	Each wetland crossing was considered and the designed compost filter socks (CFS) are appropriate to both control sediment and minimize disturbance to the wetland areas. When there was a need to show CFS at the edge of the LOD to facilitate construction or access, they are shown. At other instances, showing CFS at the edge of the wetland could increase disturbance to the wetland by forcing the installation and removal at the edge of the LOD when the CFS installation and removal could have been closer to the excavated trench. The contractor can utilize the wetland crossing detail to install the CFS to minimize the disturbance to the wetland. In other instances, where the wetland crossings are on site specific drawings, the site specific stream crossing supersede the E&S plan sheet. If changes or adjustments to the drawings were needed, those changes were made and the impacted sheets have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site .
Pg. 6 6.	DEP	<ul style="list-style-type: none"> For temporary upslope Diversion Berms, in Chester County, calculations must be provided.
	SPLP Response:	The information was provided in Volume II, Section 3 "Erosion and Sediment Control Plan", Attachment 4 "Construction Details and ES Calculations". Specifically it is located on pages 31 through 43 of the Clean Water Diversion Calculations.
Pg. 6 6.	DEP	<ul style="list-style-type: none"> The E&S Manual was revised per the Corrections For Erosion And Sediment Pollution Control Program Manual TGN 363-2134-008 Mach 2012, revise the Standard Construction Detail accordingly <ul style="list-style-type: none"> I.e. 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)
	SPLP Response:	Detail #13-4 in Attachment 4 of the E&S Narrative has been updated to the 2012 E&S Manual corrections. This change is applicable to Detail #13-4 in Attachment 4 of the E&S Narrative in all counties. Note that Sheet ES-0.10 for Blair County does not have a trench plug detail as it is on Sheet ES-0.08 in the December 2016 submittal and it is the correct detail. The trench plug detail was shown in Blair County on Sheet ES-0.08 in the March 2016 submittal, but that has been superseded by the December 2016 submittal. The trench plug detail was reviewed on the E&S Plan Sheets in all counties and the correct detail is presented in all counties. The revised detail is posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site
Pg. 6 6.	DEP	<ul style="list-style-type: none"> Southwest Region did not receive a hard copy of the E&S Control Plan for Washington County. Please submit these.
	SPLP Response:	Hard copies of the December 2016 Washington County E&S Control Plan drawings (full size and half scale) were provided to Greg Holesh at SWRO on January 30, 2017. A copy of the proof of delivery is provided to Department in electronic format posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site .

Pg. 6 7.	DEP	<p>Areas of Temporary Stabilization and/or Access – Compaction</p> <ul style="list-style-type: none"> • There is concern that by using tracked equipment for multiple passes may compact areas more instead of de-compacting. <ul style="list-style-type: none"> ○ I.e. the Construction Sequence in the E&S Plan drawings (sheet ES-0.03); provide detail as to how applicant will de-compact soils to allow for infiltration and post construction restoration and stormwater planning.
	SPLP Response:	<p><i>The construction sequence in the E&S Plan drawings was reviewed per the comment. Step 17 of the construction sequence has been revised in all counties to the following:</i></p> <p><i>Step 17. In areas that used stone or timber mats for temporary stabilization and/or access, the stone or mats will be removed and, if needed, the soil will be scarified or ripped to a depth of 8-12 inches to de-compact the soil. After reestablishing preconstruction contours, topsoil will be replaced to a minimum depth of 4-8 inches and seeded and mulched. Vehicular traffic after restoration should be restricted from areas to prevent soil compaction.</i></p> <p><i>The E&S narrative Section 3.4, Primary Construction Activities, subsection Minimization of Soil Compaction has been updated to be consistent. The updated E&S narratives for the entire application is posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>
Pg. 6 8.	DEP	<p>In at least York county there are inconsistencies between E&S Plan drawings. In other areas of the application other portions of the application, the stream under boulder field is not visible, but needs appropriate BMP sand some flow paths appear to be going to existing structures.</p>
	SPLP Response:	<p><i>E&S drawings have been reviewed for consistency to assure appropriate controls are being referenced. The stream identified with boulder field is S-H56 located on sheet ES-4.20. The HDD in this area has been revised to extend under stream S-H56. The E&S BMPs have been updated accordingly. New sheets for this area are posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site</i></p>
Pg. 6 9.	DEP	<p>E&S Calculations – there are deviations from the recommended approaches, or the calculations are missing. Where missing the calculations must be provided; where they deviate from the recommended approaches, an explanation should be provided that explains how the alternate approach will adequately protect waters of the Commonwealth.</p>
	SPLP Response:	<p><i>All of the controls were designed in accordance with BMP manual. All of the appropriate calculations were provided in either the E&S control plans or Narrative. Additionally, the design methodology for the controls were discussed and confirmed with PADEP during the coordination calls in September through December. A thorough QA/QC was performed to ensure all of the calculations are included within the E&S drawing or narrative. It is SPLP’s understanding that this comment is in reference to the ECB design for the clean water diversion “channels”. ECB’s have been designed and calculations provided.</i></p>
Pg. 6 10.	DEP	<p>The following is a summary of the discussion regarding the use of vegetated Geoweb from the conference call on January 27, 2016.</p>

	<p><i>SPLP Response:</i></p>	<p><i>As explained during the January 27, 2016 conference call, Geoweb cells will be used to reinforce the topsoil and filled with a mix of topsoil and aggregate to ensure the soil media can support a vegetative ground cover. The use of this topsoil/aggregate mix, in a ratio of two-thirds aggregate (AASHTO #57) and one-third screened topsoil, was selected based on the manufacturer's recommendation for load support combined with infiltration. AASHTO #57 is an open graded permeable aggregate with a void ratio of approximately 35-40 percent. At one-third of the mixture, the percentage of topsoil in the infill mix closely approximates the void ratio of the aggregate so that the aggregate supports the vehicular loads when confined in the Geoweb cells while the topsoil supports vegetation growth and permits infiltration.</i></p> <p><i>Seeding the Geoweb area will establish ground cover of a meadow condition or better. As a result of establishing ground cover of a meadow condition or better and because the aggregate, topsoil, Geoweb, and stabilization geotextile are all permeable, they will promote infiltration. In addition, once installed, the Geoweb reinforced topsoil will help in preserving the subsoils in their decompacted state because the Geoweb will distribute vehicular loads and prevent rutting. Based on the discussion on the call and this clarification, we understand that this will close this matter and we will move forward with vegetated Geoweb at block valves, where required, based on stormwater calculations or physical constraints of the sites.</i></p> <p><i>Revised block valve designs, notes, and narratives for the entire application have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>
<p>I. <u>Southeast Regional Office</u></p>		
<p>A. <u>Chapter 102 Permit</u></p>		
<p><u>Erosion and Sedimentation Technical Deficiencies consistent with all Counties</u></p>		
<p>The following comments were noted in the September 6, 2016 technical deficiency letter and remain with the application.</p>		
<p>Pg. 7 1.</p>	<p>DEP</p>	<p>The diversion berm needs to have all necessary calculations presented for it. Also the diversion berms need to have a stable flow path from the end of the diversion berm to a surface water or some type of BMP to disperse the flow to a sheet flow condition. Using stacked sock for diversion may not be appropriate. Specification for the growing media should be given in Table similar to table 4.2 Compost standards.</p>
	<p><i>SPLP Response:</i></p>	<p><i>The clean water diversion calculations have been provided. ECB's for the clean water diversion "Channels" have been designed and the calculation provided. Level spreaders at the discharge of the slope pipes have been designed and the calculations provided. A detail of the level spreader has been provided and will be installed on at a level elevation. After the perimeter controls are removed, the stone used at the level spreader shall be removed and the areas will be restored in accordance with the E&S plan. The clean water diversion calculations are provided in Attachment 4 of the E&S Report and have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>

<u>Erosion and Sedimentation Technical Deficiencies For Chester County</u>		
The following comments were noted in the September 6, 2016 technical deficiency letter and remain with the application.		
Pg. 7 1.	CCCD	Comment 1 - The designer indicates Compost sock is indicated but the contractor can use the silt fence in Non Specially Protected Watersheds and provided a table for the contractor to use for slope lengths and silt fence requirements. It is not the contractor's job or responsibility to design the E&S Controls and the designer should either properly propose silt fence at appropriate locations and update the legend accordingly or remove the silt fence details and associated notes. [25 Pa. Code §§ 102.11(a)(1)]
	<i>SPLP Response:</i>	<i>All references to silt fence have been removed from E&S report. The updated E&S narrative, E&S Attachment 2-E&S Plan Sheets, and E&S-Attachment 4-Construction Details and E&S Calculations, for the entire application, will be provided to Department in electronic format on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 7 2.	CCCD	Comment 6 - The response referred to sheet ES-0.04. The information requesting addressing IR could not be found on this page or surrounding pages, please specifically note where the information can be found if added, in not added, please add to the plans. [25 Pa. Code §§ 102.11(a)(1)]
	<i>SPLP Response:</i>	<i>The response can be found on ES-0.03 in the Construction Sequence For Conventional and HDD Bore Crossings. This E&S sheet has been provided to Department in electronic on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 7 3.	CCCD	Comment 7 - The note provided in TetraTech's response could not be found. It is still observed that the site restoration plans do not fully and specifically address site restoration throughout the entire Right of Way. [25 Pa. Code §§ 102.11(a)(1) and (2)]
	<i>SPLP Response:</i>	<i>The Site Restoration paragraph has been updated to address the comment previously obtained. The following sentence has been added to this paragraph located on ES-0.20. The third sentence reads: "The entire right-of-way will be restored back to a meadow condition or lawn in accordance with the Permanent Revegetation plan on ES-0.04". The up-front E&S Sheets have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 7 4.	CCCD	Comment 10 - Water bar discharge to a sump area and then compost sock was not provided. [25 Pa. Code §§ 102.11(a)(1)]
	<i>SPLP Response:</i>	<i>The water bar detail is in accordance with the detail provided in DEP's E&S manual. Sumps are added as needed to provide additional sediment removal prior to discharge thru the 18" CFS. The standard detail is provided in application. The up-front E&S Sheets have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>

Pg. 7/8 5.	CCCD	Comment 16 - Not fully addressed. Compost sock slope lengths are exceeded through-out the project. For an example please see station 14518+00. 12" sock in this location has a 600' + slope length. These perimeter controls will quickly fail in a storm event. Please reevaluate all perimeter controls. In a lot of cases the maximum size sock may be required in additional to other BMPs such as diversions, immediate stabilization measures etc. [25 Pa. Code §§ 102.11(a)(1)]
	SPLP Response:	<i>The CFS's have been designed and sized in accordance with the DEP's E&S Manual. Where the up slope length and slope are in excess of the allowable design parameter for CFS, a water bar or clean water diversion has been proposed to act as a slope break. At the above referenced location, the clean water diversion and water bars limit the up slope length to allow for a 12-inch CFS.</i>
Pg. 8 6.	CCCD	Comments 17 & 18 - Not addressed. The CCCD requests the use of a minimum of 24" filter sock adjacent to streams and wetlands per 102.4(C). Additionally steep slopes down to water way crossings are not being adequately protected. Please address. [25 Pa. Code §§ 102.11(a)(1) & 102.4(c)]
	SPLP Response:	<i>The Chester County E&S plans have been updated to a minimum of 24-inch CFS adjacent to streams and wetlands. The Chester County E&S Plan set can be found in Attachment 2 of the E&S Report and posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site..</i>
Pg. 8 7.	CCCD	Comments 19 & 20 - Not addressed. Specific stream crossing blow ups should be part of the full sized set of plans for use during construction. Each blow up should clearly illustrate the full E&S control layout. [25 Pa. Code §§ 102.11(a)(1)]
	SPLP Response:	<i>The full sized site specific stream crossing plans are part of the full set of construction drawings that will be utilized by the contractor to install the pipeline. The site specific plans show the appropriate E&S controls to complete the stream crossing. The site specific plans supersede the E&S plans for the E&S controls.</i>
Pg. 8 8.	CCCD	Comment 23 - Compost sock not shown through wetland area WL-C49, check this area and rest of plans. [25 Pa. Code §§ 102.11(a)(1)]
	SPLP Response:	<i>CFS has been added to the perimeter of WL-C49.</i> <i>Each wetland crossing was considered and the designed CFS are appropriate to both control sediment and minimize disturbance to the wetland areas. When there was a need to show CFS at the edge of the LOD to facilitate construction or access, they are shown. At other instances, showing CFS at the edge of the wetland could increase disturbance to the wetland by forcing the installation and removal at the edge of the LOD when the CFS installation and removal could have been closer to the excavated trench. The contractor can utilize the wetland crossing detail to install the CFS to minimize the disturbance to the wetland. In other instances, where the wetland crossings are on site specific drawings such as the four provide in Chester, the site specific stream crossing supersede the E&S plan sheet. If changes or adjustments to the drawings were needed, those changes were made and included in the E&S drawings posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>

Pg. 8 9.	CCCD	Comments 26 & 27 - Not fully addressed. The CCCD offers the following comment: The provided restoration plan that is coupled with the E&S Control Plan does not specifically or clearly cover full restoration requirements for the entire disturbance along the Right of Way. The CCCD recommends that each plan map sheet be updated with the required restoration standards for each section of pipeline disturbance. Existing lawn areas should be specified to be returned to lawn; cleared wooded areas should be restored to brushy meadow or similar within the ROW outside the ROW in Temporary Workspaces, re-wooded/ treed; Ag land restored to Ag Land, etc. All individual seed mixes and planting requirements should be included in the detail sheets of the plans and plan mapping can cross reference back to these mixes and plantings. Additionally the site restoration notes and details should clearly address de-compaction of the entire ROW to pre-construction levels and topsoil replacement in addition to the information already provided on the plans. [25 Pa. Code §§ 102.11(a)(1)& (2)]
	SPLP Response:	<i>The plans provided identify, in general, the existing ground cover [paved, well vegetated, or wooded areas]. As stated in Section 3.4 of the E&S Plan the disturbed areas will be restored to pre-disturbance vegetated condition in accordance with the specified seeding schedule. Soil decompaction and topsoil replacement is addressed in the Site Restoration construction sequence narrative and on sheet ES-0.22 numbers 2 and 3, respectively. Updated E&S is posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site</i>
Based on review of the submission to address the September 6, 2016 technical deficiency letter the following comments were noted with the application.		
Pg. 8 1.	CCCD	There are areas throughout the plans were segments of filter sock don't adequately overlap which will allow of sediment laden flows to leave the Right of Way. Please go through the plans and fill these areas in with additional sock or extend the existing segments to fill in the gaps. For example see south side of temporary workspace located on sheet ES-6.51, north border of temporary workspace on sheets 6.56 & 6.57, along the Right of Way throughout the plan, please address. 102.11(a)(1)
	SPLP Response:	<i>CFS was designed to overlap the flow path of the runoff within the disturbed area. The up slope CFS casts a "flow shadow" to the edge of the down slope CFS. Other areas that appear to have gaps are due to localized raised in elevations that would direct runoff away from the undisturbed area outside the LOD. The specific referenced plans above have be revised to extend the controls, showing more of an overlap and perimeter controls along the areas of raising elevation that appeared to be gaps. The areas identified were reviewed and additional CFS added to address gaps and potential gaps in the control. The other areas were also reviewed for areas without sufficient overlap and drawings revised accordingly. Updated E&S drawing set for Chester County is posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site</i>
Pg. 8 2.	CCCD	Please provide specific sequences of construction each block valve site in Chester County that includes the Critical Stage Inspections of the PCSM BMPs. 102.11(a)(1)&(2).

	<i>SPLP Response:</i>	<i>The block valve sites in Chester County are no longer proposed as impervious gravel sites. The block valve sites will be vegetated and utilize geoweb cellular confinement to reinforce the topsoil layer and minimize rutting due to the occasional maintenance truck. The construction sequence in Section 3.7 of the Site Restoration and Post-Construction Stormwater Management Plan has been revised and posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
<u>Erosion and Sedimentation Technical Deficiencies For Twin Oaks Station Delaware County</u>		
The following comments were noted in the September 6, 2016 technical deficiency letter and remain with the application.		
Pg. 9 1.	DCCD	Silt barrier should be placed up and around the end wall and extend to edge of disturbance at cross culvert. [25 Pa. Code §§ 102.11(a)(1)]
	<i>SPLP Response:</i>	<i>The compost filter sock has been revised as recommended. The sock location has been edited to extend up and around the pipe and riprap apron and terminate at the limit of disturbance near the dual cross culverts. See the E&S Plans, Sheet 3 posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 9 2.	DCCD	Basin redesign – Why is the top of the riser higher than the emergency spillway?
	<i>SPLP Response:</i>	<i>The top of the outlet structure is located 18” above the emergency spillway elevation of 109.0. This was done to provide adequate concrete thickness between the top of the 8” orifice (108.87) and the top of the type “M” inlet wall (109.83). The proposed elevation of the top of the outlet structure is 110.50. The Type M concrete top unit is a total of 8” thickness. Additionally, we did not model any flows through the top of the outlet structure. The maximum 100 year elevation of water in the basin is 109.10, which is .10’ of flow through the emergency spillway during the 100 year storm. See the E&S Plans, Sheet 6 posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 9 3.	DCCD	Temporary stone filter – Horse shoe shaped berm for Basin outlet protection as opposed to compost filter sock. [25 Pa. Code §§ 102.11(a)(1)]
	<i>SPLP Response:</i>	<i>The 24” compost filter sock that was previously shown in front of the basin outlet structure was revised to a 12” high horseshoe shaped stone berm, constructed of #57 stone. The construction sequence has also been revised to reflect this change. See the detail on the E&S Plans, Sheet 6 posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 9 4.	DCCD	Previous Item #4 – Limit of disturbance still extends beyond the E&S Controls. [25 Pa. Code §§ 102.11(a)(1)]
	<i>SPLP Response:</i>	<i>The compost filter sock in the southeast corner of the site has been moved to the edge of the limit of disturbance line. See the E&S Plans, Sheet 3 posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>

<u>Erosion and Sedimentation Technical Deficiencies For Delaware County</u>		
The following comments were noted in the September 6, 2016 technical deficiency letter and remain with the application.		
Pg. 9 1.	DCCD	It is recommended that the design engineer use the worst case scenarios to specify the size of silt fence that can be substituted for what size compost filter sock in not special protection watersheds. [25 Pa. Code §§ 102.11(a)(1)]
	<i>SPLP Response:</i>	<i>It has be identified that for this project only CFS will be installed and silt fence will not be an approved alternative. All references to silt fence have been removed from the application. Revised E&S sheets and narrative are posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 9 2.	DCCD	The arsenic issue has not been adequately addressed.
	i.	Has the area been tested or previously blended to mitigate the area during the construction of the residential subdivision?
	<i>SPLP Response:</i>	<i>Sunoco Pipeline LP has not previously blended soil within the ROW.</i>
	ii.	Can excess material be hauled off site?
	<i>SPLP Response:</i>	<i>Soil removed by trenching activities will be replaced in the trench. The removal of excavated soil from the ROW is not anticipated.</i>
	iii.	Will the area be tested during final restoration?
	<i>SPLP Response:</i>	<i>Yes.</i>
Pg. 9 3.	DCCD	Previous Comment 3B – Sta. 15232+00 – Sta. 15634+25 the Ephemeral Stream is totally within the disturbed area. The drainage area is not provided and has adequate E&S Control. [25 Pa. Code §§ 102.11(a)(1)]
	<i>SPLP Response:</i>	<i>The ephemeral stream identified is S-B37 shown on ES-6.03. A site specific stream crossing detail was prepared and presented on sheets S-B38-A and –B. The detail provided identifies pump bypass. During construction impact to the stream which is typically dry will be minimized and the E&S controls shown on the site specific crossing detail supersede information provided on the E&S plan sheet.</i>
Pg. 9 4.	DCCD	Previous Comment # 6 – Arsenic issue similar to comment # II (b)
	<i>SPLP Response:</i>	<i>This area will be addressed in same manner and soil removed by trenching activities will be replaced in the trench. The removal of excavated soil from the ROW is not anticipated.</i>
Pg. 9 5.	DCCD	Previous Comment - #6B – Row Crops fields will not be considered to be undisturbed areas for discharging water bars and slope pipes. Also an issue off of Valley Road, Edgmont, Twp. [25 Pa. Code §§ 102.11(a)(1)]

	<i>SPLP Response:</i>	<i>The limited areas of water bar and slope pipe discharges to row crop fields in Delaware County have been revised to state that immediate restoration will take place in these fields. The water bars and slope pipes will removed during restoration.</i>
Based on review of the submission to address the September 6, 2016 technical deficiency letter the following comments were noted with the application.		
Pg. 10 1.	DCCD	Design Detail on Sheet ES-0.11 of 60 – Design Detail on Sheet ES-0.09 of 60 for Temporary Slope Pipe detail. No protection is shown at outlets of slope pipe. [25 Pa. Code §§ 102.11(a)(1)]
	<i>SPLP Response:</i>	<i>The design details associated with the temporary upslope diversion and slope pipe have been revised to provide a level spreader at the discharge end. A detail of the level spreader and calculation used to size the level spreader has been provided on revised ES-0.09 and in E&S Report Attachment 4-Construction Details and E&S Design Calculations, respectively. These updates have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site</i>
Pg. 10 2.	DCCD	Design detail on sheet ES-0.1 of 60 – Silt barrier not on contour and sectioning does not attempt to discharge treated water to undisturbed areas. This issue has been repeated on several of the stream crossing design details. [25 Pa. Code §§ 102.11(a)(1)]
	<i>SPLP Response:</i>	<i>The design detail for stream crossing provided on ES-0.11 assumes slope toward stream and the J-hooks shown will be used to address CFS installed perpendicular to contours. The J-hooks will prevent the sediment laden stormwater from running along the CFS and promote ponding and at least partial discharge off ROW thru the CFS. Typical silt barriers are on the contours and if angled to the contour were upsized one size CFS that what would be required by the design parameters in the DEP's E and S manual. Treated water from the stream crossings are being discharged to vegetated areas.</i>
Pg. 10 3.	DCCD	Temporary upslope Diversion Berms [25 Pa. Code §§ 102.11(a)(1)]
	i.	Calculations are required
	<i>SPLP Response:</i>	<i>The calculations for the clean water diversion berms have been provided previously. The calculations for the ECB for the “channel” and the level spreaders at the discharge end of the slope pipes have now been also provided. The calculations can be found in Attachment 4 of the E&S Report and have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
	ii.	Velocity may exceed vegetation and will required additional stabilization measures. (ex-Sheet 6.14)
	<i>SPLP Response:</i>	<i>ECB's have been designed for the clean water diversion “channels” and the calculations are provided in Attachment 4 of the E&S Report and have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
	iii.	Compost filter sock should be impervious and not standard filter sock. This needs to be specified at design detail.

	<i>SPLP Response:</i>	<i>Diversion Soxxs are proposed for the clean water diversions. Compost filter soxxs will be used as the clean water diversions. The specification for the diversion Soxxs has been provided in Attachment 4 of the E&S Report (“Perp Drain Pipe Model”) and posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
	iv.	Temporary swales in HQ need to be designed for 2.25 c.f.s.
	<i>SPLP Response:</i>	<i>The clean water diversions were calculated based off of the 2 year/24 hour storm. Areas in HQ watersheds need to be designed to the 5 year 1 hour storm. The maximum 5 year 1 hr storm along the project was determined to be 1.7 cfs. Accordingly, the minimum design flow for the clean water diversions is 1.7 cfs or greater.</i>
<u>Post Construction and Stormwater Management Technical Deficiencies</u>		
The following comments were noted in the September 6, 2016 technical deficiency letter and remain with the application.		
Pg. 10 1.	DCCD	Vegetated block valve sites -Provide typical detailed sections for the Vegetated block valve sites including the construction specifications for the materials and execution used at these sites. Please include the Geoweb product to be used at these sites (including the infill material and minimum void space) and if compaction (proof rolling, etc.) is required in any form in the detailed sections and construction specifications. Discuss in narrative form why these sites can be vegetated and the other valve sites are covered with gravel. The limits of the Geoweb needs to be added to the E&S and PCSM Plan drawings. Discuss in narrative form how these Vegetated sites can be considered pervious and require no additional PCSM BMPs. Please amend the E&S Plans, PCSM Plans, and Narratives to include these items. [102.8(f)(3)]
	<i>SPLP Response:</i>	<i>The PCSM and the E&S narratives and plan drawings have been revised to include these items and have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site. See also the response to January 30, 2017 comments, Page 6, number 10.</i>
Pg. 10 2.	DCCD	Mainline restoration - Amend the PCSM report to include documentation and justification to support that the proposed pipeline (mainline) restoration adequately addresses 102.8(n). This should include specifically how the application addresses 102.8 (b), (c), (e), (f), (h), (i), (l), and (m) for the entire pipeline (mainline) restoration. Please amend accordingly [102.8(n)]
	<i>SPLP Response:</i>	<i>Section 3.7 of the Site Restoration and Post-Construction Stormwater Management Plan has been updated to document the mainline pipeline’s compliance with 102.8(n), which also specifically addresses 102.8(b), (c), (e), (f), (h), (i), (l), and (m) for the pipeline (mainline) restoration. The new PCSM Plan has been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>

Pg. 10 3.	DCCD	TMDLs and PADEP Worksheet 1 - PADEP Worksheet 1 was revised by the applicant. The TMDL question on the PADEP Worksheet 1 was deleted by the applicant. Since Worksheet 1 was revised by the applicant, the applicant did not provide the TMDLs for the project. For each of the valve sites, the TMDL listing according to EmapPA includes the following: Cause Unknown, Pesticides, Nutrients, Siltation, Organic Enrichment/Low D.O., and Suspended Solids. Please amend Worksheet 1 accordingly. [ESCGP-2 application]
	SPLP Response:	<i>The block valve sites in Delaware County are no longer proposed as impervious gravel sites. The block valve sites will be vegetated and utilize geoweb cellular confinement to reinforce the topsoil layer and minimize rutting due to the occasional maintenance truck. As a result, PCSM Worksheets are no longer applicable and have been removed from the application. The TMDLs for the receiving waters at the block valve sites have been added to Table 1 in Section 2.0 of the Site Restoration and Post-Construction Stormwater Management Plan which is posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 11 4.	DCCD	Antidegradation Analysis - All 5 Valve Sites (including the Vegetated Valve Site at Middletown Road) in the Southeast Region either drain to a Special Protection water or the receiving water is impaired due to Siltation. It is unclear if the applicant meets the antidegradation requirements for all of the Valve Sites since the applicant did not use correct values for infiltration rates, storage volumes, or HSG soils groups as better described below for each Valve Site. [ESCGP-2 application]
	SPLP Response:	<i>The block valve sites in Delaware County are no longer proposed as impervious gravel sites. The block valve sites will be vegetated and utilize geoweb cellular confinement to reinforce the topsoil layer and minimize rutting due to the occasional maintenance truck. The antidegradation analysis in Sections 3.6 and 4.6 has been revised to discuss ABACT BMPs used at block valve sites in special protection and siltation impaired watersheds. The updated PCSM Narrative has been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 11 5.	DCCD	Tc Adjustment and Volume Abstraction PCSM Methods - The PCSM methods, Time of Concentration (Tc) Adjustment and Volume Abstraction, are briefly described in the PADEP BMP Manual; however, the applicant did not provide adequate supporting documentation for the use of these methods as part of their peak rate control calculations. [102.8(g)(4)]
	SPLP Response:	<i>The block valve sites in Delaware County are no longer proposed as impervious gravel sites. The block valve sites will be vegetated and utilize geoweb cellular confinement to reinforce the topsoil layer and minimize rutting due to the occasional maintenance truck. As a result, PCSM calculations for block valve sites are no longer applicable.</i>

Pg. 11 6.	DCCD	<p>Areas of Temporary Stabilization and/or Access - The Construction Sequence in the E&S Plan drawings (sheet ES-0.03) includes the following line item: “Any area that used stone and/or timber mats for temporary stabilization and/or access will be completely removed, soil will be de-compacted by using tracked equipment making multiple passes over area reestablish preconstruction contours, and replace topsoil to a minimum of 4-8 inches deep and seed and mulch areas vehicular traffic should be restricted from areas to prevent soil compaction.” There is concern that de-compacting by using tracked equipment for multiple passes may actually compact the areas more instead of decompacting. Please revise the sequence accordingly, or justify this practice. [102.4(b)(4)(iii) and (iv)]</p>
	SPLP Response:	<p><i>Same as response to January 30, 2017 comment, page 6, Number 7.</i></p> <p><i>The construction sequence in the E&S Plan drawings was reviewed per the comment. Step 17 of the construction sequence has been revised in all counties to the following:</i></p> <p><i>Step 17. In areas that used stone or timber mats for temporary stabilization and/or access, the stone or mats will be removed and, if needed, the soil will be scarified or ripped to a depth of 8-12 inches to de-compact the soil. After reestablishing preconstruction contours, topsoil will be replaced to a minimum depth of 4-8 inches and seeded and mulched. Vehicular traffic after restoration should be restricted from areas to prevent soil compaction.</i></p> <p><i>The E&S narrative Section 3.4, Primary Construction Activities, subsection Minimization of Soil Compaction has been updated to be consistent. The updated E&S narratives for the entire application is posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>
Pg. 11 7.	DCCD	<p>Act 167 Consistency - Consistency Letters from the respective Municipality for each of the Valve Sites could not be located in the submission. Also, verification reports for addressing the respective Act 167 Plans for each of the Valve Site could not be located in the submission. Please amend the application accordingly. [ESCGP-2 application]</p>
	SPLP Response:	<p><i>Act 167 verification reports were provided in Tab 5 of each regional application. The Act 167 verification reports have been revised to account for the block valve sites being restored to a vegetated condition and have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>
Pg. 11 8.	DCCD	<p>Fairview Road Valve Site [102.8(f)(2)], [102.8(f)(8)], [102.8(g)(1)], [102.8(g)(2)]</p> <ol style="list-style-type: none"> a. The incorrect Hydrologic Soil Group (HSG) was used in the PCSM calculations. HSG “A” was incorrectly used in the PCSM calculations. According to the Web Soil Survey, this site is located in HSG “B” soils. Please revise the PCSM calculations accordingly. b. The incorrect infiltration rate was used in the PCSM calculations. An infiltration rate of 0.3 inches/hour was incorrectly used in the PCSM calculations. According to the submitted Table 1 in Section 5 of Volume IV, the recommended infiltration rate is 0.2 inches per hour. Please revise accordingly. c. The storage volume for Berm B used in the PCSM calculations is not consistent with the storage volume listed on the PCSM Plan drawings. Please revise accordingly.

	<i>SPLP Response:</i>	<i>The Fairview Road block valve site is no longer proposed as an impervious site. The block valve will be returned to a vegetated condition, so PCSM calculations are no longer applicable.</i>
Pg. 11 9.	DCCD	East Lincoln Highway Valve Site a. The point of interest identified on the PCSM Plan drawings is located at an existing building. This could be interpreted to mean that the proposed runoff from this Valve Site will be directed toward an existing building. Please amend the plan drawing and calculations, or provide justification.
	<i>SPLP Response:</i>	<i>The East Lincoln Highway block valve site is no longer proposed as an impervious site. The block valve will be returned to a vegetated condition, so PCSM calculations no longer apply. The PCSM plan drawing has been updated accordingly and is located in Attachment 6 of the PCSM Report posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 12 10.	DCCD	Boot Road Valve Site [102.8(f)(2)], [102.8(g)(1)], [102.11(a)(2)] a. The PCSM Plan drawing does not include the latitude and longitude, and the soil boundary and soil types for this valve site. The latitude and longitude for each valve site was requested in the previous deficiency letter. The soil boundary and soil types is required according to the Completeness Checklist. Please amend the plan drawing accordingly. b. The incorrect infiltration rate was used in the PCSM calculations. An infiltration rate of 0.2 inches/hour was incorrectly used in the PCSM calculations. According to the submitted Table 1 in Section 5 of Volume IV, the recommended infiltration rate is either 0.0 and 0.1 inches per hour depending on the depth of the BMP. Please revise accordingly. c. One of the recommended infiltration rates is below the 0.1 inches per hour recommended minimum infiltration rate per the PA BMP Manual. Please revise the plan accordingly.
	<i>SPLP Response:</i>	<i>The Boot Road block valve site is no longer proposed as an impervious site. The block valve will be returned to a vegetated condition, so PCSM calculations no longer apply. The PCSM plan drawing has been updated accordingly. Coordinates for the block valve site have also been added to the plan drawing located in Attachment 6 of the PCSM Report posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 12 11.	DCCD	Middletown Road Valve Site (Vegetated Cover) [102.8(f)(2)], [102.8(f)(4)] a. The incorrect soil type was identified for this valve site. “GeC” soil type is shown on the PCSM plan drawing. According to the Web Soil Survey, this site is located in “GeC2” soil type. Please revise the plan drawing accordingly. b. No PCSM calculations were provided for this Valve Site. Please justify accordingly.

	SPLP Response:	<p>a. The referenced soil type has been revised on the PCSM plan drawing.</p> <p>b. The Middletown Road block valve does not propose an impervious surface. This utility infrastructure site will be returned to meadow in good condition, which is equal to or better than existing conditions. As a result, the block valve fulfills the requirements outlined in Chapter 102.8(n), which includes compliance with subsections (b), (c), (e), (f), (h), (i), (l), and (m). Language has been added to Section 4.0 of the Site Restoration and Post-Construction Stormwater Plan in response to this comment. The new PCSM Plan has been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</p>
Pg. 12 12.	DCCD	<p>South Pennell Road Valve Site [102.8(f)(2)], [102.8(g)(1)]</p> <p>a. The PCSM Plan drawing does not include the latitude and longitude, and the soil boundary and soil types for this valve site. The latitude and longitude was requested in the previous deficiency letter. The soil boundary and soil types is required according to the Completeness Checklist. Please amend the plan drawing accordingly.</p> <p>b. The incorrect infiltration rate was used in the PCSM calculations. An infiltration rate of 1.8 inches/hour was incorrectly used in the PCSM calculations. According to the submitted Table 1 in Section 5 of Volume IV, the recommended infiltration rate is 0.1 inches per hour. Please revise accordingly.</p>
	SPLP Response:	<p>The South Pennell Road block valve site is no longer proposed as an impervious site. The block valve will be returned to a vegetated condition, so PCSM calculations no longer apply. The PCSM plan drawing has been updated accordingly. Coordinates for the block valve site have also been added to the plan drawing located in Attachment 6 of the PCSM Report and posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</p>
<p>II. Southwest Regional Office</p> <p>A. Chapter 102 Permit</p> <p><u>Erosion and Sedimentation Technical Deficiencies For All Counties</u></p> <p>The following comments were noted in the September 6, 2016 technical deficiency letter and remain with the application.</p>		
Pg. 17 1.	DEP	<p>The diversion berms need to have all necessary calculations presented for it. Also the diversion berms need to have a stable flow path from the end of the diversion berm to a surface water or some type of BMP to disperse the flow to a sheet flow condition. Using stacked sock for diversion may not be appropriate. Specification for the growing media should be given in Table similar to table 4.2 Compost standards.</p>
	SPLP Response:	<p>The clean water diversion calculations are provided in Attachment 4 of the E&S. ECB's for the clean water diversion "Channels" have been designed and the calculation also provided. Level spreaders at the discharge of the slope pipes have been designed and the calculations provided. A detail of the level spreader has been provided and will be installed on at a level elevation. After the perimeter controls are removed, the stone used at the level spreader shall be removed and the areas will be restored in accordance with the E&S plan. The level spreader detail and all necessary calculations can be found in Attachment 4 of the E&S Report posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</p>

<u>Erosion and Sedimentation Technical Deficiencies For Allegheny County</u>		
No Further Comments		
<u>Erosion and Sedimentation Technical Deficiencies For Cambria County</u>		
No Further Comments		
<u>Erosion and Sedimentation Technical Deficiencies For Indiana County Comments</u>		
The following comments were noted in the September 6, 2016 technical deficiency letter and remain with the application.		
Pg. 17 1.	ICCD	Drawings S-N87-A and S-N87-B: Stream S-N87 is identified in two separate locations. Confirm the identity and location of each stream. 25 Pa. Code §102.4(b)(5)(vii).
	<i>SPLP Response:</i>	<i>Drawings S-N87-A and S-N87-B have been revised, as appropriate, to depict S-N89. Revised drawings are located in Attachment 2 of the E&S Report and have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 17 2.	ICCD	Drawing SN87-B: Stream restoration areas are not appropriately labeled on the drawing or in the legend. 25 PA Code § 102.4 (b)(4).
	<i>SPLP Response:</i>	<i>Drawing S-N87-B has been revised, as appropriate, to label the stream restoration area. Revised drawings are located in Attachment 2 of the E&S Report and have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 17 3.	ICCD	Drawings S-0100-A and S-0100-B: Profile shows W-063 this does not match the wetlands identified at the same location on the Existing Conditions Plan or the Erosion and Sediment Control Plan or the Restoration Plan. 25 PA Code § 102.4 (b)(5)(v).
	<i>SPLP Response:</i>	<i>Drawings S-0100-A and S-0100-B have been revised, as appropriate, to label the stream restoration area. Revised drawings are located in Attachment 2 of the E&S Report and have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 17 4.	ICCD	Drawings WL-063-A and WL-063-B: Profile shows crossing for W-063 this does not match the wetland crossing identified at the same location on the Existing Conditions Plan or the Erosion and Sediment Control Plan or the Restoration Plan. 25 PA Code § 102.4 (b)(5)(v).
	<i>SPLP Response:</i>	<i>Drawings WL-063-A and WL-063-B have been updated to reflect the correct delineation and crossing method of W-063. Revised drawings are located in Attachment 2 of the E&S Report and have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 18 5.	ICCD	Drawings WL-055-A and WL-055-B: Profile, Existing Conditions Plan, Erosion and Sediment Control Plan and the Restoration Plan identifies S-078 as UNT to Conemaugh River (CWF.) ES-0.02 identifies S-078 as UNT to Findley Run-CWF-HQ. Provide accurate stream identification. 25 PA Code § 102.4 (b)(5)(v).

	<i>SPLP Response:</i>	<i>The correct identification of stream S-078 is UNT to Findley Run (HQ-CWF). Drawings WL-055-A and WL-055-B have been updated to reflect the correct identification of the stream. Revised drawings are located in Attachment 2 of the E&S Report and have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 18 6.	ICCD	Drawings S-076-A and S-076-B: Existing Conditions Plan, Erosion and Sediment Control Plan and the Restoration Plan identifies S-077 and S-076. The Profiles show SC-077 and SC-076. All are identified as UNTs to Conemaugh River (CWF). ES-0.02 identifies S-076 and S-077 as UNTs to Findley Run-CWF-HQ. ES-0.02 does not identify SC-077 or SC076. Provide accurate stream identification. 25 PA Code § 102.4 (b)(5)(v).
	<i>SPLP Response:</i>	<i>The profiles have been updated to reflect the correct identification of the two streams in question, S-077 and S-076. The profiles have also been updated to reflect the correct identification of the streams as UNTs to Findley Run (HQ-CWF). Revised drawings are located in Attachment 2 of the E&S Report and have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 18 7	ICCD	Drawings WL-W135-A and WL-W135-B: Profile, Existing Conditions Plan, Erosion and Sediment Control Plan and the Restoration Plan identifies wetland W-054. ES-0.02 does not identify this wetland. Provide accurate stream identification. 25 PA Code § 102.4 (b)(5)(v).
	<i>SPLP Response:</i>	<i>Wetland W-054 is not identified on ES-0.02 since there are no proposed impacts to that particular wetland. The wetland is a part of the surveyed areas, but will not be impacted by the LOD of the pipeline. Revised drawings are located in Attachment 2 of the E&S Report and have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
<u>Erosion and Sedimentation Technical Deficiencies For Washington County</u>		
No Further Comments		
<u>Erosion and Sedimentation Technical Deficiencies For Westmoreland County Comments</u>		
The following comments were noted in the September 6, 2016 technical deficiency letter and remain with the application, specifically for Spread 1&2.		
Pg. 18 1.	WCCD	Erosion control blanket has not been shown to extend 100' from the disturbance when working within a crossing of a HQ water as directed on page 273 of the Pa E&S manual. Examples include Spread 2 ES-0.16, Spread 2 ES-2.09, and Spread 2 ES-2.12
	<i>SPLP Response:</i>	<i>These areas were confirmed as HQ waters and the erosion control blankets have been revised to extend 100' rather than the 50' currently shown at these locations. Revised drawings are located in Attachment 2 of the E&S Report and have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
The following comments were noted in the September 6, 2016 technical deficiency letter and remain with the application, specifically for Delmont Station		
Pg. 18 2.	WCCD	Channels, rip-rap aprons, inlets and outlets should be labeled/numbered so they can be referenced during review and inspection.

	SPLP Response:	<i>The channels, riprap aprons, inlets and outlets have been labeled/numbered on the PCSM plans and posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 18 3.	WCCD	Please verify an adequate flow length to width ratio for Delmont Station's sediment trap at quadrant E9.
	SPLP Response:	<i>This sediment trap is in a special protection watershed and the required flow ratio is 4:1. A baffle has been added to the E&S plan to provide additional flow length through the sediment trap. The updated E&S Plan has been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 18 4.	WCCD	What drains to the manhole atop the proposed pad in quadrant D9? Is there and underground storage facility or is there possibly a yard drain here?
	SPLP Response:	<i>The runoff from the pad slopes toward that inlet and berms along two sides of the pad to direct surface runoff from the pad into the inlet. This keeps the runoff off of the pad slopes and directs it to the infiltration basin.</i>
Pg. 18 5.	WCCD	Out letting the rip-rap apron at the existing pads fill slope edge is likely to cause erosion, please revise.
	SPLP Response:	<i>Missing from the plans is an existing riprap area that serves as a stormwater outlet for the existing pad that discharges to an adjacent ditch. The existing riprap area will be added to the appropriate plan sheets. The proposed culvert outlets just above this area so that discharge is to the riprap outlet and then to the adjacent ditch. The revised plan has been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
<u>Post Construction and Stormwater Management Technical Deficiencies</u>		
The following comments were noted in the September 6, 2016 technical deficiency letter and remain with the application.		
Pg. 19 1.	WCCD	There have been numerous comments provided during the review of the JPAs for this project as it relates to the PPC Plan. Responses to those comments should be reflected in the ESC Permit application documents.
	SPLP Response:	<i>The PPC plan included in the Chapter 102 permit reflects all comments provided with the Chapter 105 comments.</i>
Pg. 19 2.	WCCD	We have not received a clearance letter from PHMC regarding historic properties and archaeological resources for the project.
	SPLP Response:	<i>A Phase II study site and avoidance plan with figure summary for the project is provided on the SharePoint site. It is the document titled "PPP Cultural PII Sites and Avoidance Plans 020317". The cover letter documenting submission of the latest report to the PHMC is also include on the SharePoint site as "PPP Cultural Addendum Cover Letter 020117". The SharePoint site for these documents is located here: MEII DEP Agency Documentation SharePoint Site .</i>

Pg. 19 3.	WCCD	The restoration activities noted that “tracked” equipment will be used to scarify the ground surface. Please provide additional information or limits on size or weight of the equipment to be used to ensure that excess compaction does not occur.
	SPLP Response:	<i>Tracked equipment will be used for surface roughening as described in Chapter 11 of the PADEP E&S Pollution Control Program Manual (363-2134-008, March 2012).</i>
Pg. 19 4.	WCCD	We had requested additional information regarding riparian buffer waiver requests. One of the items requested was the square footage of each buffer request. You provided a cumulative number, but not the area for each buffer area.
	SPLP Response:	<i>As noted, a cumulative riparian forest buffer impact acreage was provided previously. The riparian forest buffer waiver request applies to the cumulative impacts within the county. Therefore, the square footage of each segment of riparian forest buffer is not necessary for review of the riparian forest buffer waiver request.</i>
Pg. 19 5.	WCCD	Original comment: The loading ratios for infiltration at the infiltration berms has exceeded the maximum (5:1) in numerous counties at block valve sites. Most of the loading rates were 8:1 and up to 13:1.
	SPLP Response:	<i>The PCSM Plans for the Westmoreland County Block Valve Sites (Koontz Road, Bush Road and Westinghouse Road) were designed to minimize the disturbed areas and loading ratios of the Infiltration Berms. Westinghouse Road is now being fully restored to a vegetated meadow condition. The Koontz Road and Bush Road block valve sites utilize upstream diversion channels to minimize the loading ratio for each site. The Impervious Loading Ratios for Koontz Road and Bush Road are 3.8:1 and 2.0:1, respectively, which are well below the recommended ratio of 5:1.</i>
Pg. 19 6.	WCCD	The project proposes stormwater discharges to areas other than surface waters (offsite discharges). As example, the discharge from the series of infiltration berms at the Ebensburg Station (Cambria County) is to a non-surface water. The applicant needs to demonstrate either that these discharges are to an existing stormwater discharge site and will not increase rate or volume (Common Law Easement) or provide an Express Easement if this is a new discharge location or has volume or rate increases. Any easement necessary would have to be secured from the point of discharge to the point where a surface water exists. For discharges to non-surface waters, a monitoring plan should be included in the application. [NOTE: for individual permits we would typically condition the permit regarding monitoring, but since this is a general permit monitoring needs to be built in to the application.]

		<p>Condition SWRO used in this situation: [USE WHEN ANY DISCHARGE IS NOT TO A WATERCOURSE]</p> <p>11. The channel or swale that conveys the flow from xxxx [Identify discharge location such as POI # or outfall number, or “discharge from Basin # 1”], to the XXXXX [stream name] shall be maintained to prevent erosion. The permittee shall:</p> <ul style="list-style-type: none"> a. Document existing conditions by taking preconstruction photographs taken every 50 feet along the properties from XXXX [discharge location noted above] to the receiving stream. The location of the photographs shall be shown on a scaled location map noting the location and direction of each photograph. Copies of the photographs and location map shall be submitted to the Department prior to discharge. b. Monitor the condition of the channel or swale during all routine Erosion & Sedimentation Control and Post Construction Stormwater Management BMP inspections and keep written documentation regarding the condition of the channel or swale. Photographic documentation is suggested, but not required to document the post-discharge conditions. c. If erosion occurs, the permittee shall submit a corrective action plan (PLAN) for the Department’s review and approval within 30 days of evidence of any erosion. The Plan shall be implemented within two (2) weeks of the Department’s approval unless an alternate schedule is approved by the Department. d. Reports shall be mailed to DEP: Permit Chief Waterways and Wetlands Program 500 Waterfront Drive Pittsburgh, PA 15222
	<p><i>SPLP Response:</i></p>	<p><i>A supplemental offsite discharge analysis is provided for inclusion in Attachment 8 to the NOI. The offsite discharge analysis confirms stormwater runoff rates and volume will not increase at offsite discharge locations. The discharge analysis contains a summary of each discharge location and associated figures. For discharges to non-surface waters, monitoring will be conducted downstream of the level spreaders as part of level spreader inspection. The Off-Site Discharge Analysis has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>
<p>Pg. 20 7.</p>	<p>WCCD</p>	<p>In the area in Washington County where construction of ME1 caused sediment pollution at the ponds owned by Mr. Simon and Mr. Minick the E&S Control Plan (Plan) shows a “temporary upslope diversion berm” (clean water) entering a “temporary slope pipe” that will discharge above the area of these affected ponds. The only detail that we could find in the Plan for the slope pipe specifies that the pipe “shall outlet to a sediment basin, trap or collection channel”. It is unclear whether this is proposed in this location. The applicant should provide clarification on how the outlet of this pipe will be constructed to ensure that any discharge will not cause erosion of the area. As this is an area where problems have occurred, a site specific design and detail should be provided. Copies of the pertinent drawings are attached.</p>

	SPLP Response:	<i>The discharge system for the temporary slope pipe was revised to return the discharge to sheet flow. Significantly more ECDs in this area were provided with SPLP's December submission. The area was reviewed based on ME1 concerns and additional ECDs included as needed. A note was added requiring inspection by WCCD of the ECDs when installed and prior to clearing operations. The revised sheets are posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 20 8.	WCCD	The ESCGP-2 Permit Application included a "Receiving Waters Table" (copy attached). The table seems to include ALL receiving waters/watershed in which the ME2 pipeline will be constructed. Please verify that this is the case. Also, please add two columns to the right side of the table to indicate; whether there is a TMDL for any impaired water; and if a TMDL exists, the pollutants of concern that have limits.
	SPLP Response:	<i>Each region received a version of the "Receiving Waters Table" specific to the receiving waters within their respective region. Two columns have been added to each regional receiving waters table to identify (1) if a TMDL exists for that particular receiving water and (2) the pollutants of concern that have limits. Updated Receiving Waters Tables located in the NOI, E&S Report, and PCSM Report have been posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 20 9.	WCCD	DEP will need copies of any revised drawings created or modified as a result of comments by the Conservation Districts. We do NOT need entirely new sets of plans.
	SPLP Response:	<i>The E&S plan sheets that were modified based on comments received will be provided as part of this Response to Comments and posted to the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
IV. Southcentral Regional Office		
B. Chapter 102 Permit		
<u>Erosion & Sediment Control (E&S) Plan - General Technical Deficiencies</u>		
Pg. 9 1.	DEP	The following technical deficiencies are associated with Sheet ES0-0.10 (e.g. Blair County): 25 Pa. Code § 102.4(b)(5)(ix)
	a.	Temporary Slope Pipe Detail: Identify the required pipe size on the plans; referring to the provide chart to size the pipe during construction and out in the field is not sufficient. Ensure that the drainage area delineations and information is provided. 25 Pa. Code §§ 102.4(b)(5)(vi) & 102.4(b)(5)(viii)
	SPLP Response:	<i>The sizes of the slope pipe are listed in the calculations. In discussions with DEP having the size of the pipe listed in two locations is not required. The drainage areas and time of concentration figures for the diversion berms are provided in Attachment 4 of the E&S Report. These calculations are posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
<u>E&S Plan - Beckersville Pump Station Technical Deficiencies</u>		

Pg. 9 1.	BCCD	The first Note in the AASHTO #1 Rock Construction Entrance detail on Sheet CONSTDET9 identifies that the wash rack is only required for HQ or EV watersheds and that the site is not located within an HQ or EV watershed. Revise the detail to identify that the wash rack is required for this particular location, as the project site discharges to a special protection surface water. 25 Pa Code §§ 102.4(b)(5)(v), 102.4(b)(5)(vi), 102.4(b)(5)(ix), 102.4(b)(5)(xiv) & 102.4(b)(6)
	SPLP Response:	The note on E&S Plan Sheet #9 has been changed to “this site is located within an HQ or EV watershed, a wash rack will be required” and posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site .
<u>E&S Plan – Lebanon County Technical Deficiencies</u>		
Pg. 10 1.	LCCD	Technical Deficiency No. 7 from DEP’s TD Letter has not been adequately addressed. 25 Pa Code §§ 102.4(b)(5)(iii), 102.4(b)(5)(v), 102.4(b)(5)(vi) & 102.4(b)(5)(ix) The specified sheets were not included with the submission. Include the sheets and changes as identified in the response.
	SPLP Response:	The site specific drawings were incorrectly labeled in the previous response. The correct sheets for Stream S-A25 are P-A1-A and P-A1-B and have been provided in the E&S Report, Attachment 2 posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site .
<u>E&S Plan – Doylestown Pump Station Technical Deficiencies</u>		
Pg. 10 1.	PCCD	The first Note in the AASHTO #1 Rock Construction Entrance detail on Sheet C-4 identifies that the wash rack is only required for HQ or EV watersheds. Revise the detail to identify that the wash rack is required. 25 Pa Code §§ 102.4(b)(5)(v), 102.4(b)(5)(vi), 102.4(b)(5)(ix) & 102.4(b)(5)(xiv)
	SPLP Response:	The detail note was revised to identify that a wash rack is required. The detail is located in the Doylestown Pump Station E&S Plans posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site .
<u>E&S Plan – York County Technical Deficiencies</u>		
Pg. 10 1.	YCCD	Technical Deficiency No. 1 from DEP’s TD Letter has not been adequately addressed. . 25 Pa Code §§ 102.4(b)(5)(vi), 102.4(b)(5)(vii) & 102.4(b)(5)(ix) The response does not address the deficiency raised. This specific location is not a typical crossing scenario, due to the actual field conditions of the extremely large boulders. Identify how the proposed BMPs will be able to be used given the site conditions or provide additional information in the construction sequence for the crossing to address the concern (e.g. identify how the temporary equipment crossing will be constructed due to all of the boulders, identify how the sandbag dams will function given that the stream meanders throughout the boulders, etc.).
	SPLP Response:	The stream identified with boulder field is S-H56 located on sheet ES-4.20. The HDD in this area has been revised to extend under stream S-H56. The E&S BMPs have been updated accordingly. New sheets for this area are posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site

<u>Site Restoration and PCSM Plan Narrative – Pennsylvania Pipeline Project – South Central Region: Spreads 3, 4, 5</u>		
Pg. 10 1.	DEP	<p>Technical Deficiency No. 13 from DEP’s TD Letter has not been adequately addressed. 25 Pa Code § 102.8(f)(11)</p> <p>Section 4.2 appears to still appears to be related, in part, to the construction of the PCSM BMPs. Revise this section so that it is related to the recycling and disposal of material associated with or from the PCSM BMPs, in the post construction condition.</p>
Jacque	<i>SPLP Response:</i>	<i>Section 4.2 of the Site Restoration and Post-Construction Stormwater Management Plan has been revised to remove discussion related to construction of the PCSM BMPs. The updated PCSM Narrative has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 10 2.	DEP	<p>Technical Deficiency No. 17 from DEP’s TD Letter has not been adequately addressed. 25 Pa Code §§ 102.8(d), 102.8(f)(6) & 102.8(h)</p> <p>The antidegradation analysis is still not sufficient. Provide discussion related to de-compaction of the disturbed area prior to permanent stabilization. It is identified that the pre-construction drainage pattern will remain intact; however, there are numerous locations that propose permanent waterbars. Revise the discussion to clarify the permanent waterbars versus the pre-construction drainage pattern. Make all revisions necessary provide an adequate and appropriate antidegradation analysis.</p>
	<i>SPLP Response:</i>	<i>Sections 3.6 and 4.6 of the Site Restoration and Post-Construction Stormwater Management Plan have been updated to specify the use of surface roughening techniques such as deep ripping or chisel ripping to restore compacted areas to a minimal compacted state prior to permanent stabilization. The statement regarding pre-existing drainage patterns relates to the watershed in which the receiving waters are located and that supports their hydrology. The purpose of the permanent water bars is to ensure receiving waters are protected from degradation and are an approved PADEP BMP that are required at certain locations dependent upon site conditions. The permanent waterbars will not divert or diminish the amount of water within the watershed but are intended to manage runoff velocity and potential degradation related to sediment laden runoff into receiving waters. As such, there will be no change to pre-existing drainage patterns as the permanent water bars will continue to direct water to the same receiving waters while providing the protection required in the PADEP Manual regarding slopes. The updated PCSM Narrative has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 11 3.	DEP	Technical Deficiency No. 19 from DEP’s TD Letter has not been adequately addressed. 25 Pa Code §§ 102.8
	a.	The response identifies that the Site Restoration Narrative is included in the E&S Plan; however, it appears that the Site Restoration Plan Narrative is included with the Site Restoration and Post-Construction Stormwater Management Plan Narrative. Clarify this discrepancy (as to how the E&S, Site Restoration & PCSM Plans are structured).

	SPLP Response:	<i>The E&S Plan includes the Site Restoration construction sequence. The full Site Restoration narrative, including the Site Restoration construction sequence, is included in the Site Restoration and Post-Construction Stormwater Management Plan. The PCSM Plan has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
	b.	The information related to topsoil segregation could not be identified. Provide the location of this information.
	SPLP Response:	<i>The site restoration construction sequence in Section 3.7 of the Site Restoration and Post-Construction Stormwater Management Plan was updated to specify that topsoil from topsoil stockpiles will be placed as the upper layer of backfill when establishing final grades (step 3). Topsoil segregation will occur during the E&S phase of the project. Specific topsoil stockpile locations will be determined during construction but will conform to the requirements in the general notes and details on the plan drawings. The right of way detail on E&S drawing 0.09 shows the general topsoil stockpile location relative to the pipe trench and subsoil stockpile, and the soil stockpile detail shows the perimeter E&S BMPs that shall be installed downslope of topsoil stockpiles. The updated PCSM Narrative has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site</i>
	d.	Provide the requested discussion within the Plan, either on the plan drawings or within the plan narrative. Ensure that the information is in an appropriate location for the contractor to be able to properly implement the BMP.
	SPLP Response:	<i>Techniques related to decompaction are outlined in Step 2 of the General Construction Sequence, which is included in Section 3.1 of the narrative and on the plan drawings. The updated PCSM Narrative has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
	e.	Provide the requested discussion within the Plan (DEP recommends within the Plan’s narrative).
	SPLP Response:	<i>The revised narrative provides discussion related to fulfilling the requirements of 102.8(n), which includes subsection (b). The updated PCSM Narrative has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 11 4.	DEP	Technical Deficiency No. 22 from DEP’s TD Letter has not been adequately addressed. 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. The response identifies that a thermal impact analysis is provided for each site/location that PCSM is required. However, according to Table 1 (Pages 3 – 5), there are sites/locations that PCSM is required, but a thermal impact analysis is not provided (e.g. Seven Points Loop). Clarify the discrepancy between the response document and the information provided in the narrative. Make all revisions necessary.

	<i>SPLP Response:</i>	<i>Table 1 in Section 2.0 has been updated to clarify the number of block valve sites. In addition, Sections 3.0 and 4.0 have been updated to provide a summary of which sites require PCSM (7 total). A thermal impact analysis is provided for all sites that require PCSM. The updated PCSM Narrative has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 11 5.	DEP	Technical Deficiency No. 23 from DEP’s TD Letter has not been adequately addressed. The following technical deficiencies are associated with Section 4.5 starting on Page 30: 25 Pa Code § 102.8(f)(10)
	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. The provided long-term operation and maintenance schedule only identifies to inspect the infiltration BMPs for dewatering after the first major storm event. Inspecting the BMPs for proper dewatering only one time is not sufficient. Provide provisions for the long-term inspection of the BMPs to ensure that they continue to properly dewater. Provide discussion as to why 72 hours is the appropriate time for dewatering as opposed to the actual calculated dewatering time and the design infiltration rate. Provide better identification for the responsible party as to when inspections are required; vague terms, such as ‘major storm event’, are too ambiguous.
	<i>SPLP Response:</i>	<i>Major storm event has been defined as a storm event with greater than 1 inch of rainfall. In addition to the regularly scheduled inspection and maintenance activities, the infiltration BMPs (infiltration berms) will be inspected within 72 hours after all storm events that meet or exceed the rainfall amount for the 2-year, 24-hour storm event. The inspector shall ensure that infiltration BMPs fully dewater within 72 hours in accordance with the requirements outlined in the Stormwater BMP Manual. Dewatering times, which were based on design infiltration rates, were calculated to ensure that BMPs will dewater in 72 hours or less in accordance with the Stormwater BMP Manual. SPLP is responsible for maintaining all PCSM BMPs. SPLP or a designee will conduct PCSM BMP inspections. The revised PCSM has been updated to include information on storm events and inspections. The updated PCSM Narrative has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 12 6.	DEP	Technical Deficiency No. 25 from DEP’s TD Letter has not been adequately addressed. The following technical deficiencies are associated with Section 4.7 starting on Page 36: 25 Pa Code § 102.8(g)
	e.	The narrative is still not clear as to what the design standards are for the PCSM Plan: “The PCSM design was designed in accordance with §§102.8(g)(2) and 102.8(g)(3). Where feasible, the PCSM design aimed to achieve the applicable Act 167 Plan.” Provide a more clear identification of the design standard for the PCSM Plan (i.e. if the design standards are from 25 Pa Code §§ 102.8(g)(2) & 102.8(g)(3), then the Act 167 Plan should not be mentioned).
	<i>SPLP Response:</i>	<i>A “Block Valve and Pump Station PCSM Design Standard Table” has been added to the PCSM Report. This table outlines which design standards, either 102.8(g)(2) and 102.8(g)(3) or Act 167 Plans, were used to design PCSM BMPs at block valves and pump stations. The updated Site Restoration and Post Construction Stormwater plan for the entire application has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>

Pg. 12 7.	DEP	<p>Technical Deficiency No. 27 from DEP’s TD Letter has not been adequately addressed. 25 Pa Code §§ 102.4(b)(5)(v), 102.6(1) & 102.8(f)(5)</p> <p>The Receiving Water Table and the Receiving Wetlands Table are both identified for the Southwest Region, not the South-central Region. Provide the correct Tables.</p>
	SPLP Response:	<p><i>The Receiving Water Table and Receiving Wetland Table are included in the PCSM Report section of this submission for the South Central Region. The Receiving Waters Table has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>
Pg. 12 8.	DEP	<p>Technical Deficiency No. 28 from DEP’s TD Letter has not been adequately addressed. 25 Pa Code §§ 91.51(a), 102.8(f)(6), 102.8(f)(15), 102.11(a)(2) & 102.11(b)</p> <p>The response identifies that soil amendment are proposed to address this technical deficiency and that write-ups are provided with each individual site. However, the information identified in the response could not be located and it does not appear that this technical deficiency has been addressed (e.g. the Raystown Road site was tested with an infiltration rate of 20.06 in./hr. for IT-A; however, there is no write-up concerning the excessive infiltration rate, nor are soil amendments proposed for the ponding area). Ensure that all information is provided as identified in the response document. Provide the demonstration that soil amendments will address the concern of excessive infiltration rates.</p>
	SPLP Response:	<p><i>Infiltration is no longer proposed at sites where infiltration rates exceed 10 inches/hour.</i></p>
Pg. 12 9.	DEP f.	<p>Technical Deficiency No. 32 from DEP’s TD Letter has not been adequately addressed. 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)</p> <p>Provide the calculations for each berm that identifies how the ‘Storage volume of the BMPs’ was determined. Provide discussion as to why it is appropriate to utilize 72 hours as the time component in the ‘Infiltrated volume within 72 hours after the 2-year/24-hour event’; as the storm event would have ceased at 24 hours, resulting in no inflow to the BMP during hours 25-72.</p> <p>Determining the volume reduction of an infiltration BMP can be determined as the lower of two values. The first is the runoff volume generated by the drainage area, which is identified as ‘1. Detained area runoff volume from Hydraflow’. The second would be the combined total volume of the BMP; which is a combination of “static” storage (i.e. the surface/subsurface volume) and the “dynamic” storage (i.e. the amount of infiltrated volume over a time period); this would be a combination of ‘2. Storage volume of the BMP’ and ‘3. Infiltrated volume...’ However, DEP recommends an infiltration time period of 2 hours or the Time of Concentration, whichever is larger. If a longer infiltration time period is proposed to be utilized, then the alternative BMP and design standard demonstration will have to be provided for each instance/site.</p>

	<p><i>SPLP Response:</i></p>	<p><i>The storage volume of the BMP is static surface storage volume of the BMP. The infiltrated volume of the BMP has been revised to account for an infiltration time period of 2 hours. The volume reduction of the infiltration BMPs is now determined to be the lower value of 1 – Detained area runoff volume from Hydraflow and 2 – the combined static and dynamic storage volume of the BMP. The volume credit for slow release BMPs (associated with Creek Road, Charger Road, and Locke Mountain block valve sites) has been revised as the lower value of 1 – Detained area runoff volume from Hydraflow and 2 – the static storage of the BMP. The dynamic storage of the slow release BMP is not applicable since the BMP will not infiltrate. The updated PCSM Report, Attachment 4 –Calculations, has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>
	<p>g.</p>	<p>It appears that the PCSM BMPs are double counted in the analysis of the peak runoff rate. The PCSM BMPs are included in the initial routings, by way of the volume diversion method; however, they are then accounted for again by the Time of Concentration Adjustment. The Time of Concentration Adjustment methodology is a way to simply the runoff rate calculations; such that the PCSM BMP does not have to be routed (i.e. the Time of Concentration Adjustment method is in-lieu of routing calculations (in this instance in-lieu of the volume diversion)). Make all revisions necessary to properly analyze the runoff rate and the management of the net change. Additional BMPs may be necessary, because an increase in runoff rate is identified in the routing calculations prior to the Time of Concentration Adjustment.</p> <p>Provide discussion as to why the ‘Structural Volume Provided by BMP’ differs for storm events (e.g. Valley Forge site).</p>
	<p><i>SPLP Response:</i></p>	<p><i>Peak rate calculations have been revised to utilize only the time of concentration adjustment methodology to model post-development runoff rates. Volume abstraction/volume diversion has been removed from the Hydraflow models. As a result of this revision, several sites are now proposed as vegetated block valve sites. These changes are outlined in the Site Restoration and Post-Construction Stormwater Management Plan narrative and calculations.</i></p> <p><i>In some instances, the “Structural Volume Provided by BMP” differs for storm events on the time of concentration adjustment spreadsheet. For smaller storm events, the stormwater runoff does not always overtop the berm. When the berm is not overtopped, the runoff to the BMP for the applicable storm event is used as the “Structural Volume Provided by BMP.” When the berm overtops, the full structural capacity of the berm is used as the “Structural Volume Provided by BMP.” The revised PCSM Calculations, Attachment 4 of the PCSM Plan, are posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>
	<p>s.</p>	<p>Shade Valley Highway, Wolf Bridge Road-Sites A & B, Arcona Road, Gates Road, and Hopeland Road sites:</p>
	<p>iii.</p>	<p>The infiltration time period has been increased from 12 hours to 72 hours. Provide the justification for the use of 72 hours as the infiltration time period. This is also a continued technical deficiency for the Wolf Bridge Road A & B site (revised name to Wolf Bridge Road site), Arcona Road site, Gates Road site and the Hopeland Road site.</p>

	<i>SPLP Response:</i>	<i>The infiltration time period on Worksheet 5 has been reduced to 2 hours for the Shade Valley and Gates Road sites. The Wolf Bridge Road block valve, Arcona Road block valve, and Hopeland Road block valve no longer propose infiltration BMPs. The updated PCSM Calculations, Attachment 4 of the PCSM Plan, are posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
	ee.	Montello site:
	ii.	The deficiency remains, as an infiltration BMP is still proposed at this location.
	<i>SPLP Response:</i>	<i>The Montello Road block valve will be vegetated and no longer proposes the use of an infiltration BMP.</i>
Pg. 13 10.	DEP	Technical Deficiency No. 33 from DEP’s TD Letter has not been adequately addressed. The following technical deficiencies are associated with Attachment 5: 25 Pa Code § 102.8 & 102.11
	i.	The deficiency remains, due to some infiltration BMPs still not providing or demonstrating the recommended 2-ft. separation.
	<i>SPLP Response:</i>	<i>All block valve sites that propose infiltration BMPs maintain 2-ft of separation from seasonal high water table and bedrock, in accordance with requirements for infiltration BMPs outlined in the PA Stormwater BMP Manual. Slow release concept trenches are within 2-ft of bedrock at several block valve sites. However, the slow release concept trenches will be lined with an impermeable liner as specified in the detail, and the BMP will not function as an infiltration BMP.</i>
	u.	Wolf Bridge Road A & B site:
	i.	Because the Soil Logs were taken in different locations from the infiltration tests, identify the location of the Soil Logs (this deficiency is applicable to any other site/location where the Soil Log location is different from the infiltration test location and not otherwise identified).
	<i>SPLP Response:</i>	<i>Due to the uniform topography and surface conditions across the site, initially, one boring was completed mid-point between IT-1 and IT-3 and another boring at the mid-point of IT-2 and IT-4. Based on the different response observed in the Infiltration test at IT-1 compared to the other locations, a third boring was performed near IT-1 to further evaluate specific soil conditions.</i> <i>The Wolf Bridge Road block valve site will be vegetated and no longer proposes the use of PCSM BMPs.</i>
	ii.	Provide the additional discussion related to the observed oxidation, including what information was evaluated by the qualified professional and how they determined that the oxidation is not the result of a regularly occurring seasonally high water table.

	<i>SPLP Response:</i>	<p><i>Section 3.1 will be updated to reflect that the oxidation that occurred on the shale was in the form of iron oxidation (rust) based on the dark reddish staining observed. It is assumed that the weathered rock would not inhibit infiltration of water since the boring and soil logs show that it was easily broken and exhibited evidence of weathering (iron oxidation). Based on site conditions (agriculturally maintained soy bean field), shallow depth to bedrock and relative elevation with respect to nearby creek, the staining is not likely due to seasonal high groundwater, but infiltrated water.</i></p> <p><i>The Wolf Bridge Road block valve site will be vegetated and no longer proposes the use of PCSM BMPs.</i></p>
Pg. 13 11.	DEP	<p>All block valve sites will require PCSM analysis; as the sites that are co-located, gravel to gravel, no increase in impervious area/gravel area, etc. are not considered site restoration and are not applicable to 25 Pa. Code § 102.8(n). Provide all necessary PCSM calculations, design information, etc. for all block valve sites. If exceptions (such as the construction of utility infrastructure and the site will be returned to existing conditions) to 25 Pa. Code §§ 102.8(g)(2)(i) & 102.8(g)(2)(ii) will be utilized/claimed, ensure that the proper discussion and information is provided for each individual site. 25 Pa. Code §§ 102.8(f)(4), 102.8(f)(8), 102.8(f)(15), 102.8(g)(1), 102.8(g)(2), 102.8(g)(3) & 102.8(g)(4)</p> <p>There are sites that identify PCSM Required as ‘Yes’ but do not provide PCSM information (e.g. Old York Road). Clarify these discrepancies. 25 Pa. Code § 102.8(f)(15)</p>
	<i>SPLP Response:</i>	<p><i>Vegetated block valve sites fall under site restoration and comply with 102.8(n). Co-located sites that located in areas of existing impervious cover do not require PCSM calculations because those sites will be returned to existing conditions in accordance with 102.8(g)(2) and 102.8(g)(3). The block valve summary Table has been updated in Section 2.0 of the Site Restoration and Post-Construction Stormwater Management Plan to provide clarification for which block valve sites require PCSM. The revised PCSM Narrative has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>
Pg. 14 12.	DEP	<p>The following technical deficiencies are associated with Attachment 4:</p>
	a.	<p>There are numerous ‘Slow Release Concept’ BMPs that are designed to dewater in less than 24 hours (e.g. Charger DA-1 is identified as dewatering in less than 10 hours). Where these BMPs are designed to dewater in less than 24 hours, provide a justification that the BMP will appropriately manage the net change in the runoff volume. 25 Pa. Code § 102.8(g)(2)</p>
	<i>SPLP Response:</i>	<p><i>The Slow Release Concept BMPs at the Charger Highway block valve site and the Locke Mountain Road block valve site site have been revised to dewater in 24 hours or greater to appropriately manage the net change in runoff volume. The revised PCSM Calculations, Attachment 4 of the PCSM Plan, are posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>

	b.	For the Hopeland Road site, the Infiltration Berm Dewatering Calculation identifies that the design dewatering time exceeds the recommended maximum of 72 hours from Chapter 3 of the PCSM Manual. Revise the design such that the proposed BMP will dewater within the maximum recommended time of the PCSM Manual or provide the alternative BMP and design standard demonstration. This is also a technical deficiency for the Montello site. 25 Pa. Code §§ 102.8(f)(8), 102.11(a)(2) & 102.11(b)
	<i>SPLP Response:</i>	<i>The Hopeland Road block valve will be vegetated and no longer proposes the use of a PCSM BMP.</i>
Pg. 14 13.	DEP	The following technical deficiencies are associated with Attachment 5: 25 Pa Code § 102.8(g)(1)
	a.	Valley Forge Road EFRD Site: Section 2.0 identifies that the soil was characterized to two feet below the target infiltration test depth; however, the Soil Log for IT-B identifies the soil was characterized to a depth of 13-in. Clarify this discrepancy.
	<i>SPLP Response:</i>	<p><i>As summarized on the Soil Log for IT-B, three attempts were made to hand auger to 28 inches, though all were unsuccessful. As noted in the comments within the Soil Log, the area contained numerous rocks (not believed to be bedrock), preventing completion to the target depth. Based on Table 1, IT-B is located outside of the BMP areas and is not used for any calculations or designs.</i></p> <p><i>On July 4, 2015, a soil boring VB-01 was completed with SPT information and soil lithologies to a depth of 15 feet and on September 11, 2015, two soil borings (IT-1 and IT-2) were completed to 30 inches bgs. These soil borings were located less than 100 feet from IT-B and all are within the same agriculturally maintained field (see Figure 1 in 2015 and 2016 Trip Reports). Fine rock fragments are observed from 1 to 3 feet bgs and partially weathered layers of siltstone (or shale) are noted below 3 feet bgs.</i></p> <p><i>The following text has been added at the end of the second sentence on the final paragraph of the first page – “... (a maximum depth of 13 inches bgs was reached at IT-B due to presence of numerous rocks and multiple attempts).” The amended infiltration reports are posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i></p>
	b.	For the Charger Highway EFRD Site the first sentence of the second paragraph in Section 2.0 identifies that the double-ring infiltration tests were performed in accordance with the PCSM Manual. The fifth sentence of the second paragraph in Section 2.0 identifies that the rings were driven a minimum of 1-inch into the soil; however, Protocol 1, Step 3.a of Appendix C of the PCSM Manual recommends to drive the rings into soil a minimum of 2-in. Provide the alternative BMP and design standard which identifies how the seating of the rings by half of the recommended depth is sufficient and an adequate testing methodology. 25 Pa. Code §§ 102.11(a)(2) & 102.11(b)

	<i>SPLP Response:</i>	<p><i>The last paragraph on the first page of the Trip Report (Section 2) notes that due to the presence of shallow fractured bedrock and since the infiltrometer rings could not be installed competently, the test was discontinued before completing the pre-soak. Further, additional testing locations IT-B, IT-C and IT-D were not completed due to the presence of shallow bedrock and poor pre-soak results at IT-A. Therefore, as shown in the Trip Report and Table 1, no infiltration testing was completed at the site for any of the pre-determined locations.</i></p> <p><i>Alternative BMP and design standards are not necessary since Infiltration Testing was not performed.</i></p>
	c.	<p>Locke Mountain Road Site: The Infiltration Test Data Sheet for IT-B Deep identifies that slight leakage was observed due to not being able to properly seat the rings; however, testing was still performed and reported. Provide discussion which identifies how the performed test method is acceptable and appropriate due to site conditions of not being able to properly seat the rings.</p>
	<i>SPLP Response:</i>	<p><i>While slight leakage is noted to occur from the outer ring due to the outer ring being set in shale material, measurements are only recorded on the inner ring for determining the infiltration rate. A consistent 1/16 inch drop per 30 minutes was recorded. Additionally, only 100 ml of water was added during each 30 minute cycle, which is typical for this minor drop observed considering accuracy of small volume equipment (measuring cups used are accurate to 100 ml).</i></p> <p><i>Based on Table 1, no recommended rates are determined since area is a Slow Release Area. Therefore, while minor leakage occurred at IT-B, the data was not used for calculations or design purposes.</i></p>
	d.	<p>For the Raystown Road EFRD Site: the testing for IT-A identifies a high infiltration rate, and Table 1 – Summary of Infiltration Rates identifies a Recommended Rate of 10.0 in./hr. for IT-A. Based upon the plan drawing information, IT-A is located inside Berm A. 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)</p>
	<i>SPLP Response:</i>	<p><i>Review of the Infiltration Testing Log Sheets confirms that the rate as determined is correct (20 inches/hour). Further, the recommended rate of 10 inches/hour outlined on Table 1 is also confirmed. Based on the recommended rate and Protocol 2.1c in Appendix C, while on the upper limit of the acceptable range, the recommended rate is within the stated range. However, the recommended rate is not used since the site is now vegetated.</i></p>
<u>PCSM Narrative Mount Union Valves</u>		
Pg. 15 1.	HCCD	<p>Technical Deficiency No. 8 from DEP's TD Letter has not been adequately addressed. The following technical deficiencies are associated with Section 3.8 starting on Page 11: 25 Pa Code § 102.8(f)(10)</p>

	b.	The deficiency remains, as the long-term operation and maintenance schedule includes “replace gravel/filter media...”. Revise the long-term operation and maintenance schedule so that it is written for the type of BMP proposed, which is an infiltration trench. To avoid confusion, revise the identification of the BMP to identify it as an infiltration trench, or provide the information/discussion/design as to how the BMP is acting as a filter. 25 Pa Code § 102.8(f)(6)
	<i>SPLP Response:</i>	<i>The BMP was identified as an infiltration trench throughout the report. The Long Term Maintenance descriptions in Section 3.8 were revised to reflect maintenance associated with an infiltration trench. The updated Mount Union PCSM report has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 15 2.	HCCD	Technical Deficiency No. 24 from DEP’s TD Letter has not been adequately addressed. The following technical deficiencies are associated with Appendix F: 25 Pa Code §§ 102.8
	c.	The following technical deficiencies are associated with PCSM Standard Worksheet #4:
	i.	Provide the discussion in the response within the narrative. Ensure to clearly identify that the disturbed area is properly managed (the provided discussion in the response does not make it clear).
	<i>SPLP Response:</i>	<i>The information provided in the comment response (24.c.i) was added to the PCSM narrative. The differences between the total area, managed area and drainage area were clarified. The updated PCSM report has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
	ii.	Provide the discussion in the response within the narrative. Ensure to clearly identify that the disturbed area is properly managed (the provided discussion in the response does not make it clear).
	<i>SPLP Response:</i>	<i>The information provided in the comment response (24.c.ii) was added to the PCSM narrative. The updated PCSM Narrative has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
	d.	The latest version of PCSM Standard Worksheet #5 was not utilized. The discussion provided in the response identifies that the volume provided on Worksheet #5 is the volume below the lowest orifice of the BMP. However, that does not appear to be the volume permanently removed during the 2-year/24-hour storm event; as the routing information in Appendix F appears to identify a volume retained of 0.137 ac.-ft. (or 5,968 cf). Ensure that the proper information is reported on Worksheet #5. Make all revisions necessary.
	<i>SPLP Response:</i>	<i>The latest Worksheet #5 was utilized. The volume reduction identified on Worksheet #5 was revised to match the value in Appendix F (5,968 cf). The updated PCSM Calculations have been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 15 3.	HCCD	There appears to be a discrepancy in the size/configuration of the BMP in Section 4.3 on Page 16 versus Table 4.3 on Page 17. Section 4.3 identifies four barrels at 280-ft. each; however, Table 4.3 appears to identify the equivalent of one barrel at 450-ft. Clarify this discrepancy and make all revisions necessary. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(8)

	<i>SPLP Response:</i>	<i>The footnote to Table 4.3 incorrectly listed the total pipe length as 450 feet. The footnote was revised to list the total pipe length as 1120 feet. The values in the table were correctly calculated using the 1120 feet of pipe length.</i>
Pg. 15 4.	HCCD	Section 4.4 on Page 18 identifies the design infiltration rate of 0.8 in./hr. in the second paragraph; however, it appears that the calculations utilized an infiltration rate of 0.97 in./hr. A Surface area of BMP was identified as 5,600 sf at the beginning of the calculations; however, it appears an area of 2,250 sf was used in the actual calculations. Clarify these discrepancies. 25 Pa. Code § 102.8(f)(8)
	<i>SPLP Response:</i>	<i>The 5,600 sf surface area value and 0.8 in/hr infiltration rate value are correct.</i>
Pg. 16 5.	HCCD	Appendix B: The Infiltration Test Data Sheet for IT-A identified that the rings were installed on top of a rock and not seated completely; however, there is no discussion of this in the Trip Report’s narrative. Provide discussion as to how the performed test, with rings not seated properly, provides valid results. 25 Pa. Code § 102.8(g)(1)
	<i>SPLP Response:</i>	<i>The following text has been inserted before the final sentence of the second paragraph of Section 2.0 – “At IT-A, initially, the rings were not seated completely due to the presence of rocks. However, during the pre-soak, the rings achieved proper sealing as evidenced by decreased water drop and water loss during the final 30 minutes of the pre-soak. Since water level drop was observed to decrease, a 30-minute test was performed (even though over 2 inches of water level drop was observed in the last 30 minutes).” The updated Section 2.0 has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
<u>PCSM Narrative Doyleburg Station/Valves</u>		
Pg. 16 1.	PCCD	Technical Deficiency No. 2 from DEP’s TD Letter has not been adequately addressed. 25 Pa Code §§ 102.8(f)(3) & 102.8(f)(6) The response indicates a note was added to Section 2.0 regarding the proposed PCSM BMPs. However, no site description properly identifying the PCSM BMPs could be located.
	<i>SPLP Response:</i>	<i>The comment response was incorrect. The BMP descriptions are located in Section 4.0 of the PCSM report. The updated PCSM report has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 16 2.	PCCD	Technical Deficiency No. 12 from DEP’s TD Letter has not been adequately addressed. 25 Pa Code §§ 102.8(g)(2) & 102.8(g)(3) The response indicates that the storm events were labeled as 24-hour events in Section 3.10 and Section 4.1. However, PondPack model still appears to utilize a 48-hour duration. Revise the model to reflect the 24-hour storm duration or provide documentation to support that the use of the 48-hour duration will either be more protective than required or will maintain and protect existing water quality and existing designated uses by maintaining preconstruction site hydrologic impact.

	<i>SPLP Response:</i>	<i>The PondPack model does use the 24-hour duration storm events as indicated in pages 6-16 of the PondPack report. The duration of the model run is 48-hours as indicated in the pond routing hydrographs later in the report. The 48-hour model run was necessary to observe pond drawdown times. The updated PCSM Calculations have been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 16 3.	PCCD	<p>Technical Deficiency No. 14 from DEP’s TD Letter has not been adequately addressed. 25 Pa Code §§ 102.8(f)(6) & 102.8(f)(10)</p> <p>The response indicates that Section 3.10 has been deleted and the PCSM BMP discussion is found in Section 4. However, the plans show underground storage pipe system, but Section 4.3 still references an infiltration filter with perforated piping for additional storage. Worksheet 5 indicates and Infiltration Bed, while the ‘Stormwater BMP Information Chart 5.B’ indicates a Constructed filter. Clarify the discrepancies. If an alternative BMP is going to be utilized, which is not identified in the PCSM Manual or meeting the recommendations within the PCSM Manual, provide a demonstration which how the alternative BMP and design standard will achieve the same regulatory standards as the recommendations of the PCSM Manual.</p> <p>Also, the operation and maintenance on Page 14 of the PCSM Plan Narrative references filter media associated with the Underground Storage Pipes. Clarify if the media is referencing the gravel or if another filter media is proposed. Properly identify the type of PCSM BMP being utilized.</p>
	<i>SPLP Response:</i>	<i>There is some inconsistency in the terminology used to describe the BMP. However, the BMP is consistent with the PCSM Manual BMP 6.4.3 Subsurface Infiltration Bed. The BMP was labeled in all locations in the PCSM Report and the PCSM drawings as a Subsurface Infiltration Bed. The updated PCSM Report and PCSM Drawings have been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 16 4.	PCCD	Technical Deficiency No. 24 from DEP’s TD Letter has not been adequately addressed. The following technical deficiencies are associated with the Trip Report in Appendix B: 25 Pa Code §§ 102.8(f)(9) & 102.8(g)(1)
	a.	The response indicates that Figure 1 was revised for the new test locations. However, the testing locations have not been provided on the PCSM Plan drawings. Provide the test locations on the PCSM Plan drawings.
	<i>SPLP Response:</i>	<i>The location of infiltration test points IT-3 and IT-4 are identified on sheet C-3 of the PCSM drawings. The updated PCSM drawings have been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 17 5.	PCCD	Technical Deficiency No. 27 from DEP’s TD Letter has not been adequately addressed. The following technical deficiencies are associated with Appendix E: 25 Pa Code § 102.8(g)(2)(i)
	d.	The response indicates that 20% of the existing impervious was changed to meadow in good condition in the PondPack model. However, this is not clearly explained or shown in the PCSM Plan Narrative, on Worksheet 4 or within the PondPack model. Clearly indicate the total existing impervious and the area that represents the 20% of the existing impervious considered meadow in good condition.

	<i>SPLP Response:</i>	<i>On Worksheet 4 and in the PondPack report, the pre-development meadow acreage is 0.04 and the impervious gravel acreage is 0.16. The actual pre-development gravel acreage is 0.20. Therefore, the 20% meadow requirement is included in the calculations. Section 4.2 of the PCSM plan was updated to more clearly explain how this requirement has been met. The updated PCSM Calculations have been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 17 6.	PCCD	Technical Deficiency No. 28 from DEP’s TD Letter has not been adequately addressed. The following technical deficiencies are associated with Appendix F: 25 Pa Code §§ 102.8(f)(8), 102.8(f)(15), 102.8(g)(2) & 102.8(g)(4)
	<i>SPLP Response:</i>	<i>See comment response Pg. 17 #7 below.</i>
Pg. 17 7.	PCCD	The soil testing indicates that mottling was noted in IT-3. Mottling can be evidence of regularly occurring seasonally high water table. Clarify if there is 2-feet of separation from the bottom of the proposed BMP and any limiting zone (i.e. regularly occurring seasonally high water table). 25 Pa Code §§ 102.8(f)(15) & 102.8(g)(1)
	<i>SPLP Response:</i>	<i>As summarized in Section 3.1, mottling was noted at 60 inches below ground surface at IT-3 and seasonal high groundwater was not observed at IT-3 or IT-4. As noted in the Soil Boring Logs for both IT-3 and IT-4, seasonal high groundwater was not observed, and test pits were only observed to be moist. Silty clay was also dominant throughout both test pits from essentially ground surface to maximum depths. Further, the Infiltration Rate was 0 inches/hour at IT-3 and 0.031 inches/hour. Considering all of these observations, it was concluded that the noted mottling at IT-3 was not due to seasonal high groundwater. Although, it is possible that the mottling could be due to a seasonal perched condition or slow infiltration of increased precipitation events rather than seasonal high groundwater.</i> <i>The following text has been added before the final sentence of the first paragraph in Section 3.1 – “Since seasonally high groundwater was not encountered, the mottling observed is not likely due to the unconfined water table. Rather, the mottling observed is likely a consequence of a seasonal perched zone or slow infiltration of increased precipitation events through the finer grained soils.” The updated Section 3.1 has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 17 8.	PCCD	Provide a demonstration/justification for the time of concentration used in the post-development hydrographs. 25 Pa Code §§ 102.8(f)(8), 102.8(g)(3) & 102.8(g)(4)
	<i>SPLP Response:</i>	<i>The controlled post-development Tc is the minimum, which is the most conservative option. The uncontrolled post-development and the pre-development Tc were revised at the bottom of the watershed where development occurs. Drainage area figures were modified to show the revised Tc paths. Text was added to Section 4.1 of the PCSM report providing more information on Tc calculations. The updated PCSM Narrative has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>

Pg. 17 9.	PCCD	<p>The underground storage pipe system was not modeled accurately for stormwater rate or volume management. If the 2-inch underdrain will be open during normal operating conditions, it needs to be modeled as such. If not, the standing water up until the 5 inch orifice needs to be modeled, since there is no infiltration. Revise as necessary. 25 Pa Code §§ 102.8(f)(8), 102.8(g)(2), 102.8(g)(3) & 102.8(g)(4)</p>
	SPLP Response:	<p>The only way to add the underdrain into PondPack is as a constant infiltration rate from the pond. However, infiltration cannot be added back into the routed pond outfall in PondPack. Therefore, the constant infiltration rate was added in manually to the routed pond outfall. This was noted in Table 4. The underdrain volumes were not added in because the slow release underdrain was determined to be an approved volume removal method.</p>
<p>PCSM Narrative Middletown Pump Station</p>		
Pg. 17 1.	DCCD	<p>Technical Deficiency No. 6 from DEP’s TD Letter has not been adequately addressed. 25 Pa Code § 102.8(f)(8)</p> <p>The response indicates that the calculations are located in the PondPack Report, Appendix C and D. However, the weighted Curve Number calculations could not be located for the stormwater rate calculations. Provide documentation/calculations to support the CN values utilized.</p>
	SPLP Response:	<p>A summary of the weighted Curve Number calculations for each Point of Interest have been added to the report. The updated report has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</p>
Pg. 17 2.	DCCD	<p>Technical Deficiency No. 22 from DEP’s TD Letter has not been adequately addressed. The following comments relate to the Trip Report in Appendix F: 25 Pa Code §§ 102.8(f)(9) & 102.8(g)(1)</p> <p>a. The response indicates that the testing performed in October 2015 utilized the double-ring method and the testing from March 2015 utilized the single-ring method. Section 1.0 was updated to remove the ‘single-ring’ reference. However, the infiltration rate for Infiltration Bed #2 is based on the testing from March 2015 (which was the single-ring testing methodology). Clarify these discrepancies. Ensure that all information related to the predevelopment site characterization has been provided and is evaluated versus the design.</p>
	SPLP Response:	<p>The March 2015 report results were utilized for design of Infiltration Bed #2, which was completed with the “single ring” method. From the March, 2015 report, IT-01 was tested at elevation 350.8; the proposed Infiltration Bed #2 bottom is elevation 344.0. The volume reduction used for this BMP will be removed from Worksheet #5, since the test elevation does not match the infiltration bed elevation. Infiltration Bed #1 was increased in size to compensate for the loss of Infiltration Bed #2. The overall site volume reduction BMPs will still meet the required volume reduction required under Worksheet #4. Infiltration Bed #2 will function only for rate reduction for the small portion of roadway that is tributary to it.</p>
	b.	<p>The response indicates that the test pits have been added to the plan. Confirm that the test pit used for the design of PCSM BMP are located within 25 feet of the BMP.</p>

	<i>SPLP Response:</i>	<i>All October, 2015 test pits that are currently shown on Sheet #2 have been added to Sheet #3. All of the proposed BMPs that function to infiltrate runoff volumes are within 25' of the soil testing locations completed in October, 2015, except for SRC Infiltration Berm #1. The SRC design berms and basins that have zero or negligible infiltration rates may be over 25' away from the test pit areas, but since these BMPs are not traditional infiltration facilities, their proximity to the test locations are irrelevant.</i>
	c.	Based on the table and information provided in Appendix F, there is not documentation to support that there are no limiting zones within the proposed facilities or within 2 feet below the proposed infiltration facility. Provide a demonstration that there is 2 feet of separation from the bottom of the infiltration facility and any limiting zone for Infiltration Bed 2 and SRC Basin #1. Provide a demonstration that there is not any limiting zones (i.e. groundwater or bedrock) encountered within the proposed SRC facilities that would alter their function.
	<i>SPLP Response:</i>	<i>Encountering bedrock within the SRC facilities is immaterial since all runoff that travels through the sand filter media is re-collected and allowed to discharge to surface waters. Based on deep auger tests completed in March, 2015, groundwater was not encountered within any of the test sites.</i>
Pg. 18 3.	DCCD	The following technical deficiencies are associated with the Bentley Pond Pack calculations for Infiltration Bed #2: 25 Pa Code §§ 102.8(f)(8) & 102.8(f)(9)
	a.	The total bed length and width do not correlate to the length and width shown on the PCSM Plan drawings.
	<i>SPLP Response:</i>	<i>The Infiltration Bed #2 detail on Sheet 6 has been revised to 28' width. The length of pipe from Inlet #8 to the existing inlet in the turnaround is 53'. The length of perforated pipe within the bed area is 49', which is reflected in the report. Infiltration Bed #2 is not being used for a volume reduction BMP, it only functions as a rate control BMP. The revised Sheet 6 has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
	b.	A 6-inch circular orifice is modeled at elevation 345.75, but shown on the PCSM Plan drawings as a 7-inch orifice.
	<i>SPLP Response:</i>	<i>The details for Bed #2 have been edited to show a 6" orifice. The updated PCSM Plan Drawings have been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
Pg. 18 4.	DCCD	Provide separate Worksheets for each Point of Discharge (i.e. Worksheet 1, 2, 3, 4, 5 10, etc.). 25 Pa. Code §§ 102.8(f)(4), 102.8(f)(8), 102.8(g)(2), 102.8(g)(3) & 102.8(g)(4)
	<i>SPLP Response:</i>	<i>Separate worksheets were completed for all three points of discharge within the site limits. For each point, the post-developed volumes and rates are equal to or less than the pre-developed values. These worksheets are shown in Appendix E of the report and has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>

Pg. 18 5.	DCCD	The identified ‘Slow Release Concept’ basins and berm do not account for the outflow from the pipes in the stormwater rate analysis. Update the analysis to reflect the outflow from the systems based on the limiting factor of the systems (i.e. filter media, perforated pipe, etc.). 25 Pa. Code §§ 102.8(f)(8), 102.8(g)(3) & 102.8(g)(4)
	SPLP Response:	<i>The limiting factor for the SRC Basins is the sand filter media. The total length of 4” perforated underdrain within each basin can contribute .0233 cubic feet/sec/LF of pipe, which is much greater than what can travel through the sand layer. For Basin #1, the sand layer will allow .09 cfs and the 4” perforated pipe will allow 5.85 cfs. The same is true for Basin #2; the sand layer allows .026 cfs and the 4” perforated pipe allows .67 cfs. In each case, after combining the post developed flows from the outlet structure orifice and the sand filter, the post developed peak rates are less than the pre developed peak rates of flow.</i>
PCSM Narrative Beckersville Pump Station		
Pg. 18 1.	BCCD	Worksheet 10 claims PCSM BMP 5.4.3 ‘Protect/Utilize Natural Drainage Features’. Clarify where the existing natural drainage feature is located. Ensure that a proper long-term operation and maintenance schedule is provided. 25 Pa Code §§ 102.8(f)(6), 102.8(f)(9) & 102.8(f)(10)
	SPLP Response:	<i>There are no existing natural channels or swales on the site. The existing and proposed basins discharge to the beginning of an unnamed tributary to Muddy Creek (#62107 HQ-TSF). On Worksheet #10, this discharge point is considered “protected and utilized”. We cannot provide a vegetated channel to this discharge point due to the steep slopes on this site, therefore, we provided a storm pipe system and riprap apron. We have added specific long-term operation & maintenance procedures for the discharge point and riprap apron. See Sheet 3 of 8 of the PCSM Plans.</i>
PCSM Plan Drawings – Block Valve		
Pg. 18 1.	BCCD	The following technical deficiencies are associated with Sheet PCS-4.06: 25 Pa Code § 102.8(f)(9)
	a.	The calculations identify a trench length of 66-ft. for Trench B; however, the plan drawing appears to show the trench that isn’t labeled Trench A at a length of approx. 44-ft. Clarify this discrepancy. 25 Pa. Code § 102.8(f)(8)
	SPLP Response:	<i>The W. Trindle Road block valve will be a vegetated block valve site and no longer proposes PCSM BMPs. The plan drawing has been updated accordingly. The PCSM Plan drawing has been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
PCSM Drawings Middletown Pump Station		
Pg. 18 1.	DCCD	The detail for the SRC Basins identifies that the filter media will be tested after construction to verify the infiltration; however, testing after construction is not adequate. Provide testing information for the material specified, which identifies that the material can achieve the design infiltration rate. 25 Pa Code § 102.8(f)(6)

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Pennsylvania Department of Environmental Protection

	<i>SPLP Response:</i>	<i>The note regarding the in-place testing of the filter media (sand) in the SRC Basins has been removed. The material specified will meet the requirements of PADOT Form 408, Bituminous Concrete Sand, Type B, #3. This readily available material is commonly used for elevated sand mound septic systems. The SRC Basin design guidelines reference BMP 6.4.7 Constructed Filter, which further recommends a sand media with an infiltration rate of 3.5 ft/day (1.75 in/hr) and also further mentions material meeting the requirements of ASTM C33. The material that is specified for the sand filter meets this requirement, so no further testing information should be required. PADOT and local material suppliers do not have infiltration rates for the Type B3 sand. Also, since the SRC Basin does not technically infiltrate runoff, the infiltration rate calculation that is used for the material is irrelevant. The updated Pump Station sheets have been posted on the SharePoint site located here: MEII DEP Agency Documentation SharePoint Site.</i>
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SPLP appreciates your timely review of this application. Please contact Rob Simcik of Tetra Tech, Inc. with any questions at 412-921-8163, or email Robert.simcik@tetratech.com.

Sincerely,



Robert F. Simcik, P.E.
Project Manager
Tetra Tech, Inc.

RFS/clm

Enclosures: Attachments

cc:

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