Transcontinental Gas Pipe Line Company, LLC

Response to Technical Deficiency Letter dated February 24, 2017
Erosion and Sediment Control General Permit (ESCGP-2)

Pennsylvania Department of Environmental Protection

Atlantic Sunrise Project

April 2017

DEP File No. ESG03000150001

Cleveland, Franklin, Greenwood, Hemlock, Jackson, Montour, Mount Pleasant, Orange, Rapho & Sugarloaf Townships, Columbia County
Conestoga, Drumore, East Donegal, Eden, Manor, Martic, Pequa, Rapho & West Hempfield Townships and Mount Joy Borough, Lancaster County
Cold Springs, East Hanover, North Annville, North Lebanon, South Annville, South Londonderry, Swatara & Union Townships, Lebanon County
Dallas, Fairmont, Harveys Lake, Jenkins, Lake, Lehman & Ross Townships, Luzerne County
Coal, East Cameron & Rapho Townships, Northumberland County
Eldred, Frailey, Hegins, Pine Grove, Porter & Tremont Townships, Schuylkill County
Lenox Township, Susquehanna County
Clinton, Eaton, Falls, Monroe, Nicholson, Northmoreland & Overfield Townships, Wyoming County

NOTICE OF INTENT

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

1. Original Comment #6: Identify the activities beyond the CPL North and South (e.g. regulator stations, temporary access roads, permanent access roads, etc.) in Section 1.2.8. [25 Pa. Code §102.6(a)(1)]

   It does not appear that Section 1.2.8 has been revised to show the activities that are being proposed beyond the CPL North and CPL South transmission line. Please provide all additional activities that are also proposed for construction (i.e. regulator stations, temporary and permanent access roads, main line valves, compression stations, etc.).

   RESPONSE: The revised application includes updates to Section 1.2.8 of the NOI to provide all proposed construction activities via a reference to Section 1.2.4, which includes the complete discussion of the activities associated with the construction of CPL North and South and Associated Facilities.

GENERAL E & S TECHNICAL DEFICIENCIES RELATED TO ALL DOCUMENTS

1. Water deflectors and the like require the same end treatment as waterbars, i.e., sump/filtering. Please revise all plans and details to address this comment. 25 Pa. Code §102.11(a)(1)].

   RESPONSE: Filter sock and sumps (similar to the waterbar end treatment) have been added to all broad-based dip and water deflector locations as requested. The 20,000 square feet used for the rational method calculation previously completed for the waterbar end treatment exceeds all broad-based dip and water deflector drainage areas. Therefore, no additional calculations were performed to size the compost filter sock and sump.

2. Stabilized construction entrances have not been provided at all locations where proposed gravel or dirt access roads intersect with paved roads. Please revise all plans to address this comment. 25 Pa. Code 5102.11(a)(l).

   RESPONSE: Stabilized construction entrances are now shown on the Soil Erosion & Sediment Control Plans / Site Restoration Plans at all locations where proposed gravel or dirt access roads intersect with paved roads.

3. When existing dirt roads are proposed to be used, erosion and sediment control best management practices ("BMPs") are required to be implemented and maintained to minimize accelerated erosion and sedimentation from the construction activities associated with the use of existing dirt roads. Please revise. 25 Pa. Code §102.11 (a)(l).

   RESPONSE: The access roads were reviewed to verify that existing dirt roads include E&SC BMPs. The existing road type for AR-SC-061.1 was incorrectly labeled as dirt. The callouts have been revised to correctly describe the existing road as gravel. Existing road types have been added to all access roads to clarify that the existing roads to be used "as is" are gravel. Typical road sections with gravel will be added to all existing dirt access roads. Upon project completion, the gravel will be removed and the access road will be restored to pre-construction dirt condition.

4. Construction details are required for all proposed infiltration berm construction and retentive grading. Check proposed grading for all infiltration berms/retentive grading. 25 Pa. Code §102.4(b)(5)(ix).

   RESPONSE: The typical detail of the infiltration berms and sedimentation basin have been added to the road-specific Soil Erosion Control Plan and PCSM Plan for the access roads with infiltration berms/retentive grading. (AR-LA-026.2.1, AR-CO-097.1.1, and AR-SC-073.5) Proposed grading is designed to direct runoff to the infiltration berms/retentive grading to meet the detention requirements for mitigating the increase in peak flow rate for up to the 100-year, 24-hour design storm event.

5. Several streambank stabilization methods are proposed in the Erosion and Sedimentation Control Plans. Identify where each type of stabilization measure will be utilized. Pa 25 code §102.4(b)(5)(ix).

RESPONSE: The streambank stabilization with reinforcement blanket (SBR) BMP has been incorporated into the E&SC Plans, specifically in the E&S Detail or Detail Group band in all counties.

6. The proposed temporary equipment crossing design does not include any measures to prevent sediment from falling off the sides of the equipment crossing into waters of the Commonwealth. Please modify the temporary equipment crossing design to insure that appropriate measures are proposed to address this concern. Please note that modifying the design to provide for the installation of a 1-foot high side rail that will also be wrapped with an appropriate geo-textile fabric would be an acceptable design modification. Pa 25 Code §102.4(b)(5)(ix).

   RESPONSE: A 1' high side rail wrapped with appropriate geotextile fabric has been added to the Bridge Equipment Crossing detail (BEC) on Sheet 1 of 11 of the Best Management Practices and Quantities Plan Set.

7. Each of the temporary equipment stream crossings shown on the plan view drawings reference numerous typical details for various methods that the contractor may utilize to construct the crossings. The methods include 1. Bridge Equipment Crossing (BEC); 2. Flume Stream Crossing (EX); 3. Wet Minor Waterbody Crossing (MWC); 4. Temporary Stream Crossing Multiple Pipes (TSC.2); 5. Timber Matting Air Bridge (MAT.3); 6. Wet Intermediate Waterbody Crossing (IWC); and 7. Clean Water Crossing (CWC). The Stream impacts vary for each method. Please choose a single method that is both practical and has the least impact on the stream and floodway. Revise the plans and other applicable components of the application appropriately. Please show the proposed erosion and sediment control BMPs on the Soil Erosion and Sediment Control Plan/Restoration Plan. 25 Pa. Code §102.4(b)(5)(ix).

   RESPONSE: The temporary stream crossing methods were assessed on a site-specific basis to be the least impactful, and are considered the primary crossing method. Primary crossing methods are shown on the revised ES&C plans, specifically in the E&S Detail or Detail Group band in all counties.

8. Each of the temporary equipment wetland crossings shown on the plan view drawings reference numerous typical details for various methods that the contractor may utilize to construct the crossings. The methods include 1. Timber Matting in Wetlands (MAT. 1); 2. Wetland Equipment Crossing (WEC). The Wetland impacts vary for each method. Please choose a single method that is both practical and has the least impact on the wetland. Revise the Soil Erosion and Sediment Control Plan/Restoration Plan and other applicable components of the application appropriately. 25 Pa. Code §102.4(b)(5)(ix).

   RESPONSE: There are two methods described in the comment for temporary equipment wetland crossing methods: wetland equipment crossing (WEC) and timber matting in wetlands or at low points (MAT.1). The primary wetland equipment crossing method is the wetland equipment crossing (WEC) provided in the revised ES&C plans, specifically in the E&S Detail or Detail Group band in all counties. The wetland equipment crossing (WEC) detail was never intended to span over wetlands, therefore the WEC detail in the best management practices detail sheets has been modified to reflect the purpose and intent of a timber mat crossing a wetland. WEC is the only proposed wetland equipment crossing method.

9. Each of the utility crossings shown on the plan view drawings reference numerous typical details for various methods that the contractor may utilize to construct the crossings. The methods

include 1. Coffer Dam Stream Crossing (CD); 2. Dam and Pump Stream Crossing (DPX); 3. Flume Stream Crossing (FX); 4. Wet Intermediate Waterbody Crossing (IWC); 5. Wet Minor Waterbody Crossing (MWC); 6. Horizontal Directional Drill (HDD); 7. Bored Waterbody Crossing (WBX.I); 8. Unsaturated Wetland Installation Procedure (WCC. 1); 9. Saturated Wetland Installation Procedure (WCC.2); and 10. Inundated Wetland Installation Procedure (WCC.3). The stream impacts vary for each method. Please choose a single method that is both practical and has the least impact on the stream and floodway. Revise the Soil Erosion and Sediment Control Plan/Restoration Plan and other applicable components of the application appropriately. 25 Pa. code §102.4(b)(5)(ix).

RESPONSE: The temporary stream crossing methods were assessed on a site-specific basis to be the least impactful, and are considered the primary crossing method. Primary crossing methods are shown on the revised ES&C plans, specifically in the E&S Detail or Detail Group band in all counties.

COLUMBIA COUNTY

Erosion and Sediment Control Plan Narrative — Proposed Central Penn South

1. The following technical deficiencies are associated with the Contractor Staging Areas CS-CSACO-4-002.1/002.2:
    a. Original Comment g: It appears that E&S BMPs will be required for the site during final stabilization after replacement of the topsoil to address the concentrated flow paths of the original contours. 25 Pa. Code §§102.4(b)(5)(vi). and 102.22.

    More information is needed to support the assertion that hydro applied erosion control blanket can withstand anticipated flows from the 7-acre drainage area that will concentrate in the swale in the area of the proposed sediment basin when the area is returned to original contours.

    RESPONSE: The revised plans and calculations clarify that a rolled erosion control product is proposed to withstand the anticipated flow. Supporting calculations are provided in the Site-specific narrative for the staging areas. See Worksheet #11 in Appendix E.2 of the E&S narrative.

Soil Erosion and Sediment Control Plan / Site Restoration Plan Drawings — Proposed 30" Central Penn North

2. Original Comment #4: Provide a stabilized construction entrance at each place were the pipeline crosses a public road especially the sites that also act as access to contractor staging areas. 25 Pa. Code §102.11(a)(1).

    Please specify where the plans indicate that a rock construction entrance (RCE) will be installed at each road crossing. Please revise the alignment sheets accordingly.

    RESPONSE: Stabilized construction entrances are now shown in the Plan View on the Soil Erosion & Sediment Control Plans / Site Restoration Plans at each public road crossing.

3. Original Comment #7: More information is needed related to the stability of hydrostatic test dewatering locations. The discharge points are on steep grades and do not appear to be near streams. 25 Pa. Code §§102.4(b)(5)(ix) and 102.4(b)(5)(vi).

    It is still unclear what the potential erosion hazard is from the discharge of the dewatering water. Please provide additional information regarding the stability of the hydrostatic test dewatering locations.

    RESPONSE: Per our meeting with PADEP, it was confirmed that the PAG-010 for hydrostatic test dewatering locations covers erosion control/protection at each location. Therefore, no additional information is required with this submission.

4. The detail pages in the plans drawings for the various staging area sites has included the summary tables for various BMPs (i.e., swales, rip rap aprons, etc.) in the drawings but have not duplicated the complete construction detail in each drawing set. If the detail is not to be included, please add a note to each summary table identifying which construction detail is being referred to and the sheet in the BMP drawing set where it can be found. 25 Pa. Code §102.4(b)(5)(vii).

RESPONSE: The revised contractor staging area plans include tables to clarify where typical details for construction can be found within the BMP Plan Set.

5. New site CN-HTA-CO-Fishing Creek

   The drawings show a 30-foot driveway around a tank that appears to impact the existing drainage swale, but a note on the plans states that this swale is not to be disturbed. Please modify the plans to address this apparent inconsistency. 25 Pa. Code §102.4(b)(5)(ix).

   RESPONSE: The plans have been revised to clarify that the proposed driveway around the temporary storage tanks will be variable to avoid impacting flows within the adjoining swale. See Appendix E.2 of the E&S narrative.

6. The profile drawing of 5 identifies Hess Hollow as CWF. This stream is recognized by the Department of having an existing use of HQ and should be so labeled. Please revise the plans accordingly. 25 Pa. Code §102.4(b)(5)(v).

   RESPONSE: The profile on Sheet 3 of 5 has been updated to identify Hess Hollow as a HQ-CWF, MF.

<u>Soil Erosion and Sediment Control Plan / Site Restoration Plan Drawings — Proposed 42" Central Penn South</u>

7. Contractor Spread Yard CS-CY / CY-CO-4-10
   a. Sediment Basin
      i. Original Comment viii: Verify a minimum 2:1 flow length from filter sock diversion discharge to the outlets. 25 Pa. Code §102.11(a)(1).

         It does not appear that the planned baffle is adequate to provide the required 2:1 flow length from Diversion Swale A. Provide calculations for the required flow length that demonstrates how it has been met.

      ii. The bottom of the concrete pad under the riser structure is 6 inches above the elevation of the basin bottom. Provide details on what fill or material will be used under the concrete pad that will be stable when saturated or revise the plans to extend the bottom of the riser to solid foundation material. 25 Pa. Code §102.4(b)(5)(ix).
   b. Original Comment d: This site currently contains several diversion terraces constructed to control erosion when cropped. Identify on the plans the location of these terraces and that these terraces will be replaced when the site is restored. 25 Pa. Code §102.4(b)(5)(i).

      The plans do not clearly identify all the terraces currently on the property making it difficult to know what needs to be rebuilt. All existing terraces should be clearly identified on the drawings.

RESPONSE:

a. Sediment Basin:

i. The E&S plans have been revised to include updated baffle calculations to verify that the sediment basin meets the required 2:1 flow length to width ratio. See sheets 1 and 2

of 3 of the E&S plan set for this Site. See Worksheet #13 in Appendix E.1 of the E&S narrative.

ii. The revised design provides a riser that extends to the bottom of the basin. See sheet 2 of 3 of the E&S plan set and buoyancy calculations in Appendix E.1 of the E&S narrative.

b. Original Comment d:

The revised plans include additional notation to identify the location of the existing diversion terraces to be restored. See sheets 2 and 3 of 3 of the E&S plan set and the sequence of BMP construction in Appendix E.1 of the E&S narrative.

8. Contractor Staging Area CSA-CO-4-003:
    a. The plans call for a RCE with a wash rack. More information is needed as to the treatment of the water discharged from the wash rack. The RCE detail requires the discharge to be directed to a sediment basin or trap but none are shown on the plans. Please revise the plans accordingly 25 Pa. Code §102.4(B)(5)(i)(x).

RESPONSE: The revised plans include additional compost filter sock to treat water discharged from the RCE with wash rack. See sheet 1 of 2 of the E&S plan set.

9. Hydrostatic Tank Storage Area CS —HTA —CO-Roaring Creek
    a. There is an equipment pad that is being proposed to be constructed over a water of the Commonwealth, WW-T70-120011. This equipment pad cannot be located within this water of the Commonwealth. Please relocate the equipment pad to another area and limit the riparian buffer impacts. 25 Pa. Code §102.4(b)(5)(ix).
    b. No BMPs are proposed to control runoff leaving from the northwest side of the site during initial grading of the area and final stabilization. 25 Pa. Code §102.11(a)(1).

RESPONSE: This tank storage area has been removed from the application. Therefore, this technical deficiency is no longer applicable.

10. CS-HDD-CO-I80
    a. The drawings should clarify the location of the extent of the stone surfacing in the vicinity of the waterbody and identify the disturbance associated with the equipment pad in the waterbody. 25 Pa. Code §102.11(a)(1).

RESPONSE:

a. The temporary stone surfacing has been revised and labeled on sheet 1 of 2 of the E&S plan set. The temporary equipment pads have been relocated to be outside of the water bodies. See sheet 1 of 2 of the E&S plan set.

11. CS-CSA-HDD-CO-SUS RIVER
    a. Please identify the basis for the assertion that this site is classified as nonagricultural. It appears to have history of recent farming. If it is agricultural in nature, the area should be treated as agricultural land with respect to topsoil segregation and replacement. 25 Pa. Code §102.4(b)(5)(ii).

RESPONSE:

a. The revised plans and narrative clarify that the Site's existing use is agricultural. See sheet 1 of 2 of the E&S plan set and Appendix E.8 of the E&S Narrative.

12. The discharge from the diversion swale should outlet to a level spreader instead of a rock apron since there is not an existing watercourse at the end of the discharge location. 25 Pa. code §102.11(a)(1).

RESPONSE: All Diversion Swales and Filter Sock Diversions along the pipeline right-of-way have been updated to outlet to a level spreader, unless they are directly discharging to an existing watercourse; in which case, a rock apron is proposed. Within CS-CSA-HDD-CO-SUS RIVER the rock outfall has been revised to a level spreader, sheet 1 of 2 of the E&S plan set and Appendix E.8 of E&S Narrative.

Erosion and Sediment Control and Layout Plans Drawings — Access Roads-South

13. AR-CO-095.1.1.3
    a. Please provide construction details for the infiltration berm and retentive grading. 25 Pa. Code §102.11(a)(1).
    b. Please provide spot elevations and/or final contours that show final grades in the bottom of the infiltration area and the infiltration berm. 25 Pa. Code §102.4(b)(5)(ix).

RESPONSE: AR-CO-095.1.1.3 has been removed from the project and replaced with AR-CO-097.1.1 in a new location at milepost M-0143 MP 3.8 due to a pipeline reroute.

14. AR-CO-096.1
    c. The plans call for a RCE with a wash rack. More information is needed as to the treatment of the water discharged from the wash rack. The RCE detail requires the discharge to be directed to a sediment basin or trap but neither are shown on the plans. Please revise the plans accordingly. 25 Pa. Code §102.4(b)(5)(ix).

RESPONSE: AR-CO-096.1 has been removed from the project. However, to address this comment for access roads with a wash rack, 18" compost filter sock has been added to the road-specific E&SC plans down slope of all construction entrances with wash racks.

15. AR-CO-096.2
    d. The plans show an access road with a steep grade change at the edge of Creek Road. Please confirm that the road design is functional for its intended purpose given this concern. 25 Pa. Code §102.4(b)(5)(ix).

RESPONSE: The existing grade is approximately 15% and is traversable by the anticipated construction vehicles at a slow speed. However, the RCE has been moved down the hill to the flat area so that entrance and exit to the access road is over typical gravel rather than the larger RCE rock. The smaller rock will provide better traction for the construction vehicles.

Soil Erosion and Sediment Control Plan Drawings — Compressor Station 610

16. Channels and culverts

a. Previous comment 5e: Provide calculations showing that the concentrated discharges from the culverts feeding onto the infiltration berm areas in the post construction condition will not erode the newly placed soil amendments in the infiltration area. 25 Pa. Code §102.4(b)(5)(viii).

The discharge from the rock energy dissipaters are intended to reduce discharges to non-erosive velocities acceptable for well vegetative areas. The areas below the outlets will be disturbed and not immediately stabilized after construction. Show that these bare soils can withstand the discharge from the pipes or provide temporary linings until the vegetation can become established.

RESPONSE: Additional temporary erosion control blanket has been proposed within the basins to protect the newly placed engineered soil during stabilization.

17. Sediment Basin
    b. Original Comment 6.a: Provide calculations showing the 4:1 flow length has been met for the inflow from culvert #2. 25 Pa. Code §102.4(b)(5)(viii).

The calculations used to determine the width of the basin do not appear to use the correct surface area for elevation 958.25 when compared to E&S worksheet #14. In addition, the calculated width does agree with worksheet #13. Please verify the required width and associated flow length to meet the 4:1 flow length requirement and revise the baffle if necessary.

RESPONSE: The revised application includes updated flow length to width ratio calculations to account for the revised basin geometry. Please refer to Appendix A.4 Worksheet #14.

LANCASTER COUNTY

Erosion and Sediment Control Plan Narrative — Proposed Central Penn South

1. Original Comments 10: How is the plan addressing 25 Pa. Code §102.4(a)(4)(ii) during site restoration for those areas within the pipeline ROW that will be returned to agricultural plowing and tilling activities. 25 Pa. Code§§102.4(a)(4)(ii) and 102.8(n).

   The revised E&SC Narrative Section 1.17 did not explain how Transcontinental will ensure that restoration activity on agricultural land that is within 100 feet of a river or stream will enable the agricultural operation to comply with this requirement. Provide a separate heading in Attachment 6 of the ECP Narrative to address this item.

   RESPONSE: Section 1.17, Site Restoration, of the Erosion and Sediment Control Plan Narrative has been updated to explain how Transco will ensure that restoration activity on agricultural land within 100' of a river or stream will enable the agricultural operation to comply with the Code. Also, agricultural notes have been added to Sheet 2 of 3 of the Best Management Practices and Quantities Plan set. Additionally, Attachment 6 of the ECP Narrative now provides a separate heading to address this item.

Soil Erosion and Sediment Control Plan / Site Restoration Plan Drawings — Proposed 42" Central Penn South

2. The plan drawings indicate an area of disturbance at hydrostatic test water withdrawal areas LAI 63 (0.95 acres) and LA-164 (0.52 acres). Clearly identify on the plan drawings these areas of disturbance and provide adequate E&S BMPS. 25 Pa. Code §§102.4(b)(5)(vi) and 102.4(b)(5)(ix).

   The revised hydrostatic test water withdrawal areas LA-163 and LA-164 contain a limit of disturbance line (LOD) without any proposed E&S Best Management Practices. If no earth disturbance is proposed remove the LOD. If earth disturbance is proposed, provide necessary E&S BMPs.

   RESPONSE: The revised application no longer includes the LOD line. As no disturbance is proposed, the line has been redefined as the Limit of Workspace. See sheet 1 of 2 of the E&S plan sets.

LUZERNE COUNTY

Erosion and Sediment Control Plan Narrative — Proposed Central Penn North

1. Original Comment #1: Provide calculations that show proposed structural level spreaders reduce the discharge velocity in the receiving flow path to a non-erosive level. You may use the guidance in Item 15 on Page 161 and Appendix G of E&S Manual. Estimating cover type is not acceptable. 25 Pa. Code §102.4(b)(5)(viii).

   It appears that the calculations have not been provided in the resubmission for the proposed structural level spreaders to reduce the discharge velocities in the receiving flow path to ensure that there will not be any erosion downstream of the level spreaders. Please revise the plans to address this comment.

   RESPONSE: The previously proposed level spreaders have been replaced with a temporary level spreader designed in accordance with Appendix G of the Manual. In general, drainage areas to these structures are 5-acres or less except for large drainage draws or where required to reduce wetland impacts. Velocities at the discharge of the level spreaders are near zero since the stormwater will be discharged through the distribution box, perforated pipe, and minimum 4-inches of stone surrounding the perforated pipe. Once the discharge exits the orifices in the perforated pipe and trickles through the surrounding stone, it loses all its velocity and transforms into sheet flow. The discharge will be to a vegetated area, and will ultimately follow the same drainage path as before the installation of the clean water diversions. Refer to the Clean Water Crossing (Temporary Level Spreader) detail, CWC, and Temporary Clean Water Diversion Summary Table on the Quantity, Crossing and Acidic Soil Tables in the Best Management Practices and Quantities Plan set in the Best Management Practices and Quantities Plan Set.

2. Original Comment #2: Drainage areas to earthen level spreaders is limited to 1 acre or less. Please revise. (Appendix G of E&S Manual). 25 Pa. Code §102.11(a)(l).

   Your response states that an alternate detail has been submitted to the Department for review, however the details still show an earthen level spreader being used. Please revise the plans accordingly.

   RESPONSE: Proposed Diversion Swales and Filter Sock Diversions within the pipeline right-of-way will now discharge to temporary level spreaders along the pipeline right-of-way as discussed in the response above. Details for the temporary level spreaders can be found on the Quantity, Crossing and Acidic Soil Tables in the Best Management Practices and Quantities Plan set. Additionally, a write up is provided in Section 1.6, BMP Description Narrative, of the Erosion and Sediment Control Plan Narrative.

3. Original Comment #4: Provide calculations to show the anticipated outlet velocity for each proposed outfall. 25 Pa. Code §102.4(b)(5)(viii).

   It does not appear that the calculations have been provided in response to the Department's original comment for each proposed outfall to show the anticipated outlet velocity. Please revise the plans accordingly.

   RESPONSE: The previously proposed level spreaders have been replaced with a temporary level spreader designed in accordance with Appendix G of the Manual. In general drainage

areas to these structures are 5-acres or less except for large drainage draws or where required to reduce wetland impacts. Velocities at the discharge of the level spreaders are near zero since the stormwater will be discharged through the distribution box, perforated pipe, and minimum 4-inches of stone surrounding the perforated pipe. Once the discharge exits the orifices in the perforated pipe and trickles through the surrounding stone, it loses all its velocity and transforms into sheet flow. The discharge will be to a vegetated area, and will ultimately follow the same drainage path as before the installation of the clean water diversions.

In locations where Diversion Swales or Filter Sock Diversions discharge to existing waterbodies, riprap aprons are provided. Figure 21, Riprap Apron Design, Table 6.6, Riprap Gradation, Filter Blanket Requirements, Maximum Velocities, and Standard E&S Worksheet #20, Riprap Apron Outlet Protection, of the E&S Manual were used to adequately size the riprap aprons. Refer to Appendix C of the Erosion and Sediment Control Plan Narrative for calculations.

<u>Erosion and Sediment Control Plan Narrative — North Diamond Regulator Station</u>

4. Original Comment #1: Since earth disturbance is proposed within or along Waters of the Commonwealth and/or within the 100-year floodway, in addition to 2 discharges to the stream, the Conservation District requests that a photocopy(s) of any and all required Department and/or Army Corp of Engineers permits (or) photocopies of all completed permit applications be submitted with the revised plans. 25 Pa. Code §102.11(a)(l).

   This comment has not been addressed.

   RESPONSE: The revised application no longer includes permanent impacts or discharges within the 100-year floodway. A copy of the Luzerne County Chapter 105 permit application has been provided with this revised application. Supporting documentation from the Department / Army Corp of Engineers permit application have been included in the Erosion and Sedimentation Control and Post Construction Stormwater Management Narratives.

<u>Soil Erosion and Sediment Control Plan / Site Restoration Plan Drawings — Proposed 30" Central Penn North</u>

5. Original Comment #2: Please provide proposed contours for all proposed earthmoving (including diversion swales, flume channel crossings and filter sock diversions) that meet the standards in Item 3 on Page 2 and on Page 398 in the E&S Manual. 25 Pa. Code §102.11(a)(1).

   It does not appear that the contours for all of the proposed earthmoving have met the standards in Item 3 on Page 2 and on Page 398 of the E&S Manual. Please provide contours for the proposed diversion swales. Please revise the plans accordingly.

   RESPONSE: Vegetated Channel Grading detail, VCH, can be found on the Best Management Practices and Quantities Plan set. This detail outlines how each channel is to be installed based on a range of slopes across the right-of-way. Proposed contours are provided on the detail for purposes of demonstrating a typical channel installation. This detail was discussed at a meeting with PADEP, and was determined to be sufficient.

6. Original Comment #11: The plan drawings (not just the E&S narrative) should include a complete schedule of installation and removal of erosion control BMPs as they relate to the various phases of earthmoving activities. 25 Pa. Code §102.11(a)(1).

The requested sequence has not been provided on the pipeline E&S plans.

RESPONSE: The sequence of construction, including a complete schedule of installation and removal of erosion control BMPs as they relate to the various phases of earthmoving activities, is provided on the Best Management Practices and Quantities Plan set.

7. The Plains Township contractor yard sequence calls for the removal of compost filter sock, which is not shown on the plan map(s). Please make all necessary corrections (see Chapter 2 in the E&SPC Manual). 25 Pa. Code §102.4(b)(5)(vi).

   RESPONSE: The revised application clarifies proposed compost filter sock locations. See sheet 1 of 3 of the plan set for the compost filter sock locations.

8. At the Plains Township contractor yard, it appears that a stabilized construction entrance is needed at South Main Street. See pages 13 through 17 in the E&SPC Manual for guidance regarding stabilized construction entrances. Please revise the plans accordingly. 25 Pa. Code §102.4(b)(5)(vi).

   RESPONSE: The revised application includes a rock construction entrance at the requested location. See sheet 1 of 3 of the plan set for RCE location.

9. The E&S plan for the Plains Township contractor yard does not designate which areas are gravel and which areas are grass, in order to protect grass areas from disturbance, as per plan. Please revise the plans accordingly. 25 Pa. Code §102.4(b)(5)(vi).

   RESPONSE: The revised application includes updated survey mapping of vegetated areas and additional notations that clarify which areas are to be protected during use. See sheet 1 of 3 of the plan set.

10. The E&S plan for the Plains Township contractor site states that the contractor is to utilize existing gravel area, however a recent site visit shows portions of the site recently disturbed and gravel is not present. Please revise the plans accordingly. 25 Pa. Code §102.4(b)(5)(vi).

    RESPONSE: Per discussions with the Conservation District, the Applicant is proposing to use the Site as-is. While some maintenance of the existing gravel may be required during construction, no new impervious area or disturbance is proposed. However, the revised application provides additional perimeter compost filter sock to treat runoff from any areas disturbed during Site use or disturbed by the landowner prior to conveyance oft the Site to the Applicant. See sheet 1 of 3 of the plan set.

11. Erosion control blanket locations associated with the pipe line have not been identified/labeled on the plan drawing. Please revise the plans accordingly. 25 Pa. Code §102.4(b)(5)(vi).

    RESPONSE: The locations of erosion control blanket associated with the pipeline are now shaded on the Average % Slope Band on the plan drawings.

12. The location of the rock construction entrances associated with the pipe line have not been identified/labeled on the plan drawing. Please revise the plans accordingly. 25 Pa. Code §102.4(b)(5)(vi).

RESPONSE: Stabilized construction entrances are now shown in the Plan View on the Soil Erosion & Sediment Control Plans / Site Restoration Plans at each road crossing.

Erosion and Sediment Control and Layout Plans Drawings Access Roads

13. Original Comment #14: Please specify what erosion controls are to be installed within step 9. 25 Pa. Code §102.11(a)(1).

    Specific erosion controls have not been provided as requested by the Department's prior comment.

    RESPONSE: The Construction Sequences for all roads have been revised to include the specific E&SC BMPs to be installed during each step of the Construction Sequence.

14. Original Comment #18: The sequence should specify what temporary erosion controls are to be removed. 25 Pa. Code §102.11(a)(l).

    Specific erosion controls have not been provided as requested by the Department's prior comment.

    RESPONSE: The Construction Sequences for all roads have been revised to include the specific E&SC BMPs to be removed during each step of the Construction Sequence.

15. The construction sequence for proposed access road on sheet 1683 3 AR LU 019 does not address cleaning sediment from existing road side channel, stabilizing and removing the rock filter. Please revise the plans to account for maintenance and removal of the identified BMPs. 25 Pa. Code §§102.4(b)(5)(vii) and 102.4(b)(5)(x).

    RESPONSE: Step #19, "Remove the accumulated sediment from the existing roadside swale. Seed and stabilize areas where soil is exposed due to sediment removal." has been added to the Construction Sequence for AR-LU-019. The ABACT rock filter has been added in the multiple steps that reference the road-specific E&SC BMPs.

Soil Erosion and Sediment Control Plan Drawings — North Diamond Regulator Station

16. Plan sheet 5 of 13 shows a conflict between proposed vegetated swale 1B and UNT to Huntsville Creek. Explain how this conflict will be resolved without compromising the integrity of the stream. 25 Pa. Code §102.11(a)(1).

    RESPONSE: The revised application no longer proposes swales within the waterbody or 100-year floodway. Please refer to sheet 5 of 13 of the E&S plan set.

NORTHUMBERLAND COUNTY

Erosion and Sediment Control Plan Narrative — Proposed Central Penn South

1. Original comment # 39: Place Rock Construction entrances at all access points to existing roadways. 25 Pa. Code §102.4(b)(5)(vi).

   The revised Application submittal will identify rock construction entrances via the E&S BMP Band on the plan views of the E&S Alignment Sheets at each roadway crossing.

   RESPONSE: Stabilized construction entrances are now shown in the Plan View on the Soil Erosion & Sediment Control Plans / Site Restoration Plans at each road crossing.

2. The Summary of New Mainline Valves, Tie-in Assemblies & Design Specifications Table 1.2.44 lists CS-MLV-IO at Mile Post 0372 00 in Ralpho Township, Northumberland County. Mile Post 0372 0.0 is shown on the Pipeline E&S Plan 4 of 9 at Station 0+00 9+94 south of SR 061 in Coal Township, Northumberland County, CSMLV-IO is shown on E&S Plan 7 of 9 at Mile Post 0167 0.0 in Ralpho Township, Northumberland County. Please check the township, milepost and stationing of CSMLV-IO and revise the plans accordingly. 25 Pa. Code §102.4(b)(5)(ix).

   RESPONSE: Table 1.2.4-4 has been revised to show the milepost for CS-MLV-10 to be M-0167 MP 0.0. This milepost matches the milepost shown on the Pipeline E&S plan.

3. The Contractor Staging Areas Table 1.2.4-6 lists CS-CSA-N0.4-001 at Mile Post 0240 0.20. This Staging Area is not identified on the Pipe Line E&S Plan 3 of 9. It is shown on AR No. 77 E&S Plan 1 of 4. Please identify CS-CSA-No. 4-001 on the Pipe Line Plans. 25 Pa. Code §102.4(b)(5)(ix).

   RESPONSE: CS-CSA-NO-4-001 is now labelled on sheet 3 of 9 of the Northumberland Pipeline E&S Plan.

4. Sheets 1-15 of 15 contain a note that states: "CIVIL SURVEY NOT YET COMPLETED FOR THIS ACCESS ROAD." Please revise plan drawings to accurately show access roads and all associated proposed BMPs. 25 Pa. Code §102.4(b)(5)(ix).

   RESPONSE: Civil survey has been completed for AR-NO-076.1. The proposed E&SC BMPs are shown on the road-specific E&SC Plan. The note that states "CIVIL SURVEY NOT YET COMPLETED FOR THIS ACCESS ROAD." has been removed.

5. Sheets 1-4 of 4 contain a note that states: "CIVIL SURVEY NOT YET COMPLETED FOR THIS ACCESS ROAD. " Please revise plan drawings to accurately show access roads and all associated proposed BMPs. 25 Pa. Code §102.4(b)(5)(ix).

   RESPONSE: Civil survey has been completed for AR-NO-081.1. The proposed E&SC BMPs are shown on the road-specific E&SC Plan. The note that states "CIVIL SURVEY NOT YET COMPLETED FOR THIS ACCESS ROAD." has been removed.

SCHUYLKILL COUNTY

Erosion and Sediment Control Plan Narrative — Proposed Central Penn South

1. Original Comment #2: Outlet Protection: Please provide the information requested by Standard E&S Worksheet #20 for all proposed rip rap aprons in the narrative and on the applicable details. 25 Pa. Code §102.11(a)(l).

   Outlet protection (rip rap apron) is proposed for swale diversions that discharge to a waterbody. Standard Worksheet #20 should be provided for these locations. Please revise the plans accordingly.

   RESPONSE: Worksheet #20 is now provided for swale diversions that discharge to waterbodies. Refer to Appendix C of the Erosion and Sediment Control Plan Narrative.

Erosion and Sediment Control Plan and Post Construction Stormwater Management/Site Restoration Plan Narrative — Temporary and Permanent Access Roads

2. Original Comment #1: Provide calculations for the proposed earthen level spreaders to demonstrate that the structure will reduce the discharge velocity in the receiving flow path to a non-erosive level. You may use the guidance in Item 15 on Page 161 and Appendix G of E&S Manual. 25 Pa. Code §102.11(a)(1).

   Level spreaders have been removed, and have been replaced with Filter Sock Diversion Channels with riprap apron outlet protection, which appear to discharge to non-surface waters. The plan map(s) show (specify outfall, basin, or trap) discharging to an area that is not identified as a surface water. If this is a non -surface water discharge, provide a discharge analysis that meets the standards of (Item 4 on page 2, Item 15 on page 161) of the E&SPC Manual.

   RESPONSE: "Adequacy of Off-Site Discharge" analyses have been added to the road-specific narratives for the following access roads with filter sock diversions: AR-LU-020, AR-WY-025, AR-WY-040.2, AR-LA-013.1, AR-LA-020, AR-LE-056, and AR-SC-068. The analyses describe the flow path and conditions downhill of the riprap aprons at the end of each filter sock diversion to the convergence point. The convergence point is the location where construction impacts to drainage areas end and existing drainage patterns are no longer influenced by the temporary diversion of stormwater around the access road. There are no anticipated downhill impacts due to installing the temporary filter sock diversions during construction of the pipeline.

3. Original Comment #2: A spot check of swale calculations revealed that calculations provided for the proposed Water Quality Swale at TAR # AR-SC-063 in Worksheet #21 are not consistent with provided 10-year storm routing calculations for the swale for capacity and drainage area. Please review all swale calculations and make necessary corrections. 25 Pa. Code §102.11(a)(1).

   The drainage area has been corrected on Worksheet 21 for the # AR-SC-063 Diversion Swale; however, it appears that the "Q" for the 10- year storm event has not been corrected on Worksheet #21, to correspond with the routing calculations. Please re-check and revise.

RESPONSE: The flow for the vegetated channel for infiltration #2 (formerly called "Diversion Channel" has been revised on Worksheet #11 to match the 10-year, 24-hour peak flow rate shown in the HydroCAD model report.

4. Original Comment #3: Please specify how the temporary access roads will be restored after construction has been completed. 25 Pa. Code §102.4(b)(5)(vii).

   While Restoration procedures have been added to the narrative, please also specify on the Site Restoration Plan Drawings how any areas called out to be "restored to pre-construction conditions" or affected by access road earth disturbance will be addressed.

   RESPONSE: Site restoration notes have been added to the access road Site Restoration and PCSM plans describing the restoration process.

Soil Erosion and Sediment Control Plan / Site Restoration Plan Drawings — Proposed 42" Central Penn South

5. Original Comment #2: General erosion & sediment control note #30: Please delete this note. Per Standard Plan Note #9, the local conservation district must be notified when unforeseen circumstances occur on the project site. Any changes to the E&S plan need to be proposed to the SCD and red-lined by both the conservation district and the permit holder. 25 Pa. Code §102.11(a)(1).

   The Schuylkill Conservation District (SCD) original comment refers to general erosion control #30 in the Best Management Practices and Quantities Plan Set. If this note remains on the plan, the note should reference coordination with the SCD before red line changes are made to the erosion and sediment control plans. Please revise the plans accordingly.

   RESPONSE: General Note #30 in the Best Management Practices and Quantities Plan set has been deleted.

6. Original Comment #7.c: The maximum effective height of a 24" sock is documented as 19" per the manufacturer's recommendations; therefore, the total depth of a filter sock diversion should also be 19".25 Pa. Code §102.11(a)(l).

   It does not appear this comment has been addressed. The total depth (D) for swale calculations related to filter sock diversions remains at 2 feet (for example, FSD 66.01). Please revise the plans accordingly.

   RESPONSE: The total depth, D, for filter sock diversion calculations has been updated to 19" or 1.6'. Please refer to Appendix B of the Erosion and Sediment Control Plan Narrative. Additionally, the Filter Sock Diversion detail, FD, has been updated accordingly on sheet 3 of 11 of the Best Management Practices and Quantities Plan set.

7. Original Comment #7.f: The Filter Sock Diversion (FD) detail should indicate that the erosion control matting should be extended to the height of the freeboard (total depth). 25 Pa. Code §102.11(a)(l).

   Additional notes were provided; however, the detail was not revised to depict the erosion control matting extended to the total depth (D). Please revise the plans accordingly.

RESPONSE: The Filter Sock Diversion, FD, detail has been updated to identify that the erosion control matting should be extended to the total depth, D. Refer to sheet 3 of 11 of the Best Management Practices and Quantities Plan set.

8. Original Comment #9.k.i.: Please integrate the BMP Installation and Removal Notes into the Pipeline BMP Installation Sequence. 25 Pa. Code §102.11(a)(l).

   To clarify, the original comment applied to the "Best Management Practices and Quantities Plan Set." The BMP Installation and Removal Notes and the Pipeline BMP Installation Sequence were integrated; however, BMP Installation and Removal Note #12 (which was revised during the December 2015 revisions) does not appear to be included in the revised plans. Please revise the plans accordingly.

   RESPONSE: BMP Installation and Removal Note #12 from the December 2015 submission has been added to the BMP Installation Sequence in the Best Management Practices and Quantities Plan set as Note #31 on sheet 2 of 3.

9. Original Comment #9.m: A consistent definition of permanent stabilization should be used throughout the E&S plan notes. [25 Pa. Code §102.11(a)(l)]

   This comment has been addressed in several locations; however, the definition of permanent stabilization has not been addressed in the Contractor Staging Yard Sequences located in the erosion and sediment control plan narrative (Appendix E, Erosion and Sediment Control Plan Narrative) and drawings (Soil Erosion & Sediment Control Plan/Site Restoration Plan Atlantic Sunrise Project Proposed 42" Central Penn Line South"). Please revise the plans accordingly.

   RESPONSE: The revised application, and contractor staging areas' sequence of construction includes updated definitions of stabilization, as recommended by the Department.

<u>Erosion and Sediment Control and Layout Plans Drawings — Access Roads</u>

10. Original Comment #1: The construction sequence for access roads indicates that topsoil will be stripped from access road areas and stockpiled within the right-of-way; however, no topsoil stockpiles were found on the E&S plan drawings. 25 Pa. Code §102.11(a)(l).

    Topsoil stockpiles have been added to some, but not all proposed access locations. Construction sequences for some access roads specify that topsoil should be removed and stockpiled on site, but no stockpile location was found. Please review and revise plan drawings accordingly.

    RESPONSE: Designated stockpile areas have been added to all access roads. The construction sequences have been revised to address the stockpiles.

11. Original Comment #2: Broad based dips could not be found on the proposed access roads in the plan drawings. Please specify what BMPs will be used to manage erosive runoff on access roads during construction and after construction. 25 Pa. Code §102.11(a)(l).

    The Atlantic Sunrise response letter indicates that Water Deflectors (aka Conveyor Belt Diversions) "are utilized to manage erosive runoff'; however, water deflectors were only included on one temporary access road (AR-SC-060.5), while no BMPs to control runoff on other dirt or gravel roads were proposed. Please review proposed access roads and include

BMPs that will be used to manage erosive runoff on access roads during construction and after construction.

RESPONSE: Broad based dips and water deflectors have been added to the access roads per the requirements of Table 3.2, "Minimum Spacing of Broad Based Dips, Open Top Culverts and Deflectors", in the PADEP E&SC Manual.

12. Original Comment #3: Timber mats are shown at low points in access roads to covey/maintain drainage of clean upslope water on a road with construction traffic. Please specify what BMPs will be used to keep upslope water clean or provide an alternate means of conveying clean water through a construction area. 25 Pa. Code §102.11(a)(l).

    "Rock Matting" has been proposed in these areas, rather than the Timber Mats, but no construction detail or specifications could be found for the Rock Matting in the E&S Plan Drawings. Please revise the plans to accurately describe the BMPs that are being proposed for these areas.

    RESPONSE: The "Rock Matting Detail" has been added to the "Typical Sections and Notes" at the beginning of the Access Road E&SC Plans for the counties in which rock matting is roposed.

13. Original Comment #4: Specify on the plan drawings which BMPs will be used on existing gravel roads, many of which have steep slopes and will be heavily used by large construction traffic, to minimize the potential for accelerated erosion and sedimentation during the project. The E&S plans indicated that many of these existing roads will receive no improvements to handle the construction traffic. 25 Pa. Code §102.11(a)(l).

    The response letter indicates that AASHTO #57 stone will be added to existing roads in areas where existing gravel is bare or thinning. Please provide or update a road profile construction detail to accurately depict this stabilization BMP.

    RESPONSE: The "Supplemental Stone for Existing Gravel Road" detail has been added to the "Typical Sections and Notes" at the beginning of the Access Road E&SC Plans for all counties.

<u>Erosion and Sediment Control Plan Narrative — Proposed Central Penn South</u>

14. Provide calculations that show the rip rap aprons proposed for swale diversions that discharge to a waterbody reduce the discharge velocity in the receiving waterbody to a non-erosive level. You may use the guidance in Item 15 on page 161 of E&SPC Manual. If the rip rap aprons are located within the floodway, a Chapter 105 permit will be required for those discharges. 25 Pa. Code §102.4(b)(5)(viii).

    RESPONSE: Riprap aprons have been removed for swale diversions that discharge to waterbodies within Schuylkill County. All swale diversions will discharge to temporary pipes that cross the right-of-way and enter temporary level spreaders. Velocities at the discharge of the level spreaders are near zero since the stormwater will be discharged through the distribution box, perforated pipe, and minimum 4-inches of stone surrounding the perforated pipe. Once the discharge exits the orifices in the perforated pipe and trickles through the surrounding stone, it loses all its velocity and transforms into sheet flow. The discharge will be

to a vegetated area, and will ultimately follow the same drainage path as before the installation of the clean water diversions.

Soil Erosion and Sediment Control Plan / Site Restoration Plan Drawings — Proposed 42" Central Penn South

15. Compost Filter Sock: Worksheet #1 - Worksheet #1 has not been completed on the plan detail sheets in two locations. Please revise the plans accordingly. 25 Pa. Code §102.4(b)(5)(viii).

    RESPONSE: Worksheet #1 has been updated on the plan detail sheets and in Appendix A of the Erosion and Sediment Control Plan Narrative.

16. CS-HTA-SC-Deep Creek:
    a. The narrative (appendix E.7) indicates the project will discharge to Roaring Creek. Please revise the plans to address this inconsistency. 25 Pa. Code §102.4(b)(5)(v).
    b. Outlet protection (rip rap apron) is proposed for the swale diversion for the tank area. Standard Worksheet #20 should be provided for these locations. 25 Pa. Code §102.4(b)(5)(viii). Provide a construction detail for the rip rap apron proposed for the swale diversion. Standard Construction Detail Numbers 9-1, 9-2, and 9-3 are recommended for this purpose. 25 Pa. Code §102.4(b)(5)(ix).
    c. The plan drawings show a diversion swale discharging to an area that is not identified as a surface water. If this is a non-surface water discharge, provide a discharge analysis that meets the standards of (Item 4 on page 2, Item 15 on page 161) of the E&SPC Manual. 25 Pa. Code §102.4(b)(5)(viii).
    d. The PCSM/Site Restoration Plan for the tank area provides a "limit of gravel and geotextile fabric removal" area. This same area should be identified on the Erosion & Sediment Control Plan because it appears the entire area will not be graveled. 25 Pa. Code §102.4(b)(5)(ix). Overall pipeline drawing sheet #14 of 18 should reference the additional set of plans provided in the set for CS-HTA-SC-Deep Creek. Please revise the plans accordingly. 25 Pa. Code §102.4(b)(5)(xi).

    RESPONSE:

    a. Appendix E.7 has been revised to indicate that the Site discharges to Deep Creek.

    b. The diversion swale has been removed from this Site. See sheet 1 of 3 of the E&S plan set and Appendix E.7 of the narrative.

    c. The diversion swale has been removed from this Site; however, compost filter sock sediment trap 2 has been added. See sheet 1 of 3 of the E&S plan set and Appendix E.7 of the narrative.

    d. The requested reference to the additional set of plans provided for CS-HTS-SC-Deep Creek has been added to sheet 14 of 18 of the E&S plans.

Best Management Practices and Quantities Plan Set —Proposed 42" Central Penn South

17. Provide a construction detail for the rip rap aprons proposed for the swale diversions that will discharge to a waterbody (Item 9, page 5 of the E&SPC Manual). §102.11(a)(l) Standard

Construction Detail Numbers 9-1, 9-2, and 9-3 are recommended for this purpose. 25 Pa. Code §102.4(b)(5)(ix).

RESPONSE: The Rip Rap Apron Detail, RAO, on sheet 5 of 11 of the Best Management Practices and Quantities Plan set has been updated to include the terminal width and initial width as requested. A column has been added to the Temporary Clean Water Diversion Summary Table on the Quantity, Crossing and Acidic Soil Tables on the Best Management Practices and Quantities Plan set to identify the placement depth, Rt.

18. Sheet #2 of 3: Pipeline BMP Installation Sequence: It does not appear that the installation sequence references topsoil replacement during the restoration of the pipeline trench (step #25). Please revise the plans accordingly. 25 Pa. Code §102.4(b)(5)(ix).

    RESPONSE: The pipeline BMP Installation Sequence (Note #25) has been updated to address topsoil replacement during the restoration of the pipeline trench. Refer to sheet 2 of 3 of the Best Management Practices and Quantities Plan set.

19. Sheet #2 of 3: Under Temporary and Permanent Stabilization: Note #1 references that the installation of an erosion control blanket or application of straw mulch are considered to be permanent stabilization. Erosion control blankets and straw mulch are not an acceptable permanent stabilization BMP without additional means to establish permanent vegetative stabilization. Please revise the plans to describe the permanent stabilization BMPs being proposed. 25 Pa. Code §102.11(a)(l).

    RESPONSE: Note #1 has been revised to eliminate this reference.

20. Temporary Diversion Summary Table (sheet #2 of 3): Please re-evaluate all of the discharge types on the temporary diversion summary table. For example, diversions 67.03 and 67.04 calls for a 167 level spreader; however, it appears a drainage channel may exist. It also appears that several "flume/offsite" discharges may need a level spreader. Please revise the plans as needed. 25 Pa. Code §102.4(b)(5)(ix).

    RESPONSE: All Diversion Swales and Filter Sock Diversions along the pipeline right-of-way have been updated to outlet to a level spreader, unless they are directly discharging to an existing watercourse; in which case, a rock apron is proposed.

<u>Erosion and Sediment Control and Layout Plans Drawings — Access Roads</u>

21. Provide an adequate sediment removal/treatment BMP at the outlets of each of the proposed Water Deflectors, waterbars, broad based dips, etc., and include a construction detail for the proposed sediment removal facility/treatment area. 25 Pa. Code §§102.4(b)(5)(ix) and 102.11(a)(1).

    RESPONSE: Filter sock and sumps (similar to the waterbar end treatment) have been added to all broad-based dip and water deflector locations as requested. The 20,000 square feet used for the rational method calculation previously completed for the waterbar end treatment exceeds all broad-based dip and water deflector drainage areas. Therefore, no additional calculations were performed to size the compost filter sock and sump.

22. Multiple Access Road E&S plan drawing sheets contain a note which states, "Civil survey not completed for a portion of this road." Please update all affected plans. 25 Pa. Code §102.4(b)(5)(ix).

RESPONSE: The "Civil survey not completed for a portion of this road" notes have been removed and the road designs have been revised to incorporate the newly available civil survey information.

23. Erosion and sediment control BMPs have not been proposed between the gravel driveway apron for access road AR-SC-060.5 and the stream in the immediate proximity to the access road. Please add an appropriate erosion and sediment control BMP in this location and revise the plans accordingly. 25 Pa. Code §102.11(a)(1).

RESPONSE: Compost filter sock has been added between the gravel driveway apron for access road AR-SC-060.5 and the stream in the immediate proximity to the access road.

24. Erosion and sediment control BMPs have not been proposed downslope of the proposed Valve Site near the proposed permanent access road AR-SC-063. Please add an appropriate erosion and sediment control BMP in this location and revise the plans accordingly. 25 Pa. Code §102.11(a)(1).

RESPONSE: Compost filter sock was added to the access road plan at the bottom of the proposed grading area.

25. Only a description of Mainline Valve site pad thickness was found in the plan drawings, i.e. 6" of AASHTO stone, on top of 6" of AASHTO #57 stone. Please provide a construction detail, cross-sections, specifications, etc. of these proposed MLV stone pads. 25 Pa. Code §102.11(a)(1).

RESPONSE: Cross sectional details of the MLV Site have been added to the Soil Erosion Control Plan and PCSM Plan for the 11 access roads that provide access to the MLV Sites.

WYOMING COUNTY

Soil Erosion and Sediment Control Plan / Site Restoration Plan Drawings — Proposed 30" Central Penn North

1. Original Comment #3. The plan maps show compost socks crossing contours on all plan maps. Sediment barriers should be installed at existing level grade (E&S Manual, Pages 61 and 75). §102.11 (a)(l) Please make all necessary corrections. It is recommended that Figure 4.1 be placed upon a detail sheet for clarity. 25 Pa. Code §102.11(a)(l).

   The applicant has revised most of the locations in response to the Department's comment; however, there are sections of the plan maps that have not been revised in response to this comment.

   RESPONSE: Compost filter sock for the access roads in Wyoming County were reviewed to identify locations where the compost filter sock cross contours. The compost filter sock for AR-WY-026 and AR-WY-032 were revised to locate compost filter sock on contour. Please note that AR-WY-021 has been removed from the project.

2. Original Comment #5. The provided table for the silt sock sizes does not match the drawings. The table needs to be updated to reflect the sizes on the plans. 25 Pa. Code §102.11(a)(l).

   Appendix O, stockpile silt socks are listed as 12", 13", and 14". This does not match the plans that call for all 12" sock on plan drawing WY-032. Please revise the plans to address this inconsistency.

   RESPONSE: The compost filter sock sizes have been revised to be 12".

Erosion and Sediment Control and Layout Plans Drawings — Access Roads

3. Original Comment #1. The plan maps show compost socks located in series on the access road plan maps, WY-30, 31, 36, and 36.1. Compost socks cannot be placed in series for erosion and sediment pollution control. Please relocate the socks to avoid being in series. 25 Pa. Code §102.11(a)(l).

   The applicant has revised the plans in response to the Department's comment; however, there are sections of the plan maps that still need to be revised to address this comment, for example WY-032.

   RESPONSE: Compost filter sock for AR-WY-032 was revised to remove compost filter sock in series.

Soil Erosion and Sediment Control Plan Drawings — Compressor Station 605

4. How will accelerated erosion and sedimentation be prevented from entering the infiltration basin 2 at the compressor station when ditches 9, 10, 11, and 13 are proposed to directly discharging to the basin during construction? Please identify appropriate BMPs on the plans to address this concern. 25 Pa. Code §102.11(a)(l).

   RESPONSE: Additional temporary erosion control blanket has been proposed within the basins to protect the newly placed engineered soil during stabilization. See sheet 7 of 14 of the E&S plan set for the location of the temporary erosion control blanket.

5. On worksheet 1 of the compost filter socks, sock 9 above the infiltration berms is not around any stockpile as it is listed on the plan sheets. Please revise the plans to address this inconsistency. 25 Pa. Code §102.11(a)(l).

   RESPONSE: The revised application no longer includes the specified compost filter sock. Reference to the removed compost filter sock has been removed from the documents. See sheets 6 and 13 of 14 of the E&S plan set and Appendix A.4 of the E&S report.

6. Compost filter sock 11 is now located below the access road and not around any identified stockpile as per the changes made in the resubmission. The changes that were made to the Soil Erosion and Sediment Control Plan Drawings now conflict with the Soil Erosion and Sediment Control Narrative. Please revise the plans or the narrative accordingly. 25 Pa. Code §102.11(a)(l).

   RESPONSE: The revised application no longer includes the specified compost filter sock. Reference to the removed compost filter sock has been removed from the documents. See sheets 7, 8 and 13 of 14 of the E&S plan set and Appendix A.4 of the E&S report.

7. Appendix G of the Erosion and Sediment Control Plans/Site Restoration Plan Narrative around stockpile 2 as a 1" sock. This size sock does not exist. Please revise the plans to accurately describe the BMP that is being proposed for this location. 25 Pa. Code §102.11(a)(l).

   RESPONSE: The revised application clarifies that the minimum compost filter sock size proposed is 12".

8. The channels and diversion swales that call for reinforcement are not differentiated from those channels and diversion swales that will not need any type of reinforcement. Please revise the plans to show the reinforced channels and diversion swales. 25 Pa. Code §102.11(a)(l).

   RESPONSE: The revised application provides distinct mapping symbols for reinforced and unreinforced channels. See sheets 7, 11 and 14 of 14 of the E&S plan set.

Soil Erosion and Sediment Control Plan Drawings — Springville Meter Station

9. The RCE and associated wash rack that is proposed on the plan drawings for the Springville Meter Station is not described as discharging to an erosion and sediment control BMP. 25 Pa. Code §102.11(a)(l).

   RESPONSE: The revised application provides additional compost filter sock to treat water discharged from the RCE wash rack. See sheet 4 of 9 of the E&S plans.

Erosion and Sediment Control and Layout Plans Drawings — Access Roads and PCSM Plans for Permanent Access Roads Erosion and Sediment Control

10. The front page of the PCSM Plans for Permanent Access Roads Erosion and Sediment Control and the Layout Plans for Access Roads appears to incorrectly represent the Wyoming County shares a border with Columbia County. The representation is located in the top right corner of the referenced plan drawings. Please revise the identified plans to address this inaccuracy. 25 Pa. Code §102.11(a)(l).

    RESPONSE: The adjacent County callout has been revised to be "Sullivan County".

PROPOSED ALTERNATIVE E&S BMPS

Flume (Clean Water) Crossing:

1. Original Comment Ia.: Please indicate in the construction sequence whether this BMP will be temporary or permanent. 25 Pa. Code §102.4(c).

   The sequence does state that the Clean Water Crossings will be removed. It also states that the proposed berms will remain and function as permanent water bars. Please explain why these berms are needed as water bars.

   RESPONSE: The Clean Water Crossing Detail previously provided has been revised to a temporary pipe crossing with a temporary level spreader. Therefore, the subject berms are no longer proposed.

2. Original Comment 1.h.: Provide peak flow calculations for flume channel(s). See Chapter 5 in E&S Manual for guidance on runoff calculations. Standard E&S Worksheets #9 and #10 are recommended for the Rational Equation. An acceptable alternative is the use of the standard multipliers at the top of Standard E&S Worksheet #11. 25 Pa. Code §102.4(c).

   It does not appear this comment has been addressed. Please provide the requested calculations.

   RESPONSE: Peak flow calculations for all diversion swales and filter sock diversions are determined using the standard multipliers at the top of Standard E&S Worksheet #11. Refer to Appendix B of the Erosion and Sediment Control Plan Narrative.

3. The Clean Water Crossing Detail is confusing. Please revise the plans in a manner to provide one detail that includes the proposed level spreader and another detail that does not include the proposed level spreader. 25 Pa. Code §102.4(c).

   RESPONSE: The Clean Water Crossing Detail previously provided has been revised to a temporary pipe crossing with a temporary level spreader and a new detail has been provided. Refer to the updated Clean Water Crossing detail, CWC, on the Quantity, Crossing and Acidic Soil Tables on the Best Management Practices and Quantities Plan set.

4. Consider dividing up "Table 2: Temporary Clean Water Diversion Summary" into three separate tables: one where flume dischargers to a surface water; another where flume discharges to a level spreader; and another where flume discharges to an existing drainage channel. 25 Pa. Code §102.4(c).

   RESPONSE: All Diversion Swales and Filter Sock Diversions along the pipeline right-of-way have been updated to outlet to either a temporary pipe with level spreader or an existing watercourse. Therefore, Table 2: Temporary Clean Water Diversion Summary, has been simplified to identify one of the two discharge types. A separate table has been provided for the Temporary Perforated Pipe Level Spreader Calculations.

5. The level spreader shows a berm with a height of 12" with R-4 riprap protection. R-4 riprap requires an 18" placement thickness which is greater than the height of the berm. Please revise the proposed BMP design to meet appropriate standards. 25 Pa. Code §102.4(c).

RESPONSE: The Clean Water Crossing Detail previously provided has been revised to a temporary pipe crossing with a temporary level spreader, and a new detail has been provided. Refer to the updated Clean Water Crossing detail, CWC, on the Quantity, Crossing and Acidic Soil Tables on the Best Management Practices and Quantities Plan set.

6. Many of the proposed flumes will be collecting and discharging more runoff than the precondition due to installation of diversion swales. Please provide calculations to show that the existing drainage channels are adequate. 25 Pa. Code §102.4(c).

   RESPONSE: The previously proposed level spreaders have been replaced with a temporary level spreader designed in accordance with Appendix G of the Manual. In general, drainage areas to these structures are 5-acres or less except for large drainage draws or where required to reduce wetland impacts. Velocities at the discharge of the level spreaders are near zero since the stormwater will be discharged through the distribution box, perforated pipe, and minimum 4-inches of stone surrounding the perforated pipe. Once the discharge exits the orifices in the perforated pipe and trickles through the surrounding stone, it loses all its velocity and transforms into sheet flow. The discharge will be to a vegetated area, and will ultimately follow the same drainage path as before the installation of the clean water diversions.

7. Waterbar end treatment (non HQ/EV Watersheds): This BMP requires a sediment storage area similar to the Waterbar end treatment in HQ/EV Watersheds. The storage area should not be part of the filter area and should be below the filter area. Please revise the plans accordingly. 25 Pa. Code §102.4(c).

   RESPONSE: The previously proposed alternate detail has been removed from the plan set and all waterbars will discharge to the PADEP approved detail, WB.2, on sheet 10 of 11 of Best Management Practices and Quantities Plan set.

8. Waterbar end treatment (HQ/EV Watersheds and non HQ/EV Watersheds): Please provide flow calculations based on the proposed R-O-W width. 25 Pa. Code §102.4(c).

   RESPONSE: The previously proposed alternate detail has been removed from the plan set and all waterbars will discharge to the PADEP approved detail, WB.2, on sheet 10 of 11 of Best Management Practices and Quantities Plan set.

POST CONSTRUCTION STORMWATER MANAGEMENT PLANS

GENERAL PCSM TECHNICAL DEFICIENCIES RELATED TO ALL DOCUMENTS

1. Original Comment #10: The restoration plans do not show what portions of the right-of-way, alternate temporary work space and temporary work space will be restored. Please provide accordingly. 25 Pa. Code §102.8(f)(9).

   The Erosion and Sediment Control Plan/Site Restoration Plans do not adequately indicate which portions of the right-of-way will be restored. The Erosion and Sediment Control Plan/Site Restoration Plans also do not show which access roads will be restored back to the existing conditions. Please clearly identify the areas of restoration within the right-of-way and access roads in the plans.

   RESPONSE: The plans now identify which access roads are permanent; all other roads will be restored back to the existing conditions.

2. In Section 1.17 of the Erosion and Sediment Control Plan Narrative for the Proposed Central Penn Line South there is a statement that, "At no time will subsoil be allowed to intermingle with subsoil." It appears that this is a typographical error and should state that, "topsoil be allowed to intermingle with subsoil." Please revise the narrative accordingly. 25 Pa. Code §102.8(f)(8).

   RESPONSE: Section 1.17 of the Erosion and Sediment Control Plan Narrative has been updated to remove the typographical error and state that, "At no time will topsoil be allowed to intermingle with subsoil."

3. Section 4.1 of the Erosion and Sediment Control Plan Narrative Riparian Forest Buffer Replanting, states that Transco will replant to provide a riparian forest buffer within the regulated floodplain or 50-foot wide floodway if no FEMA mapped floodplain is present, whichever is greater. However, in Special Protection waters, the forest riparian forest buffer should be an average minimum of 150 feet. Please revise the plans accordingly. 25 Pa. Code §102.14(b)(2).

   RESPONSE: Section 1.17 of the Erosion and Sediment Control Plan Narrative has been updated to ensure that the riparian forest buffer within Special Protection waters is an average minimum of 150 feet.

4. It appears that the temporary and permanent stabilization timeframes within Section 1.13, 1.16 and 1.17 of the Erosion and Sediment Control Plan Narrative for the Proposed Central Penn Line are inconsistent. The temporary stabilization should be completed within 4 calendar days. Also, Transcontinental states, "Transco will complete upland final grading, topsoil replacement, installation of permanent E&S measures within 21 days after backfilling the trench in all areas…" The final stabilization should be completed within 10 calendar days after backfilling of the trench has been completed in all areas. Please revise the plans accordingly. 25 Pa. Code §102.22.

   RESPONSE: The temporary and permanent stabilization timeframes within Sections 1.13, 1.16, and 1.17 of the Erosion and Sediment Control Plan Narrative have been updated to identify 4 calendar days for temporary stabilization after trench backfilling. Transco will complete upland final grading, topsoil replacement, and installation of permanent E&S

measures within 20 days after backfilling the trench in all areas except residential areas, which will be completed within 10 days.

5. Please identify the type of stream bank stabilization proposed on the Erosion and Sediment Control Plan/Site Restoration Plans. 25 Pa. Code §102.4(b)(5)(ix).

   RESPONSE: The stream bank stabilization with reinforcement blanket (SBR) has been added to the ES&C plans

6. It appears that Worksheets #10 has been applied for water quality and will not be able to be used due to having multiple PCSM BMPs within one another (infiltration basins, infiltration berms, soils amendment and restoration, minimize soil compaction, minimize total disturbed area, etc.). Water quality credit cannot be given to multiple PCSM BMPs that are within one another. Please revise Worksheet accordingly. Should Worksheet not apply, Worksheets #12 and #13 must be completed to show water quality has been achieved. 25 Pa. Code §102.8(f)(9).

   RESPONSE: The revised application clarifies that the intent of the PCSM designs is not to take credit for overlapping PCSM BMPs. In situations where Worksheet #10 does not apply, Worksheets #12 and #13 are completed. Please refer to PCSM plans and narratives for permanent facilities for additional information. For permanent facilities refer to PCSM plans for an analysis of areas controlled by BMPs.

7. Worksheet #10 which addresses water quality compliance does not meet the manual's criteria of "at least 90% of the disturbed area is conveyed or mitigated by a PCSM BMP." If the criteria for Worksheet #10 cannot be met, please fill out Worksheets and as applicable for the Permanent Access Roads. 25 Pa. Code §102.8(f)(9).

   RESPONSE: The criteria for Worksheet #10 is not met for the permanent access roads. Therefore, Worksheet #10 has been revised to check the "No" boxes and Worksheets #12 and #13 have been added to the road-specific narratives for the MLV access roads.

8. A land preservation agreement, deed restriction or other enforceable instrument that ensures perpetual protection of the proposed BMP protect sensitive and special value features (25% slopes) has not been provided for the PCSM BMP. Please revise the application accordingly. 25 Pa. Code §102.8(m).

   RESPONSE: Where proposed as a PCSM BMP, sensitive and special value features are included within a proposed defined deed restricted area. Please refer to PCSM plans and narratives for permanent facilities for additional information.

9. Please provide specific coordinates (metes and bounds) that are to be used within the enforceable instrument for the proposed PCSM BMP protect sensitive and special value features. 25 Pa. Code §102.8(f)(9).

   RESPONSE: Where deed restrictions are proposed, metes and bounds are included in the PCSM Plans. Please refer to PCSM plans and narratives for permanent facilities for additional information.

10. It does not appear that the proposed PCSM BMP Minimize Total Disturbed Area is applicable for this site. It does not appear that any of the stormwater from the disturbed area will be flowing

through this PCSM BMP to provide water quality benefits. Please revise accordingly. 25 Pa. Code §102.11(a).

RESPONSE: The criteria for Worksheet #10, PCSM BMP Minimize Total Disturbed Area, is not met for the permanent access roads. Therefore, Worksheet #10 has been revised to check the "No" boxes and Worksheets #12 and #13 have been added to the road-specific narratives for the MLV access roads.

11. If the PCSM BMP Minimized Total Disturbed Area applies to any areas, as per the PCSM Manual Checklist in Chapter 8, please provide the following notations on the PCSM Plans for Compressor Station 605. 25 Pa. Code §102.8(f)(9).
    a. The protected area should not be subject to grading or movement of existing soils.
    b. Existing native vegetation is not to be removed within the protected area.
    c. Additional planting of native vegetation is allowed in the protected area.
    d. The protected area must be delineated in the field and protected prior to any construction activities taking place.
    e. Should the protected area become compacted and/or disturbed, soils amendment and restoration may be required.

RESPONSE: Where utilized as a PCSM BMP, the requested notations have been added to the PCSM plans. Please refer to PCSM plans and narratives for permanent facilities for additional information. The PCSM BMP Minimized Total Disturbed Area does not apply to permanent access roads.

12. Please provide the following notations on the PCSM Plans for the proposed PCSM BMP Protect Sensitive and Special Value Features 25 Pa. Code §102.8(f)(9).
    a. The protected areas shall be clearly delineated in the field prior to any construction activities taking place.
    b. The protected area should not be disturbed during construction except for temporary impacts for mitigation or restoration efforts.

RESPONSE: Where utilized as a PCSM BMP, the requested notations have been added to the PCSM plans. Please refer to PCSM plans and narratives for permanent facilities for additional information. The PCSM BMP Protect Sensitive and Special Value Features does not apply to permanent access roads.

13. The proposed PCSM BMP Minimize Soil Compaction in Disturbed Areas does not appear to be applicable for the proposed project site. The intent of this BMP is to minimize and protect soil compaction within the disturbed areas on the project site. The areas of minimum compaction that are being relied upon are outside of any construction activities. 25 Pa. Code §102.11(a).

RESPONSE: The revised application now proposes use of the PCSM BMP only in areas outside of proposed construction activities. The PCSM BMP Minimize Soil Compaction in Disturbed Areas does not apply to permanent access roads.

14. If Minimize Soil Compaction in Disturbed Areas applies to any areas, as per the PCSM Manual Checklist in Chapter 8, please provide the following notations on the PCSM Plans 25 Pa. Code §102.8(f)(9).
    a. The proposed protected area shall not be stripped of existing topsoil.

b. The protected areas are not to be subject to excess equipment movement, storage or stockpile of equipment or material of any kind.
c. The protected areas shall be delineated in the field and protected prior to any construction activities taking place.
d. Soil amendment, additional topsoil and light grading is permitted in the protected area.
e. Should the areas of minimum soil compaction become disturbed and/or compacted, they may require soils amendments and restoration.

RESPONSE: Where utilized as a PCSM BMP, the requested notations have been added to the PCSM plans. Please refer to PCSM plans and narratives for permanent facilities for additional information. The PCSM BMP Minimize Soil Compaction in Disturbed Areas does not apply to permanent access roads.

15. Where the PCSM BMP Soils Amendment and Restoration has been proposed it appears that it is located in areas that will have infiltration BMPs (basins, berms, etc.). The infiltration rate for these BMPs do not appear to be limiting the capability of the proposed BMP to effectively infiltrate the increased stormwater volume from construction of the site. Please provide information regarding the use of soil amendments and restoration where infiltration rates are acceptable. 25 Pa. Code §102.11(a).

RESPONSE: The revised application no longer proposes amended soils within infiltration BMPs. The revised application now specifies engineered soils to clarify the intent of the designs.

16. If the PCSM BMP Soil Amendments and Restoration applies to any areas, as per the PCSM Manual Checklist in Chapter 8, please provide the following notes on the PCSM Plans 25 Pa. Code §102.8(f)(9).
    a. Soils amendment and restoration should not take place within the drip line of trees or tree lines.
    b. Soils amendment and restoration should not take place over utility installations within 30 inches of the surface.
    c. Soils amendment and restoration should not take place where trenching or drainage lines are installed.
    d. Soils amendment and restoration should not take place where compaction of the soils by design is required.
    e. The methodology should be performed when the soil conditions are dry.

RESPONSE: Where utilized as a PCSM BMP, the requested notations have been added to the PCSM plans. Please refer to PCSM plans and narratives for permanent facilities for additional information. The PCSM BMP Soil Amendments and Restoration does not apply to permanent access roads.

17. Please provide the methodology for the soil amendment and restoration (ripping, subsoiling, tilling, scarification, etc.). 25 Pa. Code §102.11(a).

RESPONSE: The revised application now specifies methodology for soil amendment and restoration.

18. Please provide the minimum soil compost ratio of 2:1 as per the BMP manual or the manufacturers recommendation on the Plans. 25 Pa. Code §102.11(a)(2).

RESPONSE: The revised application clarifies that the ratio of soil to compost is 2:1 for soil amendments.

COLUMBIA COUNTY

Post Construction Stormwater Management Site Restoration Plans Narrative — Compressor Station 610

1. The narrative for this site states that there will be 6.01 acres of impervious area. This does not appear to be consistent with the total impervious areas assumed in the post development condition in stormwater worksheets #4. In addition, the combined post development drainage area for all stormwater worksheets #4 does not appear to agree with the predevelopment total. Please clarify. 25 Pa. Code §102.8(f)(8).

   RESPONSE: Drainage areas in the revised application have been checked for consistency. Additional notations have been added to Worksheet #4 to clarify that the change in areas from pre-development to post-development is a result of changes to Site grades. See Section 1.0, Appendix 8.5, Worksheet #4 for updates.

2. Stormwater worksheet #5 for Green Creek incorrectly states that no earth disturbance will occur in this watershed. It appears that over 6 acres of this drainage area will be disturbed. While post development runoff from much of the developed area in this watershed will be diverted to the Deer Lick Run Drainage area, some of the regraded area will not be. This should be clarified in the worksheets. 25 Pa. Code §102.8(f)(8).

   RESPONSE: The revised application clarifies that no new impervious areas are proposed within the Green Creek Watershed. Revised Water Quality worksheets are provided in the application.

3. It appears that the loading ratio for the infiltration berm #1 and basin will not meet the maximum impervious loading ratio of 5:1, or the maximum loading ratio of 8:1. Please provide calculations showing that these loading ratios have been met, justification for exceeding these limits, or an alternate design for the post construction volume mitigation of the site. 25 Pa. Code §102.8(f)(6).

   RESPONSE: The revised application no longer includes infiltration berms as a PCSM BMP. The revised design provides for the 5:1 impervious loading ratio. Consistent with clarifications provided by the Department, justification for exceeding the 8:1 loading ratio has been provided in the PCSM Narrative, Appendix A.4.

4. The BMPs credited on Worksheets #3 and #10 must be clearly shown on the drawings and included in the operations and maintenance program permanent stormwater facilities section. 25 Pa. Code §102.8(f)(10).

   RESPONSE: The revised application includes consistent plans, operation and maintenance programs and water quality worksheets. See sheets 3 of 7 for location of BMPs and sheets 4 of 7 and 6 of 7 for O&M program requirements.

5. More information is needed to justify the BMPs listed on worksheet #10. 25 Pa. Code §102.8(f)(8).
   a. Show that the BMPs listed adequately treat a minimum of 90% of the runoff from the site.
   b. Provide Operation and maintenance procedures for each of the BMPs (street sweeping) on the PCSM plans.

RESPONSE:

a. Per clarification from PADEP, 90% of runoff from developed portions of the Site (i.e. not restored to pre-development grades and vegetative cover), is proposed to be treated by PCSM BMPs. Please refer to the PCSM Plan set for clarification, sheet 3 of 7.

b. Operation and Maintenance procedures for the proposed BMPs are included in the revised application. See sheet 6 of 7 of the PCSM plan set for O&M requirements.

Post Construction Stormwater Management Site Restoration Plans Narrative — West Diamond Regulator Station

6. Original Comment #1: The soil testing indicates that the limiting zone is above the bottom of the basin and therefore does not provide the required 2-foot buffer. 25 Pa. Code §102.8(f)(2).

   Renaming the area as a rain garden instated of infiltration basin does not change the need to isolate the area from the limiting zone. The plans do not show how the water will be prevented from mixing with the high water table. Please revise the plans accordingly to address this concern.

   RESPONSE: The revised application includes a vertical curtain drain and underdrain system to protect the basin from temporary inundation in periods of seasonal high groundwater. The vertical curtain drain protects the stability of basin cut slopes by providing a conduit away from the exposed slope. The curtain drain and underdrain work together to prevent temporary inundation during periods of seasonal high groundwater and will allow the rain garden to function as a stormwater runoff quality and rate management BMP. Per discussions with PADEP, this Site no longer proposes infiltration BMPs. In lieu of meeting the runoff volume reduction requirements, the pre-development and post-development 2-year, 24-hour storm runoff volume was analyzed and water quality Worksheets #12 and #13 were completed to demonstrate to the Department that the alternative will maintain and protect existing water quality and existing and designated uses by maintaining the preconstruction Site hydrologic impact. These analyses demonstrate that the water quality (including increase of stormwater volume) shall be achieved in all surface waters at least 99% of the time. This analysis can be found in Appendix A.5 of the PCSM report.

7. Original Comment #2: Soil testing indicated high water level in the tests near the storm basin expansion. How will water be handled if present? 25 Pa. Code §102.8(f)(2).

   The plans call for 8 foot plus cuts next to test pit #4 where a high water table was identified at 18 inches from the surface. This would imply that there is a potential for water flowing into the pond area from the cut slopes at an elevation well above the level of the pond bottom. Providing a subsurface drain below the pond bottom to remove excess water does not address the impact to the function of the rain garden or the stability of the cut slopes of the pond. Please provide an alternate design that addresses this concern.

   RESPONSE: The revised application includes a vertical curtain drain and underdrain system to protect the basin from temporary inundation in periods of seasonal high groundwater. The vertical curtain drain protects the stability of basin cut slopes by providing a conduit to convey water away from the exposed slope and out through the underdrain system. The curtain drain and underdrain work together to prevent temporary inundation during periods of seasonal

high groundwater and will allow the rain garden to function as a stormwater runoff quality and rate management BMP. Per discussions with PADEP, this Site no longer proposes infiltration BMPs. Refer to the PCSM Plans and Appendix A.5 of the PCSM Report for additional information.

8. Original Comment #3: Infiltration testing was not conducted at the depth in the soil profile equal to the deepest cuts for the pond bottom. 25 Pa. Code §102.8(f)(2).

   It is unclear if or how infiltration will occur on this site. The response to the original comment states that no infiltration will occur but stormwater worksheet #5 takes credit for permanent removal of the water volume. See next comment.

   RESPONSE: Per discussions with PADEP, this Site no longer proposes infiltration BMPs. Worksheet #5 has been modified to eliminate any reference to infiltration volume credits. See section A.5 of the PCSM report.

9. Original Comment Provide supporting calculations for worksheet #5 infiltration volumes. 25 Pa. Code §102.8(f)(8).

   Please provide details showing how the basin will permanently remove any stored runoff within three days as required to assure storage capacity for the next rain event and show that this volume is permanently removed from the runoff stream and not simply discharged through the underdrain system after the storm. Be advised that credit for volume reduction cannot be taken for any area with a drainage system under the filter medium. Also, the channel with rock check dams along the access road exceeds the maximum 6 percent slope to be used for stormwater volume or quality BMP's as stated in the original technical review letter in Item #12 of the section entitled General PCSM Technical Deficiencies related to all documents. Please provide revised volume reduction calculations supporting the credits taken on worksheet #5.

   RESPONSE: Per discussions with PADEP, this Site no longer proposes infiltration BMPs. Worksheet #5 has been modified to eliminate any reference to infiltration volume credits. See section A.5 of the PCSM report.

10. Credit may not be taken for multiple BMPs that are located within one another. Each BMP have certain criteria and even though these design criteria may overlap, actual BMPs may not overlap. Each BMP must remain separate. The BMPs may be used in series or parallel of one another, but credit may not be taken for BMPs that appear to be within one another. The application indicates that the infiltration basin will be utilized as the volume control BMP; however, on Worksheet #10, soil amendment is proposed within the infiltration basin. It is unacceptable to take credit for BMPs within one another, or to use one PCSM BMP for water quality and another PCSM BMP for volume Control that are located within one another. Please review all BMPs and revise all documentation as applicable in accordance with this comment. 25 Pa. Code §§102.8(f)(8) and 102.8(f)(9).

    RESPONSE: The revised application includes updated plans, narratives and calculations to clarify that no PCSM BMPs utilized to meet the water quality design requirements overlap. Sheet 3 of 8 of the PCSM plan set depicts the location of the BMPs. See Appendix A.5 of the PCSM report for analysis of the BMPs.

11. More information is needed to show how sediment and floating debris will be prevented from sealing the underground discharge pipe for the basin and/or how it will be cleaned if blocked. 25 Pa. Code §102.11(a)(2).

    RESPONSE: Storm events are conveyed through the inlet grate of the outlet structure. The inlet grate will act as the trash rack for this outflow device and prevent floatable debris from sealing the discharge pipe. Additionally, an emergency spillway is provided in the event of an unexpected clogging of the discharge pipe. See the O&M notes on sheet 5 of 8 for additional rain garden maintenance requirements.

Post Construction Stormwater Management Plan Narrative — Access Roads Columbia Township Permanent Access Road AR-CO-095.1.1.3 (New Site)

12. As noted in the response document, soils testing is still needed for this site and the plans must be revised accordingly. 25 Pa. Code §102.8(f)(2).

    RESPONSE: AR-CO-095.1.1.3 has been removed from the project and replaced with AR-CO-097.1.1. Infiltration testing for AR-CO-097.1.1 has been completed. The test pit locations are shown on the Soil Erosion Control Plan and PCSM Plan. The Field Observation Report is included in the road-specific narrative.

13. Provide supporting calculations for the infiltration credit taken for each of the BMPs shown on stormwater worksheet #5 including the flow generated to each BMP based on worksheet #4 procedures. Be advised that the credit for each BMP cannot exceed the flow to the BMP. 25 Pa. Code §102.8(f)(8).

    RESPONSE: The volumes listed for the "Check Dams in Vegetated Channels" and "Storage in the MLV Pad" in Worksheet #5 have been revised to be the 2-year, 24-hour detention volume listed in the HydroCAD report in the road-specific narrative for each MLV access road.

14. Please explain why the drainage area to the BMPs for peak rate flows (DA to pond 109P) is not consistent with the drainage areas for volume calculations on worksheet #4.25 Pa. Code §102.8(f)(8).

    RESPONSE: The drainage area shown on Worksheet #4 has been revised to be the limit of grading (actual disturbance area) to match the area used for Worksheet #12. However, the drainage area (area that runoff flows to each vegetated channel, infiltration berm, or MLV Site) is used for the HydroCAD model and Worksheet #13. The limit of grading has been added to the drainage area maps to clarify that different areas are used on Worksheet #4 and the HydroCAD model.

<u>Post Construction Stormwater Management Plan Drawings - Atlantic Sunrise Project - Permanent Access Roads Montour Township</u>

15. Stormwater worksheet implies infiltration will occur in the MLV pad. Runoff calculations appear to assume 12 inches of storage in the stone with a weir type of discharge. Construction details for the weir and the dike surrounding the stone to contain the water to one foot of depth should be identified on the plans. 25 Pa. Code §102.8(f)(9).

    RESPONSE: Cross sectional details of the MLV Site have been added to the Soil Erosion Control Plan and PCSM Plan for the 11 access roads that provide access to the MLV Sites.

LANCASTER COUNTY

The following comment is in respect to the overall PCSM Plans in Lancaster County.

1. Upon further evaluation by the Department and in accordance with the 25 Pa. Code §§102.4(b)(5)(v) and 102.8(f)(5), the location of all surface waters of this Commonwealth, including wetlands, which may receive runoff within or from the project site and their classification under Chapter 93 needs to be provided through plan drawings and a narrative description.

   RESPONSE: Per our meeting with PADEP, this comment is in regards to providing 100% survey for the project. It has been confirmed that all survey has been completed with the project LOD.

The following comments are in respect to the Soil Erosion and Sediment Control Plan/Restoration Plan.

2. It appears that there are several Limit of Disturbance lines that are on the Soil Erosion and Sediment Control Plan/Site Restoration Plans. For example, on Phase 2 CPLS Contractor Staging Area 3 Martic Township, there is an LOD line as well as a limit of disturbance line that is associated with the ESCGP line. Please show the limit of disturbance line that will accurately show where earth disturbance activities will be taking place. Please check all Soil Erosion and Sediment Control Plan/Site Restoration Plans to show consistency with respect to the limits of disturbance. 25 Pa. Code §102.8(f)(9).

   RESPONSE: Per discussions with the Department, by utilizing similar line types and updating the plan legend, the revised application clarifies that the project has an overall Limit of Disturbance and the secondary LOD line is solely to define the area of study for larger contractor staging areas and permanent facilities requiring Site specific plans and narratives.

3. The limit of disturbance line that is depicted for Powerhouse Drive does not include the full with of the roadway in some locations. Please revise accordingly. 25 Pa. Code §102.8(f)(9).

   RESPONSE: Powerhouse Drive is no longer included in the Project. This deficiency is no longer applicable.

The following comments are in respect to the Post Construction Stormwater Management Plans and Narrative for the River Road Regulator Station.

4. Credit may not be taken for multiple BMPs that are located within one another. Each BMP have certain criteria and even though these design criteria may overlap, that actual BMPs may not overlap. Each BMP must remain separate. The BMPs may be used in series or parallel of one another but credit may not be taken for BMPs that appear to be within one another. The application indicates that the infiltration basin will be utilized as the volume control BMP, however on Worksheet #10, soil amendments is proposed which is located within the infiltration basin. This is unacceptable to use BMPs within one another, then use one PCSM BMP for water

quality and another PCSM BMP for volume Control. Please review all BMPs and revise all documentation as applicable. 25 Pa. Code §§102.8(f)(8) and 102.8(f)(9).

RESPONSE: The revised application includes an updated PCSM Plan set and PCSM Narratives with supporting calculations (See Appendix A.5 of the PCSM Narrative) to clarify that no PCSM BMPs utilized to meet the water quality design requirements overlap. Additionally, the previously referenced soil amendments have been re-labeled as "Engineered Soils" within the infiltration basin to clarify that the intent of the design is to provide enhanced soils in the basin and not to claim that amended soils within the basin count as a separate BMP.

5. The PCSM Narrative for the River Road Regulator Station states on Page 1 1 that there is no known impairment or TMDL for Fishing Creek (HQ-CWF, MF); however, on Page 23 of the Narrative, it indicates that Fishing Creek is impaired for siltation but does not have a TMDL. Please revise accordingly. 25 Pa. Code §102.8(f)(5).

   RESPONSE: The revised application clarifies that the Site's watershed has known impairments, but is not siltation impaired and has no required TMDL. See Section 1.5 of the PCSM Narrative.

6. The proposed PCSM BMP Soils Amendment and Restoration appears to be in areas that will have an area that is proposed to be fill and a slope that is 3:1 or greater. Soil amendments should not be located in areas that are steep sloped. Please revise the plans accordingly. 25 Pa. Code §102.11(a)(2).

   RESPONSE: All Soil amendments have been removed from this proposed Site. Landscape restoration is proposed in the 3:1 slope areas. See sheet 3 of 6 of the PCSM plan set.

7. Please identify in the plans the proposed methodology for the soil amendment and restoration (ripping, subsoiling, tilling, scarification, etc.). 25 Pa. Code §102.8(f)(9).

   RESPONSE: All proposed soil amendments have been removed from the design. Engineered soils are proposed within the infiltration basins. The methodology for the installation of the engineered soils can be found on sheet 4 of 6 of the PCSM plan set.

8. Please provide the minimum soil compost ratio of 2:1 as per the BMP manual or the manufacturer's recommendation on the Plans. 25 Pa. Code §102.8(f)(9).

   RESPONSE: All proposed soil amendments have been removed from the design. The proposed minimum soil compost ratio of 2:1 for the Engineered soils can be found on sheet 4 of 6 of the PCSM plan set.

9. The proposed PCSM BMP Protect Sensitive and Special Value Features does not appear to be applicable for a water quality credit for the proposed project site. The intent of this BMP is to restrict development in these areas with stormwater functional values so that their functions are not lost. Stormwater from the project site must reasonably be flowing through these protected areas in order to justify water quality protection being provided for the project site. The proposed area as shown on the PCSM Plans for the River Road Regulator Station is a small triangle area that will not be effective in providing the required water quality benefits. Please revise the application accordingly. 25 Pa. Code §§102.8(f)(9) and 102.11(a)(2).

RESPONSE: Per discussions with the Department, this BMP is proposed for use on this Site because the wooded areas are proposed for protection to treat runoff from a developed portion of the Site, including portions of gravel pad and gravel access roads.

10. It does not appear that the proposed PCSM BMP Minimize Total Disturbed Area is applicable for this site. It appears that the proposed BMP is located within an existing drainage swale. Please revise the application accordingly. 25 Pa. Code §102.11(a)(2).

    RESPONSE: This BMP is no longer proposed for use on the Site.

11. If the proposed PCSM BMPs do not adequately show water quality for Worksheet #10, Worksheets #12 and #13 must be completed to show water quality compliance. 25 Pa. Code §102.8(f)(8).

    RESPONSE: The revised application demonstrates that Worksheet #10 has met with the proposed design.

12. It appears that the existing drainage area map in Appendix A is not correctly depicted. Please revise accordingly and provide a point of interest that will encompass the entire site as was done with the POI A in the Post Development Calculations. 25 Pa. Code §102.8(f)(9).

    RESPONSE: The Existing Drainage Area Map has been revised to be consistent with the post-development Drainage Area map.

13. It appears that the orifice is at the invert of the proposed Permanent Outlet Structure OS1. The detail does not identify the invert of the proposed structure. Please clarify the inverts of the orifice and the outlet structure. 25 Pa. Code §102.8(f)(9).

    RESPONSE: The detail for OS-1 has been modified in the revised application to clarify proposed invert elevations. See sheet 4 of 6.

14. The drawdown time that was calculated is not acceptable. The drawdown time was calculated by using an arbitrary 0.50 inches per hour as per the description that was provided in the River Road Regulator Station Infiltration Rate/Dewatering Time/Testing Methods. There was infiltration testing that was done at the site that provided an infiltration rate of 31.50 inches per hour after using an increased safety factor of 3. This is not acceptable as stated in Appendix C, Protocol 2, Site Conditions and Constraints, 1.C. This is to ensure that water quality is met and that the groundwater is not contaminated by any potential pollutants from stormwater runoff. Please use an acceptable infiltration rate applicable for the proposed soil amendment. Please revise the drawdown time calculations accordingly. 25 Pa. Code §102.8(f)(8).

    RESPONSE: As discussed with the Department, the proposed drawdown time is based on the required infiltration rate of the proposed engineered soils and the proposed impoundment depth. The revised application clarifies that the range of 0.5 in/hr. and 3.33 in/hr. rates is required to meet the maximum drawdown time and maximum infiltration rates recommended by the Department. See Appendix A.6 of the PCSM report for infiltration rate and dewatering time discussion and calculations.

<u>The following comments are in reference to the Post Construction Stormwater Management Plans and Narrative for Permanent Access Roads.</u>

15. The stormwater volume to be infiltrated by the infiltration bed is greater than the total stormwater volume that will be flowing to the infiltration bed. The hydrology calculations show that the stormwater volume that will be flowing into the infiltration bed will be less than what is on Worksheet #4. The infiltration bed cannot infiltrate more stormwater volume than is actually being conveyed to the basin. Please revise the application accordingly. 25 Pa. Code §102.8(f)(8).

    RESPONSE: The volumes listed for the "Check Dams in Vegetated Channels" and "Storage in the MLV Pad" in Worksheet #5 have been revised to be the 2-year, 24-hour detention volume listed in the HydroCAD report in the road-specific narrative for each MLV access road.

16. Please provide a site specific detail for each of the infiltration beds (MLV Pads). 25 Pa. Code §102.8(f)(9).

    RESPONSE: Cross sectional details of the MLV Site have been added to the Soil Erosion Control Plan and PCSM Plan for the 11 access roads that provide access to the MLV Sites.

17. It is not clearly stated how the subbase of the proposed infiltration bed (MLV Pad) will not be compacted during construction. Should the infiltration area of the infiltration bed (MLV Pad) become compacted, please provide details as to how the compacted area will be uncompacted/scarified to promote infiltration as proposed for the PCSM BMP. 25 Pa. Code §102.8(f)(8).

    RESPONSE: The Construction Sequences for the permanent access roads to the MLV Sites have been revised to address compaction during installation of the pipeline and installation of the access road and MLV Site.

18. It does not appear that the proposed PCSM BMP Minimize Total Disturbed Area is applicable for the Permanent Access Roads because the proposed BMP has not been provided on the PCSM Plans for Permanent Access Roads. Please revise application accordingly. 25 Pa. Code §102.11(a)(2).

    RESPONSE: The criteria for Worksheet #10, PCSM BMP Minimize Total Disturbed Area, is not met for the permanent access roads. Therefore, Worksheet #10 has been revised to check the "No" boxes and Worksheets #12 and #13 have been added to the road-specific narratives for the MLV access roads.

19. It appears that the proposed PCSM BMP Re-vegetate and Reforest Disturbed areas using native species is not applicable for the Permanent Access Roads. Full water quality credit, as per Worksheet #10, cannot be taken for disturbing native vegetation and then re-planting those areas again with native vegetation. It does not appear that there are locations for this access road that this PCSM BMP applies. Please revise the application accordingly. 25 Pa. Code §102.1(a)(2).

    RESPONSE: The criteria for Worksheet #10, PCSM BMP Re-Vegetate/Re-Forest Disturbed Areas, is not met for the permanent access roads. Therefore, Worksheet #10 has been revised to check the "No" boxes and Worksheets #12 and #13 have been added to the road-specific narratives for the MLV access roads.

LEBANON COUNTY

The following comment is in respect to the overall PCSM Plans in Lebanon County.

1. Upon further evaluation by the Department and in accordance with the 25 Pa. Code §§102.4(b)(5)(v) and 102.8(f)(5), the location of all surface waters of this Commonwealth, including wetlands, which may receive runoff within or from the project site and their classification under Chapter 93 needs to be provided through plan drawings and a narrative description.

   RESPONSE: Per our meeting with PADEP, this comment is in regards to providing 100% survey for the project. It has been confirmed that all survey has been completed with the project LOD.

The following comments are in respect to the Soil Erosion and Sediment Control Plan/Restoration Plan.

2. The Post Construction Stormwater Management Narrative for Proposed Central Penn Line South states that the proposed 42-inch pipeline will be approximately 15,391 linear feet (28.48 miles) in length, however the Narrative indicates a different length. Please revise the inconsistency with the proposed length of the pipeline. 25 Pa. Code §102.8(f)(8).

   RESPONSE: The length of proposed 42-inch pipeline has been updated to be consistent between the Post Construction Stormwater Management Narrative and the Erosion and Sediment Control Plan Narrative.

3. It appears that there is a proposed swale along the contractor staging area along Elizabethtown Road that will remain in the post construction conditions. The proposed swale does not have a channel number associated with it, nor does it show that the discharge location will be stable. Please provide all corresponding calculations with respect to the proposed swale. Should this swale be utilized as a PCSM BMP, please provide all information as per the BMP manual, Chapter 6, Vegetated Swales. 25 Pa. Code §§102.8(f)(8) and 102.8(f)(9).

   RESPONSE: The specified staging area and all associated improvements are temporary. The revised application clarifies that the Site will be restored to pre-development conditions as part of the project scope. See sheets 1 and 2 of 2 of the E&S plan set.

The following comments are in reference to the Post Construction Stormwater Management Plans and Narrative for Permanent Access Roads.

4. It appears that the proposed PCSM BMP, Re-vegetate and Reforest disturbed areas using native species, is not applicable for the Permanent Access Roads. Full water quality credit, as per Worksheet #10, cannot be taken for disturbing native vegetation and then re-planting those areas again with native vegetation. It does not appear that there are locations for this access road that this PCSM BMP applies. Please revise the application accordingly. 25 Pa. Code §102.11(a)(2).

   RESPONSE: The criteria for Worksheet #10, PCSM BMP Re-Vegetate/Re-Forest Disturbed Areas, is not met for the permanent access roads. Therefore, Worksheet #10 has been revised to check the "No" boxes and Worksheets #12 and #13 have been added to the road-specific narratives for the MLV access roads.

5. Please provide a site specific detail in the plans for each of the proposed infiltration beds (MLV Pads). 25 Pa. Code §102.8(f)(9).

   RESPONSE: Cross sectional details of the MLV Site have been added to the Soil Erosion Control Plan and PCSM Plan for the 11 access roads that provide access to the MLV Sites.

6. The calculations show that the proposed infiltration bed (MLV Pad) will have approximately 4 feet of storage depth to provide infiltration volume. However, the narrative states that the infiltration bed (MLV Pad) will have 6-inches of AASHTO and 24-inches of AASHTO #57 stone. Please revise accordingly. Please provide a site specific detail for each of the infiltration beds (MLV Pads). 25 Pa. Code §102.8(f)(8).

   RESPONSE: The detention depth for the MLV pad is summarized on Page 43 for LE-037.2 and Page 36 for LE-050.1.1 of the Post Development HydroCAD reports in the road-specific narratives. Both reports show that the MLV pads are 2.5 feet deep, with storage only accounted for in the lower 2 feet. (No storage is provided in the top 6" AASHTO #8 stone layer. All storage is within the lower 24" AASHTO #57 stone layer.) Cross sectional details of the MLV Site have been added to the Soil Erosion Control Plan and PCSM Plan for the two permanent access roads that provide access to the MLV Sites in Lebanon County.

7. It is not clearly stated how the subbase of the proposed infiltration bed (MLV Pad) will not be compacted during construction. Should the infiltration area of the infiltration bed (MLV Pad) become compacted, please provide details as to how the compacted area will be uncompacted/scarified to promote infiltration as proposed for the PCSM BMP. 25 Pa. Code §102.11(a)(2).

   RESPONSE: The Construction Sequences for the permanent access roads to the MLV Sites have been revised to address compaction during installation of the pipeline and installation of the access road and MLV Site.

LUZERNE COUNTY

The following comments are in reference to the Post Construction Stormwater Management Plans for Permanent Access Roads.

1. Original Comment #1c: Please provide the infiltration period (draw down time) for the proposed infiltration BMP. 25 Pa. Code §102.8(f)(8).

   The response to the Technical Deficiency Letter dated October 2016, Page 142, Comment 1c., indicates that the infiltration period has been provided. However, there are not any calculations in the Erosion and Sediment Control Plan and Post Construction Stormwater Management/Site Restoration Plan Narrative for the infiltration bed (MLV Pad). Please provide the infiltration period for the infiltration bed.

   RESPONSE: Infiltration information for the AR-LU-007.1 MLV Pad is provided at the beginning of the Infiltration Information Section in Appendix G.8.a in both the E&S and PCSM Narratives.

2. Please provide the PCSM Plans for access road AR-LU007.1. The proposed permanent access road has been provided on the Erosion and Sediment Control Plans for Access Roads, however, the grading plan, details, minimize total disturbed area, Re-vegetate/reforest disturbed areas, etc. have not been provided on the PCSM Plans for Access Roads. Please provide all applicable details with respect to the PCSM BMPs. 25 Pa. Code §102.8(f)(9).

   RESPONSE: The PCSM Plan for AR-LU-007.1 is separate from the E&SC plan. The PCSM Plan for AR-LU-007.1 is provided in the "Post Construction Stormwater Management Plans for Permanent Access Roads" for Luzerne County and the supporting calculations are provided in the "Post Construction Stormwater Management Plan Narrative" for Luzerne County. The grading plan and MLV Site cross sectional details are provided on the PCSM Plan. The minimized total disturbed area and re-vegetated/reforested disturbed areas are no longer applicable to the project.

3. Please provide the loading ratio for the proposed infiltration bed (MLV pad) of a maximum impervious loading ratio of 5:1 (impervious area to infiltration area) and a maximum loading ratio of 8:1 (total area to infiltration area). 25 Pa. Code §102.8(f)(8).

   RESPONSE: The loading ratio for the proposed infiltration bed (MLV pad) of a maximum impervious loading ratio of 5:1 (impervious area to infiltration area) and a maximum loading ratio of 8:1 (total area to infiltration area) are provided at the bottom of the Permanent Access Road Summary Sheet in Appendix G.1.g.

4. Please show on the PCSM Plans for Access Roads the location of infiltration for the proposed infiltration bed. 25 Pa. Code §102.8(f)(9).

   RESPONSE: The infiltration test pit locations are shown on the PCSM plans as circles with two quadrants filled in. The "Field Observation Report" is provided in the road-specific appendices of the PCSM narratives.

5. The PCSM BMP Minimize Total disturbed area has been checked on Worksheet for permanent access road AR-LU-007. Please show on the Post Construction Stormwater Management Plans for Access Roads the locations of the proposed PCSM BMP. 25 Pa. Code §102.8(f)(9).

   RESPONSE: The criteria for Worksheet #10, PCSM BMP Minimize Total Disturbed Area, is not met for the permanent access roads. Therefore, Worksheet #10 has been revised to check the "No" boxes and Worksheets #12 and #13 have been added to the road-specific narratives for the MLV access roads.

6. All protected areas with respect to the Minimize Total Disturbed Area PCSM BMP should be delineated and labeled on the PCSM. Please revise accordingly. 25 Pa. Code §102.8(f)(9).

   RESPONSE The criteria for Worksheet #10, PCSM BMP Minimize Total Disturbed Area, is not met for the permanent access roads. Therefore, Worksheet #10 has been revised to check the "No" boxes and Worksheets #12 and #13 have been added to the road-specific narratives for the MLV access roads.

7. The PCSM BMP, Re-vegetate/Re-forest Disturbed Areas using native species, has been provided on Worksheet #10 for permanent access road AR-LU-007. Please show on the PCSM Plans for Access Roads the locations of the proposed PCSM BMP. 25 Pa. Code §102.8(f)(9).

   RESPONSE: The criteria for Worksheet #10, PCSM BMP Re-Vegetate/Re-Forest Disturbed Areas, is not met for the permanent access roads. Therefore, Worksheet #10 has been revised to check the "No" boxes and Worksheets #12 and #13 have been added to the road-specific narratives for the MLV access roads.

<u>The following comments are in reference to Post Construction Stormwater Management Plans for the North Diamond Regulator Station.</u>

8. Original Comment #3b: Credit may not be taken for multiple BMPs that are located within one another. Each BMP have certain criteria and even though these design criteria may overlap, that actual BMPs may not overlap. Each BMP must remain separate. The BMPs may be used in series or parallel of one another but credit may not be taken for BMPs that appear to be within one another. Please review all BMPs and revise all documentation as applicable. 25 Pa. Code §102.11(a)(2).

   As per the response to Technical Deficiency dated October 2016, Page 144, Comment 3b., the response indicates that the submittal clarifies that physically overlapping BMPs may be proposed, but volume or water quality credits are not clamed for both of the overlapping BMPs. This seems to be the case with the minimum soil compaction, rain garden and soil amendment and restoration. The application indicates that the infiltration basin will be utilized as the volume control BMP, however for the water quality BMP, the use of soil amendments is proposed. This is unacceptable to use BMPs within one another, use one PCSM BMP for water quality and another PCSM BMP for volume control. Please revise accordingly.

   RESPONSE: The revised application includes updated plans, narratives and calculations to clarify that no PCSM BMPs utilized to meet the water quality design requirements overlap. See sheet 3 of 8 of the PCSM plan set.

9. There are two outfalls proposed that are located within the floodway of UNT to Huntsville Creek. Please be advised that these two outfalls will require a Chapter 105 Water Obstruction and Encroachment Permit to be constructed. 25 Pa. Code §102.5(g)(i).

   RESPONSE: The revised application clarifies that no permanent impacts are proposed within the waterbody or 100-year floodway for the specified waterbody.

10. It appears that Soils Amendments and Restoration has been proposed within the floodway/riparian buffer ofWW-T33-17001, UNT to Huntsville Creek. Please be advised that fill within the floodway of a creek will need a Chapter 105 Water Obstruction and Encroachment Permit. Also, credit cannot be given to a PCSM BMP while removing an existing BMP (riparian buffer). Please revise the application accordingly and/or submit a Chapter 105 Water Obstruction and Encroachment Application to include this encroachment to the floodway of UNT to Huntsville Creek. 25 Pa. Code §102.5(i).

    RESPONSE: The revised application clarifies that no permanent impacts are proposed within the waterbody or 100-year floodway for the specified waterbody. Soil amendments are proposed within the floodway however the existing grad will be maintained within the floodway. See sheet 3 of 8 of the PCSM plan set.

11. It does not appear that the modeling for the proposed rain garden has included all of the impervious areas that will be contributing to the drainage area of the rain garden. Please provide a drainage area map that depicts the drainage area to the rain garden. The provided map is not sufficiently detailed to show the exact drainage area. Should the acreage change as a result of addressing this comment, please revise the rain garden modeling accordingly. 25 Pa. Code §§102.8(f)(9) and 102.8(f)(9).

    RESPONSE: The revised application includes revised stormwater calculations to account for any Site areas that are expected to bypass the proposed rain garden. A revised drainage area map and associated calculations reflecting the actual area draining to the rain garden can be found in Appendix A.2 of the PCSM report.

12. The proposed PCSM BMP, Protect Sensitive and Special Value features, does not appear to be applicable for a water quality credit for the proposed project site. The intent of this BMP is to restrict development in these areas with stormwater functional values so that their functions are not lost. Stormwater from the project site must reasonably be flowing through these protected areas in order to justify water quality being protected for the project site. The proposed area as shown on the PCSM Plans for the North Diamond Regulation Station is a thin strip of area that will not be effective in providing the required water quality benefits. Please revise the design as depicted on the plans accordingly. 25 Pa. Code §102.11(a).

    RESPONSE: This BMP is no longer proposed for this Site.

13. The proposed construction will cause an increase in the stormwater volume from the preconstruction conditions to post construction conditions. Due to this increase, in accordance with 25 Pa. Code 102.8(g)(3)(iii) and 96.3(c), the applicant must demonstrate to the Department that the alternative will either be more protective than required under paragraph Section 102.8(g)(3) or will maintain and protect existing water quality and existing and designated uses by maintaining the preconstruction site hydrologic impact. This also includes the demonstration that the water quality (including increase of stormwater volume) shall be achieved in all surface

waters at least 99% of the time. Therefore, the stormwater volume increase should be shown to have less than 1 % increase of the volume of the stream at the discharge point to the stream. 25 Pa. Code §102.8(f)(8).

RESPONSE: Per discussions with the Department, this Site no longer proposes infiltration BMPs. In lieu of meeting the runoff volume reduction requirements, the pre-development and post-development 2-year, 24-hour storm runoff volume was analyzed and water quality Worksheets #12 and #13 were completed to demonstrate to the Department that the alternative will maintain and protect existing water quality and existing and designated uses by maintaining the preconstruction Site hydrologic impact. These analyses demonstrate that the water quality (including increase of stormwater volume) shall be achieved in all surface waters at least 99% of the time. See Appendix A.5 of the PCSM report for supporting calculations.

SCHUYLKILL COUNTY

The following comments are in reference to the Post Construction Stormwater Management Plans for Permanent Access Roads.

1. Please provide the PCSM Plans for access road AR-LU007.1. The proposed permanent access road has been provided on the Erosion and Sediment Control Plans for Access Roads, however, the details have not been provided on the PCSM Plans for Access Roads. Please provide all applicable details with respect to the PCSM BMPs for the permanent access roads (vegetated swales, check dams, infiltration bed (MLV Pads), etc.). 25 Pa. Code §102.8(f)(9).

   RESPONSE: The PCSM Plan for AR-LU-007.1 is separate from the E&SC plan. The PCSM Plan for AR-LU-007.1 is provided in the "Post Construction Stormwater Management Plans for Permanent Access Roads" for Luzerne County and the supporting calculations are provided in the "Post Construction Stormwater Management Plan Narrative" for Luzerne County. The grading plan and MLV Site cross sectional details are provided on the PCSM Plan. The minimized total disturbed area and re-vegetated/reforested disturbed areas are no longer applicable to the project.

2. Please provide the loading ratio for the proposed infiltration bed (MLV pad) of a maximum impervious loading ratio of 5:1 (impervious area to infiltration area) and a maximum loading ratio of 8:1 (total area to infiltration area). 25 Pa. Code §102.8(f)(8).

   RESPONSE: The loading ratio for the proposed infiltration bed (MLV pad) of a maximum impervious loading ratio of 5:1 (impervious area to infiltration area) and a maximum loading ratio of 8:1 (total area to infiltration area) are provided at the bottom of the Permanent Access Road Summary Sheet provided in the road-specific appendices for the MLV access roads.

3. Please show on the PCSM Plans for Access Roads the location of infiltration for the proposed infiltration bed (MLV Pad). 25 Pa. Code §102.8(f)(9).

   RESPONSE: The infiltration test pit locations are shown on the AR-SC-063 and AR-SC-073.5 plans as circles with two quadrants filled in. The "Field Observation Report" is provided in the road-specific appendices of the PCSM narratives.

4. Please provide the infiltration period (draw down time) for the proposed infiltration BMP. The calculations could not be located within the Erosion and Sediment Control Plan and PCSM/Site Restoration Plan Narrative for the infiltration bed (MLV Pad). 25 Pa. Code §102.8(f)(8).

   RESPONSE: Infiltration information is provided at the beginning of the Infiltration Information Section in the road-specific narratives in both the E&S and PCSM Narratives for all access roads that provide access to the MLV sites.

SUSQUEHANNA COUNTY

The following comments are in reference to the Erosion and Sediment Control and Layout Plans for Access Roads.

1. It appears that volume control BMPS have not been proposed for the proposed access road ARSU-041. Please provide calculations to determine if any volume control BMPs are required. Should volume control BMPS be necessary, please provide all calculations, plans, details, notes, etc. for constriction of the proposed BMP. 25 Pa. Code §§102.8(f)(6), §102.8(f)(8) and 102.8(f)(9).

   RESPONSE: No volume control BMPs are required for AR-SU-041. The access road will provide permanent access to the ROW, but the improvements are temporary. Similar to temporary access roads, upon construction completion, the proposed road materials will be removed and the disturbed areas will be restored to pre-construction conditions.

2. As per the Erosion and Sediment Control Plan and PCSM/Site Restoration Plan Narrative indicates that access has not yet been granted to perform infiltration testing for the proposed volume control swale. Please be advised that infiltration rates that are assumed are not acceptable. Please provide a complete soil test pit/field log information for the project site which details the complete soil profile at the testing location as per Appendix C, Protocol 1 in the BMP manual. The evaluation should include but is not limited to the existing ground elevation, exact testing elevations, soil horizons and layers, depth of horizons and layers in inches, color, texture, structure consistence, limiting layers, etc. Please revise the application accordingly. 25 Pa. Code §102.11(a)(2).

   RESPONSE: The four access roads in Susquehanna County in the Access Road plan set will be restored to pre-construction conditions. There are no permanent proposed improvements. Therefore, no infiltration testing is necessary for AR-SU-041, AR-SU-044, AR-SU-045, and AR-SU-046.

3. Please provide the infiltration period for the proposed infiltration swale with check dams with the infiltration rate from the infiltration testing. 25 Pa. Code §102.8(f)(8).

   RESPONSE: There are no proposed infiltration swales with check dams proposed on any of the four access roads in Susquehanna County in the Access Road plan set. Therefore, no infiltration testing is necessary for AR-SU-041, AR-SU-044, AR-SU-045, and AR-SU-046.

The following comments are in reference to the PCSM Plans for the Zick Meter Station.

4. Original Comment #15: Credit may not be taken for multiple BMPs that are located within one another. Each BMP have certain criteria and even though these design criteria may overlap, that actual BMPs may not overlap. Each BMP must remain separate. The BMPs may be used in series or parallel of one another but credit may not be taken for BMPs that appear to be within one another. Please review all BMPs and revise all documentation as applicable. 25 Pa. Code §102.8(f)(8) and 102.8(f)(9).

   As per the response to Technical Deficiency dated October 2016, Page 84, Comment No. 15, the response indicates that the submittal clarifies that physically overlapping BMPs may be proposed, but volume or water quality credits are not clamed for both of the overlapping

BMPs. This seems to be the case with the infiltration berms, infiltration basin, minimum soil compaction areas and soil amendments. The application indicates that the infiltration basin will be utilized as the volume control BMP, however for the water quality BMP, the use of soil amendments is proposed. This is unacceptable to use BMPs within one another, use one PCSM BMP for water quality and another PCSM BMP for volume control. Please revise accordingly.

RESPONSE: The revised application includes updated plans, narratives and calculations to clarify that no PCSM BMPs utilized to meet the water quality design requirements overlap. Separate vegetated swales, rain gardens, landscape restoration areas, and amended soils are proposed to meet the stormwater runoff quality, volume, and rate requirements for the site. Refer to Appendix A.5 of the PCSM report and sheet 3 of 6 of the PCSM plan set.

5. The proposed infiltration basin bottom for the Zick Meter Station does not meet the appropriate design requirements. The infiltration basin bottom should be at level grade (<l% slope, Protocol #2 in the Stormwater BMP manual). Please revise the application accordingly. 25 Pa. Code §102.11(a)(2).

   RESPONSE: Infiltration BMPs are no longer proposed for this Site. The infiltration basin has been replaced with multiple rain gardens with flat bottoms. This deficiency is no longer applicable. Calculations in the PCSM Narrative and details in the PCSM Plan set have been revised to reflect the updated design.

6. The infiltration period calculations show that the proposed infiltration basin will have a depth of 2 feet. However, infiltration will not be evenly distributed throughout the bottom of the basin since the infiltration basin bed bottom is not below 1% grade. Please show the bed surface area where the infiltration will be taking place in the plans and describe how this will affect the infiltration period. 25 Pa. Code §102.11(a)(2).

   RESPONSE: Infiltration BMPs are no longer proposed for this Site. The infiltration basin has been replaced with multiple rain gardens with flat bottoms. This deficiency is no longer applicable. Calculations in the PCSM Narrative and details in the PCSM Plan set have been revised to reflect the updated design.

7. The proposed infiltration berms in series, as proposed, within the Infiltration Basin, are not acceptable. The loading ratio of the first infiltration berm will not meet the maximum impervious loading ratio of 5:1, or the maximum loading ratio of 8:1. The first infiltration berm in the series will be over loaded and fail. Also, during higher storm events, the infiltration berms will be overtopped and have the high potential to cause erosion along the back slopes creating concentrated flows. This will cause the downstream infiltration berms to be overloaded and fail. Please provide an alternate design for the post construction volume mitigation of the site. 25 Pa. Code §102.8(f)(8).

   RESPONSE: Infiltration BMPs are no longer proposed for this Site. The infiltration basin has been replaced with multiple rain gardens with flat bottoms. This deficiency is no longer applicable

8. Infiltration Basin and Infiltration Berms do not have the required 2-foot clearance between the infiltration area and the limiting zone. Please revise the associated proposed design accordingly. 25 Pa. Code §102.11(a)(2).

RESPONSE: Infiltration BMPs are no longer proposed for this Site. The infiltration basin has been replaced with multiple rain gardens with flat bottoms. This deficiency is no longer applicable. While no seasonal high groundwater is expected to impact the proposed rain gardens, the revised design provided in the PCSM Plans and PCSM Narrative proposes a series of underdrains for additional protection.

The following comments are in reference to the Erosion and Sediment Control Plan/Site Restoration Plan (ESCP/SRP).

9. The proposed plans have a line type that is not described in the Legend. The line type is a blue dashed line. Please identify the line type on the ESCP/SRP Plans (i.e. 2715+00, 2840+00, etc.). Pa. Code §102.8(f)(9).

   RESPONSE: The blue lines shown in the aforementioned locations are 24" sediment barrier, which is identified within the Legend.

WYOMING COUNTY

The following comments are in reference to Compression Station 605.

1. Original Comment 1c: Credit may not be taken for multiple BMPs that are located within one another. Each BMP have certain criteria and even though these design criteria may overlap, that actual BMPs may not overlap. Each BMP must remain separate. The BMPs may be used in series or parallel of one another but credit may not be taken for BMPs that appear to be within one another. Please review all BMPs and revise all documentation as applicable. 25 Pa. Code §102.8(f)(8) and 102.8(f)(9).

   As per the response to Technical Deficiency dated October 2016, Page 146, Comment #1c., the response indicates that the submittal clarifies that physically overlapping BMPs may be proposed, but volume or water quality credits are not clamed for both of the overlapping BMPs. This seems to be the case with the infiltration berms, infiltration basin, minimum soil compaction areas, and soil amendments. The application indicates that the infiltration basin will be utilized as the volume control BMP, however for the water quality BMP, the use of soil amendments is proposed. This is unacceptable to use BMPs within one another. Use one PCSM BMP for water quality and another PCSM BMP for volume control. Please revise the application accordingly.

   RESPONSE: The revised application includes updated plans, narratives and calculations to clarify that no PCSM BMPs utilized to meet the water quality design requirements overlap. See sheets 4 and 5 of the PCSM plan set and Appendix A.5 of the PCSM report.

2. It appears that the drainage area for the proposed Infiltration Basin is not depicted correctly with respect to the proposed swales that will be conveying flow to it. It appears that Ditches 1, 3 6 and 8 will be discharging into Infiltration Basin #1. This will increase the flow that will be entering into the Infiltration Basin. The modeling of the proposed Infiltration Basin and the Post Development Drainage Area Map need to be modified to account for this. Please revise the application accordingly. 25 Pa. Code §102.8(f)(9).

   RESPONSE: The revised application includes updated drainage area maps and calculations to account for the revised stormwater conveyance system design. See Appendix A.2 for revised drainage area maps and associated calculations.

3. The drainage area for Infiltration Basin #1 in the hydrologic calculations is 6.09 acres; however, the Post Development Drainage Area Map indicates that the drainage area to Infiltration Basin #1 will be 32.56 acres. Please address this inconsistency in the respective plans and calculations. 25 Pa. Code §102.8(f)(8).

   RESPONSE: The revised application includes updated drainage area maps and calculations to account for the revised stormwater conveyance system design. See Appendix A.2 for revised drainage area maps and associated calculations.

4. The proposed Infiltration Basin #1 and Infiltration Basin #2 bottoms for the Compression Station 605 does not meet the appropriate design requirements. The bottom of the infiltration basins should be at level grade % slope, Protocol #2 in the Stormwater BMP manual). Please revise the design as depicted in the plans accordingly. 25 Pa. Code §102.11(a)(2).

RESPONSE: Per discussions with the Department, the infiltration basin has been modified to include engineered soil that will be placed to meet the recommended slope requirements. See sheets 4 and 5 of the PCSM plan set.

5. The proposed infiltration berms in series, as proposed, within Infiltration Basin #1, are not acceptable. The loading ratio of the first infiltration berm will not meet the maximum impervious loading ratio of 5: 1, or the maximum loading ratio of 8:1. The first infiltration berm in the series will be over loaded and fail. Also, during higher storm events, the infiltration berms will be overtopped and have the high potential to cause erosion along the back slopes creating concentrated flows. This will cause the downstream infiltration berms to be overloaded and fail. Please provide an alternate design for the post construction volume mitigation of the site. 25 Pa. Code §102.11(a)(2).

   RESPONSE: The revised application no longer includes infiltration berms. However, the revised application includes a modified infiltration basin that meets the 5:1 impervious are to infiltration area ratio requirement. Consistent with clarifications provided by the Department, justification for exceeding the 8:1 loading ratio within the has been provided in the PCSM Narrative, Appendix A.6.

6. Please provide the infiltration period for each infiltration berm should any be proposed for the project. 25 Pa. Code §102.8(f)(8).

   RESPONSE: The revised application no longer includes infiltration berms. See sheet 4 of 10 of the PCSM plan set.

7. The loading ratios provided for the proposed infiltration BMPs, 5:1 for impervious area, and 8:1 for total area, have exceeded the recommended ratios as per the Pennsylvania Stormwater Best Management Practices Manual, December 2006, Appendix C, Protocol 2, Design Considerations. The justification provided that the procurement of additional property to expand the proposed infiltration BMPs is not acceptable. Also, the loading ratio calculations do not include all of the proposed impervious and gravel areas. Gravel areas are considered impervious for loading ratios calculations and should not have any type of "discount" attributed to infiltration. The gravel areas will become compacted and will not promote infiltration. Lastly, loading ratios must be provided for each infiltration BMP. Please revise the application accordingly. 25 Pa. Code §102.8(f)(8).

   RESPONSE: The revised application includes a modified infiltration basin that meets the 5:1 impervious are to infiltration area ratio requirement. Consistent with clarifications provided by the Department, justification for exceeding the 8:1 loading ratio within the infiltration basin has been provided in the PCSM Narrative, Appendix A.6. Loading ratio calculations reflect gravel as impervious.

8. Infiltration Berms 1 through 5 do not have the required 2-foot clearance between the infiltration area and the limiting zone. Please revise the design accordingly. 25 Pa. Code §102.11(a)(2).

   RESPONSE: The revised application no longer includes infiltration berms. See sheet 4 of 10 of the PCSM plan set.

9. It is shown in the Post Construction Stormwater Narrative for Compressor Station 605 that the infiltration berms will be capable of infiltrating a specific volume. Provide supporting calculations for the infiltration credit taken for each of the BMPs shown on stormwater worksheet

#5 including the flow generated to each BMP based on worksheet #4 procedures. Be advised that the credit for each BMP cannot exceed the flow to the BMP. 25 Pa. Code §102.8(f)(8).

RESPONSE: The revised application no longer includes infiltration berms. See sheet 4 of 10 of the PCSM plan set.

The following comments are in reference to the Springville Meter Station.

10. Original Comment 2g: Credit may not be taken for multiple BMPs that are located within one another. Each BMP have certain criteria and even though these design criteria may overlap, that actual BMPs may not overlap. Each BMP must remain separate. The BMPs may be used in series or parallel of one another but credit may not be taken for BMPs that appear to be within one another. Please review all BMPs and revise all documentation as applicable. 25 Pa. Code §§102.8(f)(8) and 102.8(f)(9).

    As per the response to Technical Deficiency dated October 2016, Page 146, Comment Ice, the response indicates that the submittal clarifies that physically overlapping BMPs may be proposed, but volume or water quality credits are not clamed for both of the overlapping BMPs. This seems to be the case with the infiltration basin, minimum soil compaction areas, and soil amendments. The application indicates that the infiltration basin will be utilized as the volume control BMP, however for the water quality BMP, the use of soil amendments is proposed. This is unacceptable to use BMPs within one another, use one PCSM BMP for water quality and another PCSM BMP for volume control. Please revise the application accordingly.

    RESPONSE: The revised application includes updated plans, narratives and calculations to clarify that no PCSM BMPs utilized to meet the water quality design requirements overlap. See sheet 3 of 6 of the PCSM plan set and Appendix A.5 of the PCSM report.

11. The Stormwater Basin detail indicates that the basin should be over excavated and then backfilled with soils amendments to give the required 2-foot clearance between the limiting zone and infiltration basin bed bottom. The design of the infiltration basin should not include an over excavation of the basin to include the soils amendments if the existing soils can satisfactorily infiltrate the required stormwater volume difference from pre-construction to post construction conditions. Please revise accordingly. 25 Pa. Code §§102.8(f)(9) and 102.11(a)(2).

    RESPONSE: As discussed with the Department, the proposed over-excavation and replacement of soil is recommended because the use of the basin as a temporary sediment trap is expected to reduce the infiltration capacity of the underlying soils. By replacing these soils with engineered soils, the infiltration characteristics are expected to be maintained. See sheets 3 of 6 and sheet 6 of 6 of the PCSM plan set and section 1.7 of the PCSM report.

12. The stormwater volume to be infiltrated by the infiltration basin is greater than the total stormwater volume that will be flowing into the infiltration basin. The hydrology calculations show for the 2-year 24-hour storm event, 16,639 cubic feet of stormwater volume will be flowing into the infiltration basin; however, Worksheet #4 indicates that the infiltration basin will be infiltrating 17,225 cubic feet. The infiltration basin cannot infiltrate more stormwater volume than is actually being conveyed to the basin. Please revise the application accordingly. 25 Pa. Code §102.8(f)(8).

RESPONSE: Worksheet #5 has been modified in the revised application to correctly reflect the volume of runoff expected to infiltrate in the basin during a 2-year, 24-hour storm event. See Appendix A.2 for the available storage analysis and Appendix A.5 for the revised Worksheet #5.

13. Please demonstrate that a 90% ground vegetative cover exists downs slope of the proposed level spreader for the entire flow path. Color photographs are appropriate. 25 Pa. Code §102.11(a)(2).

    RESPONSE: The revised application provides color photographs to demonstrate that the downstream vegetative cover is wooded, with 90% ground cover. Photographs and level spreader design calculations can be found Appendix A.4.

14. Please demonstrate that the grades down slope of the proposed level spreader do not exceed 8%. Also, show that the flow length from the level spreader to the receiving water conveyance is a minimum of 75 feet but does not exceed 150 feet. 25 Pa. Code §102.11(a)(2).

    RESPONSE: The revised application provides mapping to show that the ground slope to the nearest receiving water conveyance (an existing depression adjacent to the Site) is less than 8%. See sheet 3 of 6.

15. Please provide calculations according to the Pennsylvania Stormwater Best Management Practices Manual, December 2006, on the sizing of the level spreader in order to diffuse flow rates based on the type of down slope soils. For meadow areas, for every 1 cubic foot per second of flow from the level spreader, for any year storm, 13 linear feet of level spreader must be provided. Should the area be forested, for every 1 cubic foot per second of flow from the level spreader, for any year storm, 100 linear feet of level spreader must be provided. 25 Pa. Code §§102.11(a)(2) and 102.8(f)(8).).

    RESPONSE: Per discussions with the Department, the depression adjacent to the Site is considered the receiving water for the Site. The proposed level spreader was designed such that the post development flow velocity and rates and meet the existing drainage flow velocity and rates leaving the Site.

<u>The following comments are in reference to the Post Construction Stormwater Management Plans for Permanent Access Roads.</u>

16. The proposed area of Minimum Disturbance in acreage has not been provided on BMP Worksheet #3. Please revise accordingly. 25 Pa. Code §102.8(f)(8).

    RESPONSE: The criteria for Worksheet #10, PCSM BMP Minimize Total Disturbed Area, is not met for the permanent access roads. Therefore, Worksheet #10 has been revised to check the "No" boxes and Worksheets #12 and #13 have been added to the road-specific narratives for the MLV access roads.

17. All protected areas with respect to the Minimize Total Disturbed Area PCSM BMP should be delineated and labeled on the PCSM. Please revise accordingly. 25 Pa. Code §102.8(f)(9).

    RESPONSE: The criteria for Worksheet #10, PCSM BMP Minimize Total Disturbed Area, is not met for the permanent access roads. Therefore, Worksheet #10 has been revised to check

the "No" boxes and Worksheets #12 and #13 have been added to the road-specific narratives for the MLV access roads.

18. The following notations must be provided on the PCSM Plans for Permanent Access Roads with respect to the proposed PCSM BMP Minimize Total Disturbed Area. 25 Pa. Code §102.8(f)(9).
    a. The protected areas are not to be subject to grading or movement of existing soils.
    b. Existing native vegetation is not to be removed within the protected area.
    c. Additional planting of native vegetation is allowed in the protected area.
    d. The protected area must be delineated in the field and protected prior to any construction activities taking place.
    e. Should the protected area become compacted and/or disturbed, soils amendment and restoration may be required.

    RESPONSE: The criteria for Worksheet #10, PCSM BMP Minimize Total Disturbed Area, is not met for the permanent access roads. Worksheet #10 has been removed from the road-specific narratives for MLV roads and replaced with Worksheets #12 and #13.

19. The proposed PCSM BMP Re-Vegetate/Re-Forest Disturbed Areas using Native Species does not appear to be applicable for the proposed project site. The intent of this BMP is to preserve existing native vegetation within the site and to also provide native vegetation in areas where native vegetation does not currently exist. It does not appear that these considerations were taken into effect when trying to apply these PCSM BMPs. Please revise the application accordingly. 25 Pa. Code §102.11(a)(2).

    RESPONSE: The criteria for Worksheet #10, PCSM BMP Re-Vegetate/Re-Forest Disturbed Areas, is not met for the permanent access roads. Therefore, Worksheet #10 has been revised to check the "No" boxes and Worksheets #12 and #13 have been added to the road-specific narratives for the MLV access roads.