



April 3, 2020

Transcontinental Gas Pipeline Company, LLC
c/o Joseph Dean
2800 Post Oak Blvd, Level 11
Houston, TX 77056

Re: Technical Deficiency Letter
Leidy South Project
Erosion & Sediment Control Permit Application
DEP Application No. ESG830019002-00
APS ID No. 1003044; AUTH ID No. 1290753
Chapman & Leidy Townships, Clinton County
Jordan Township, Lycoming County
Fairmount Township, Luzerne County
Orange & Jackson Townships, Columbia County
Hegins Township, Schuylkill County

Dear Mr. Dean:

The Department of Environmental Protection (DEP) and the following County Conservation Districts (CCDs), Clinton, Lycoming, Luzerne, Columbia and Schuylkill, have reviewed the above referenced application and have identified the following technical deficiencies. The deficiencies are based on applicable laws and regulations, and the guidance sets forth the DEP's established means of satisfying the applicable regulatory and statutory requirements. The Pennsylvania Erosion and Sediment Pollution Control Program Manual and the Pennsylvania Stormwater Best Management Practices Manual include information that will aid you in responding to some of the deficiencies listed below. The incomplete submission of the application package voids the permit decision guarantee process and any agreements that have been made regarding the timeline for the permit application review. The DEP and District will continue to follow the permit review process procedures in the review and processing of this permit application.

General technical deficiencies are identified, with specific examples provided as a reference. However, all the specific instances may not have been identified. Transcontinental Gas Pipeline, LLC should review the entire project submittal to ensure all deficiencies are addressed.

Technical Deficiencies

1. *§102.5 Permit Requirements*

- a. Please make the following revisions to the Notice of Intent (NOI):

- i.* Section F, Erosions and Sediment Control Plan. Please correct typos. Section F.a, correct compost filer socks to compost filter socks. Section F.d, correct Ledy to Leidy and correct folldways to floodways.
- ii.* Section G, Riparian Buffer. Section G.4 indicates if waivers checked, explain how existing riparian buffers will be undisturbed to the extent practicable. Please provide an explanation or direct to where one can be found.
- iii.* NOI Completeness Checklist, Section 5.b, Pennsylvania Inventory of Historical Places. The inclusion box is not checked for this item. Please verify completeness.
- iv.* Section F, Erosion and Sediment Control Plan, Item e. This box should be checked yes since not all discharges from the project will be directly to surface waters. The E&S and PCSM plans should include the demonstration that the discharge will not cause erosion, damage or a nuisance to off-site properties (i.e., site restoration maintaining existing drainage patterns and discharge points). Similar information and revisions should be made to Section H, Item d.
- v.* Section G of the NOI requests a Riparian Buffer Waiver. Section 1-7 of the ESCGP Narrative provides additional details. The Hilltop Loop HL-5 detail page is not included. Please provide details for HL-5.
- vi.* Section H of the NOI addresses PCSM Plans. Pages 17 and 20 of the NOI show Volume Control (VC), Rate Control (RC), & Water Quality (WQ) for three Best Management Practices (BMPs), which are Vegetated Swale, Infiltration Berm, and Spoil Amendment. NOI requests that "For Rate Control provide volume of stormwater treated and acres treated for the 100-year/24-hour storm event" and "For volume control and water quality provide volume of stormwater treated and acres treated for the 2-year/24-hour storm event". Only one number is shown for all three BMPs. Please provide the numbers requested on the NOI.
- vii.* NOI, page 13 (PCSM /SR Plan Summary) states "Along the pipeline Right-of-Way, typical E&S BMPs such as waterbars and erosion control blanket will be left in place as part of site restoration. Does this mean all waterbars shown on the E&S Plan set will remain post construction? If not, please provide a list of waterbars that will be removed. See below comment in Site Wide section, §102.8(f)(9).
- viii.* In Section 1-8, PNDI Receipts and Consultations, it appears more information is needed to follow up with the Indiana and northern long-eared bat hibernacula survey. In the June 24, 2019 letter from the Fish and Wildlife Service, the Hibernacula section indicates that Compressor Station 620 Option G had 21 openings considered potential habitat and fall portal surveys were planned at the time. Results and resolution to the fall portal surveys do not appear to be

included. Please provide any additional information and clarify how any potential impacts were resolved for the Indiana and northern long-eared bat.

Site Wide

2. *§102.8(f)(9) Plan Drawings*

- a. Please clearly label on all plans whether waterbars will be temporary or permanent. Several waterbars are labelled in the legend as “proposed temp./perm. waterbar and outlet structure.” Additionally, some waterbars are not given a temporary or permanent designation. It needs to be clear which waterbars will be left in place as part of the site restoration.
- b. The E&S plans do not appear to call out the streambank restoration methods at crossings. Details are included in the plans for Typical Channel and Vegetation Restoration with Forested and Non-Forested Riparian Buffer. Please provide identifier for these details and include a designation on plans that restoration will occur at each crossing.
- c. Please provide the profile of the proposed natural gas mainline for the project. The profile should be included on the Erosion and Sediment (E&S) Control Plans and show the depth of cover of the natural gas transmission line.
- d. The Bridge Equipment Crossing and Bridge Equipment Crossing with Centered or Multiple Supports Details does not have the height of the proposed side rails. Please be advised that the side rails should be a minimum height of 1-foot.
- e. On E&S Plans, section General Maintenance Notes for All BMPs, please modify the paragraph regarding road cleaning to include “as needed” maintenance (current note only says end of each work day).
- f. Please provide adequate erosion and sediment control BMPs for construction of stream and wetland crossings. Stream crossing S1-T1-HR and wetlands W3-T7-HL and W14-T6 PEM do not appear to have erosion and sediment control BMPs. Please ensure all stream and resource crossings have proposed erosion and sediment controls throughout project.
- g. Please provide stream crossing methods for all streams. On the Benton Loop, Stream S5-T6 on E&S Control Plan Sheet 5 does not show a stream crossing method.
- h. Please clarify general note on all E&S Control Plans, “Areas which are to be top soiled shall be scarified to a minimum depth of 3 to 5 inches 6 to 12 inches on compacted soils prior to placement of topsoil.” Please clarify the statement so that the contractor will be able to adequately scarify prior to the placement of topsoil.

- i. Please provide information on building structures within limit of disturbance (LOD). Specifically, the house located west of Young Woman's Creek, near MP 185 is within the LOD. Please update plan sheets to confirm if structure still exists and if it will be removed.
- j. DEP does not recommend use of crown vetch. Tables 11.3, 11.4, and 11.5 in the E&S General Notes mention use of crown vetch in seeding mixtures. Remove these seed mixture options and consider using native upland seed mixtures as an alternative.
- k. There was a conference call on March 26, 2020 that included DEP, DCNR and Tri-County Electric. During the call three potential design changes were discussed: co-locating the power line and the pipeline in the Foley Tract, widening the Big Ridge trail access road and replacing the culvert that conveys S2-T7A-HR under Racoon Lane. If you decide to move forward with any of the above listed changes, please revise the plans and project narrative accordingly. If none of the above listed changes are proposed, this comment can be ignored, and nothing needs to be submitted to DEP at this time.

3. §102.8(n) Site Stabilization - Restoration

- a. Please provide a site restoration plan summarizing extents of previous land use, disturbance activities, restoration measures and how they will be maintained and evaluated for effectiveness. This can include, but is not limited to, restoring original contours, plowing severely compacted areas, changes to permanent topographic land cover along pipeline alignment side, distance of right of way (ROW) to be maintained, permanent waterbar criteria, protection of wetlands/waterbodies, monitoring of wetland revegetation, extents and frequency of ROW maintenance, avoidance of mowing during migratory bird nesting season, avoidance of mowing/clearing of construction ROW in wetlands, time of year restrictions for mowing/clearing of riparian areas and housekeeping materials management and litter control.

4. §102.5 Permit Requirements

- a. Please address pertinent sections of the attached public comments submitted to DEP in response to the *Pennsylvania Bulletin* posting on January 4, 2020.

Luzerne County

5. §102.11(a)(1) – E&SC and PCSM BMPs

- a. Please provide proposed final contours for all proposed earthmoving (including Channel #3) that meet the standards in the E&S Manual Appendix D – Standards

for Maps and Drawings. Additionally, Channel 3 is present in calculations, but does not appear on drawings.

- b. Please provide a hard copy of the maximum tributary work map used to delineate the watersheds tributary to the proposed (*channels, basins*).
- c. Provide peak flow calculations for all channel(s) See Chapter 5 in E&SPC 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.
- d. Please indicate the specific BMPs to be installed prior to each step (*or stage*) of construction as described in E&SPC Manual Chapter 2 – Best Management Practice Sequencing of the E&SPC Manual.
- e. The plan map(s) show(s) compost sock(s) crossing contours. Sediment barriers should be installed at existing level grade (E&SPC Manual, Chapter 4 - Sediment Barriers and Filters). Please make all necessary corrections. It is recommended that Figure 4.1 be placed upon a detail sheet for clarity.
- f. A spot check found that the design bottom elevation of Sediment Basin 1 is below the seasonal high water table and/or the adjacent wetlands. Please justify design or redesign to conform to Item 1 of Chapter 7 – Sediment Basins of the E&SPC Manual. §102.11(a)(1) Test pit reports have not determined whether or not the high water mark was encountered.
- g. The embankment for Sediment Basin 1 does not meet the standards of the E&SPC Manual Chapter 7 - Sediment Basins. Please revise the design of this basin and any others which do not meet this specification. A temporary basin that will be converted to a permanent basin should meet the standards of a permanent basin (i.e. embankment should be 3:1 inside and outside).
- h. Show all proposed pipe outfall locations and outlet protection on the plan map(s) Riprap Aprons at Culvert #6 and #7 not shown on plan drawings.
- i. Please adjust concrete wash out locations. Per E&S Manual Chapter 3 – Site Access, the Concrete Washout section does not permit washout facilities to be placed within 50 feet of storm drains, open ditches or surface waters.
- j. The plan map(s) show two basin outlets discharging to areas that are not identified as a surface water. If this is a non-surface water discharge, provide a discharge analysis that meets the standards of the E&SPC Manual Chapter 7 – Sediment Basins.
- k. The plan map(s) show(s) compost sock(s) located in potential concentrated flow below Sediment Basin 1 outlet. Revise the location(s) or provide justification.

1. Please explain the purpose of Timber Mats (MAT.1).

Clinton County

6. §102.4(b)(5)(vi) & §102.4(b)(5)(ix) Regarding Contractor Yards

- a. E&S Plan set for Hensel Replacement; Sheet 2 of 39, in addition to narrative, refers to One Temporary Offline Contractor Yard. However, two are labeled on Sheet 1 of 39 and Sheet 24 of 39 shows two areas that are not well identified. Please clarify and identify.
- b. E&S Plan set for Hilltop Loop, Sheet 2 of 22 refers to Three Offline Contractor Yards. However, only two are labeled on Sheet 1 of 22 and Sheet SD of 22 shows an area that is not well identified. In certain parts of the E&S Plan Narrative, CY-005 is referenced, but its location is not identified. Please clarify and identify.
- c. E&S Plan set for Hensel Replacement, Sheet 21 of 39, the large area north of Tamarack Road and west of station 8700+00 is unidentified. Please identify and provide details, if needed.
- d. Details regarding grading, cover, restoration, etc., for work in Temporary Contractor Yards, Offline Contractor Yards, and Contractor Staging Areas are not complete and are not included in the sequence of construction. Please provide.

7. §102.4(b)(5)(ix) Regarding Plan Drawings

- a. Hilltop Loop Sheet 2 of 22, Item 7 under Contractor Notes states: "Contractor may elect to use diversion channel or if conditions allow will place an earthen berm of appropriate size that will convey flow to the respective designated Clean Water Crossing." Please add a note that requires the permittee, co-permittee, or consultant to provide advance notice to the Conservation District or DEP.
- b. Hilltop Loop Sheet 5 of 22 contains the acronym for the pipeline installation crossing of CD/DXP. Please confirm the acronym is correct or adjust accordingly.
- c. On Hilltop Loop, rip-rap stream bank stabilization detail does not appear to be included in E&S plans for Young Woman's Creek. The stream bank stabilization method should be included for each stream that will be crossed by the pipeline and/or access roadway. Please revise accordingly.
- d. Hensel Replacement Sheet 2 of 39, Item 13 under General Site Notes states: "Placement of Bridge Equipment Crossing shown ... is not final and adjustment of location may be necessary for the removal of Leidy A Line and installation of Leidy

- Line D." Please add a note that requires the permittee, co-permittee, or consultant to provide advance notice to the Conservation District or DEP.
- e. Hensel Replacement E&S Plan set contains two shaded areas that are difficult to differentiate. Erosion Control Blanket and Proposed Gravel are both yellow. Please show a clear difference.
 - f. Hensel Replacement Sheets 6, 7, 8, 9, & 10 of 39 for Big Ridge Trail have very little E&S BMPs, other than the stream or wetland crossings. Please clarify intent for Big Ridge Trail. Additionally, please provide any site restoration measures taken to preserve road quality and minimize stormwater impacts. Practices utilized for low-use roads include, among others, outsloping the road and employing simple BMPs, such as grade breaks.
 - g. Hensel Replacement Sheet 9 of 39 shows a French mattress and Wetland Equipment Crossing (WEC). Is the French mattress a permanent wetland crossing? Please clarify the reason for using a French mattress through a wetland.
 - i. In addition, please provide information if trees will be cut as part of wetland crossing.
 - h. Regarding the portion of Leidy Line A that will be capped and remain within the Tamarack Swamp:
 - i. Please clearly identify each location where Leidy Line A will be capped and allowed to remain in the Tamarack Swamp.
 - ii. Also, please provide details for capping and abandoning that portion(s) of Leidy Line A.
 - iii. Please show on the Erosion and Sedimentation Control Plans the transmission line length to be grouted. This should include staging area and restoration efforts needed to complete the pipeline grouting.
 - i. Hensel Replacement Sheet 22 of 39 shows an area of "No Disturbance". Please clarify what this area will be used for and how it will be field marked to prevent disturbance.
 - j. Note 5 under Temporary and Permanent Stabilization on Hensel Replacement Sheet 27 of 39 and Hilltop Loop Sheet 12 of 22 refer to Mixture 1 being on Table 11.3. Please modify to refer to the appropriate table.

Columbia County

8. §102.4(b)(5)(iii) - Characteristics of Earth Disturbance

- a. Contractor Yard 001 - More information is needed related to the proposed work to be done on the contractor/pipe yard. Will the area be regraded and/or stoned lined or otherwise protected during its use?
- b. Compressor Station 610 - More information is needed related to the proposed work to be done on the compressor station staging area. Will the area be regraded and/or stoned lined or otherwise altered during its use?

9. §102.4(b)(5)(vii) – BMP Installation and Proper Functioning

- a. Contractor Yard 001 - Provide a site-specific construction sequence for the contractor yard showing the installation of all BMPs and the steps needed to restore the site to meadow conditions.
- b. Compressor Station 610 - The flow path to CFS-610 16-21 appears to extend onto neighboring property and be longer than assumed in the calculations. Provide a drawing justifying the flow length assumed in the plans.

10. §102.4(b)(5)(ix) – Plan Drawings

- a. Show an enlargement of each sediment trap indicating how the temporary excavation of the trap bottom will connect to the existing ground at the compost filter socks. Any discharge from the socks should be to stable ground and not to areas disturbed to excavate the trap.
- b. The cleanout elevation for each trap as well as top and bottom elevations should be provided.
- c. Clearly show that the discharge from the sediment basins is to a stable outlet. If it outlets to the road ditch, provide stability calculations for the road ditch. (Necessary? E&S Manual does not require spillway since “flow-through”)
- d. The plans should clearly show where each seed mixture on the plans is to be used.

11. §102.4(b)(5)(i) – Existing Topographic Features

- a. The existing condition of the area north of compressor station 610 that is included in the LOD for the project should be updated to reflect the most current conditions. As part of the recent final stabilization of the site for the recently completed construction project, several water control diversions and waterways were installed to control gullies that had formed. These should be documented so that they can be replaced as is or with equivalent BMPs during the retirement of the site.

12. §102.4(b)(5)(viii) – Supporting Calculations and Measurements

- a. Silt Socks BL – 19, 20, 21, 22, 96, 97, 98, 99, 100, and 101 are undersized. Please revise.
- b. Please provide manufactures spec sheet for all channel linings.
- c. Please provide all information from E&S worksheets 12-17 for the proposed sediment basin.
- d. Please provide anti-seep collar worksheet for the proposed sediment basin.
- e. The typical detail on for the sediment basin is lacking specific information. Please revise this detail to include all necessary construction dimensions.
- f. Fertilizer type should be 10-20-20 or per soil test for permanent stabilization.
- g. Rock aprons for the clean water crossings (CWC) are not shown on E&S worksheet 20. Please include these aprons on this worksheet.
- h. The dewatering facility for hydrostatic testing water is located close to a steep slope. Please explain why this was not located farther from this adverse location.
- i. Information on E&S worksheets 11 do not match the channel typical detail on the plan sheets. (i.e. – Channel detail on Sheet 22 has BL-11 with rip-rap lining and BL-12 with grass lining. Whereas worksheet 11 has BL-11 with grass lining and BL-12 with rip-rap). Please ensure information matches between both sources.
- j. Please define which of the many seed mixes show in the plans will be used for temporary and permanent stabilization. Provide seeding specifics, as per the E7S Manual, references to a standard seed mixture are not acceptable.
- k. Please indicate mulch rates and method of anchoring in the plans.

13. §102.4(b)(5)(ix) – Plan Drawings

- a. Sediment basin shows a baffle on the plan sheets. Please provide a detail for the construction of this baffle.
- b. The line type for rock construction entrance (RCE) at several locations is obstructed by other line types. Please make all RCEs visible on the plans for their entire length.
- c. Please clarify if the channels and checkdams also be removed at the Mordan Hollow Access Road?

- d. Please clarify if the existing basins will be removed at station 4787+80.
- e. Please show stockpile locations at contractor yards.
- f. Please provide label to green line in DC-BL-10 CY-002.
- g. The construction sequence states that all trees will be fell by hand on site. Please clarify if this is how it is intended to read or was if it was meant to be only in critical areas.
- h. Please include construction detail 3-15 and/or 3-13.
- i. Please include the staple pattern for erosion control blanket and channel linings.

Schuylkill County

14. §102.4(b)(5)(vii) – Sequence of BMP Installation and Removal

- a. Provide a site-specific sequence of BMP installation and removal in accordance with Chapter 2 of the E&SPC Manual.

15. §102.4(b)(5)(viii) – Supporting Calculations and Measurements

- a. Provide peak flow calculations for channel, Diversion Channel #1. See Chapter 5 in E&SPC 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. Please provide this worksheet if necessary.
- b. It appears Channel BL-1-ECM may be Diversion Channel #1. If this is the case, please label plans and Worksheet #11 to clearly identify channel.

16. §102.4(b)(5)(ix) – Plan Drawings

- a. Please provide contours for Diversion Channel#1.
- b. Sediment trap BMP's are present in the South Eastern area of the Site, while no improvements or change in cover is proposed in these areas, please describe why these BMP's are needed, as earth disturbance should be minimized.

Post Construction Stormwater Management

Site Wide

17. §102.8(g) PCSM Plan Stormwater Analysis

- a. Note – Both Worksheet 10 and Worksheet 11 do not need to be filled out for the same drainage area. Worksheet 11 is intended for sites where volume reduction cannot be met. Therefore, if volume reduction is met, Worksheet 11 does not need to be filled out. Completing Worksheet 10 meets the requirement and demonstrates solute reduction.

18. §102.8(f)(9) – Plan Drawings

- a. The NS BMP 5.6.1 Minimize Total Disturbed area is used throughout the project. Please provide the following notations on the PCSM Plans for the areas proposed to be protected from earth disturbance:
 - i. The protected areas shall not be subject to grading or movement of existing soils.
 - ii. Existing vegetation is not to be removed from the protected area.
 - iii. The protected area must be clearly delineated in the field and protected prior to any construction activities taking place.
 - iv. Any protected areas that have been disturbed/compacted during construction may require soil amendment and restoration.
- b. The NS BMP 5.6.3 Re-Vegetate and Re-Forest Disturbed Areas is used throughout project. This BMP has two parts, 1) Protect Existing Trees, and 2) Revegetate and Reforest. Please clarify which part will be utilized. Please see PA Stormwater BMP Manual Chapter 8, Criteria and Credits for BMP 5.6.3 and provide appropriate notations on PCSM plans for selected part.

Compressor Station 607**19. 102.8(f)(6) A written description of the location and type of PCSM BMPs including construction details for permanent stormwater BMPs including permanent stabilization specifications and locations**

- a. For wet pond, please provide distances from BMP bed bottom to seasonally high water table and bedrock to demonstrate suitability of location.
- b. For infiltration basin, as per the Pennsylvania Stormwater Best Management Practices Manual, Appendix C, Protocol 2, a 2-foot clearance should be maintained between bottom of the proposed BMP where infiltration is to occur and any limiting zone (mottling, seasonally high water table, bedrock, etc.). The proposed BMP has

the potential to have an inadequate distance as specified by the manual. Please provide documentation that shows an adequate distance exists or justification.

- c. Extents of BMPs selected on Worksheet 10 and Worksheet 11 need to be described in PCSM narrative. This includes NS BMP 5.6.1 Minimize Total Disturbed Area, NS BMP 5.6.3 Re-Vegetated and Re-Forest Disturbed Areas, NS BMP 5.9.1 Streetsweeping (incorrectly labelled as BMP 5.9.15 on Worksheet 11), Structural BMP 6.4.5 Rain Garden/Bioretenion and Structural BMP 6.4.8 Vegetated Swale.
- d. The proposed BMP “pipe level spreader” has several deficiencies. Since an insufficient amount of information has been provided on the proposed BMP, the BMP was reviewed to consider most of the possible aspects of the BMP. These deficiencies can include but may not be limited to the following comments. BMP’s should be site specific designs which consider all characteristics of the proposed project site. Therefore, additional information should be provided as necessary.
 - i. Please demonstrate that a 90% ground vegetative cover (grasses, meadow, brush, short bushes, etc.) exists down slope of the level spreader for the entire flow path and throughout the entire year.
 - ii. Please demonstrate that the slope of grades immediately above the level spreader(s) do not exceed 8 percent.
 - iii. Please provide notation on the PCSM Plans that the receiving down slope soils and land are to remain undisturbed for the entire flow path.

20. §102.8(f)(8) Supporting Calculations

- a. On Worksheet #4 – existing conditions, only meadow, woodland and impervious are acceptable cover types. Per PA Stormwater BMP Manual, Section 3.3.3, all existing non-forested areas must be considered meadow (good condition) or its equivalent.

21. §102.8(f)(9) Plan Drawings

- a. Channel 3 does not appear to be labelled on the PCSM plan, Sheet 3 Drawing. This channel is on the PCSM Standard E&S Worksheet #11. Please label on plan.
- b. Level spreader design sheets do not appear to match level spreader detail on PCSM Drawing Sheet 6. Design worksheets say pipe diameter is 8 feet, while detail shows 12 feet. Design worksheet also shows perforations. Additionally, drawing indicates a rock apron outlet instead of a pipe level spreader. Will perforations shown on design worksheet be necessary if a stilling basin is used? Please clarify design.

- c. Since level spreader will be used for E&S, it needs to be reconfigured to its original state before use as a permanent stormwater feature by flushing and cleaning out all sediment. Please include level spreader in steps used to reconfigure wet pond.
- d. Extents of BMPs selected on Worksheet 10 and Worksheet 11 need to be shown on plans. This includes NS BMP 5.6.1 Minimize Total Disturbed Area and NS BMP 5.6.3 RE-Vegetated and RE-Forest Disturbed Areas.

22. §102.8(f) PCSM Plan Contents

- a. Please label attachments correctly. Section 7.0 references Hydrocad design calculations in Attachment 5. There is no Attachment 5, these calculations may be in Attachment 4. Attachment 4 seems to be categorized incorrectly, as the subsections are given Attachment 3 designations.
- b. Section 8.5 states temporary cover includes “see mixture 1 from Table 11.3.” Please correct typo and table reference, as Table 11.3 does not have seed mixtures. Permanent cover for riparian areas should not use Mixture 1, as that is a temporary mixture. Please specify seeds, as referencing a seed mix is not appropriate.

Compressor Station 620

23. §102.8(f)(6) A written description of the location and type of PCSM BMPs including construction details for permanent stormwater BMPs including permanent stabilization specifications and locations

- a. Worksheet 10 and Worksheet 11 mention BMP 5.6.1 Minimize Total Disturbed, BMP 5.6.3 Re-Vegetate/Re-forest Disturbed Areas and BMP 6.4.5 Rain Garden/Bioretention. If utilized, BMPs need to be listed in narrative.
- b. Level spreader should be referenced in PCSM narrative. Please confirm what type of level spreader will be used. PCSM Plan Sheet 3 appears to show a rip-rap apron, while detail on Sheet 6 shows a square basin and the level spreader design worksheet indicates a perforated pipe level spreader. Will pipe going into level spreader be perforated?
- c. Furthermore, the proposed BMP “pipe level spreader(s)” have several deficiencies. Since an insufficient amount of information has been provided on the proposed BMP, the BMP was reviewed to consider most of the possible aspects of the BMP. These deficiencies can include but may not be limited to the following comments. BMP’s should be site specific designs which consider all characteristics of the proposed project site. Therefore, additional information should be provided as necessary.

- i.* Please demonstrate that a 90% ground vegetative cover (grasses, meadow, brush, short bushes, etc.) exists down slope of the level spreader for the entire flow path and throughout the entire year.
- ii.* Please demonstrate that the slope of grades immediately above the level spreader(s) do not exceed 8 percent.
- iii.* Please provide notation on the PCSM Plans that the receiving down slope soils and land are to remain undisturbed for the entire flow path.

24. 102.8(f)(9) Plan Drawings

- a. Since level spreader will be used for E&S, it needs to be reconfigured to its original state before use as a permanent stormwater feature by flushing of perforated pipe and cleaning out all sediment. Please add this to narrative and construction sequence.
- b. PCSM Plan Sheet 4 Riparian Buffer section states no existing or proposed riparian buffers are within site location. Plan maps and narrative section 13.0 indicate a riparian buffer will be temporarily impacted and then restored. A Riparian Buffer Waiver is claimed under 25 PA Code §102.14(d)(2)(iv). Please update Riparian Buffer section on Sheet 4.
- c. Please show extents of BMPs listed on Worksheet #10 and #11 on plans. This includes BMP 5.6.1 Minimize Total Disturbed BMP 5.6.3 Re-Vegetate/Re-forest Disturbed Areas.
- d. The proposed BMP “vegetated filter swales” have several deficiencies.
 - i.* Vegetated filter swales typically have a bottom width that ranges from a minimum 2 foot to a maximum of 8 feet. The PCSM plan detail for this swale lists the bottom as between 7 and 18 feet. Please justify or revise.
 - ii.* Vegetated swales with slopes greater than 3% but less than 6% are acceptable as a water quality BMP if check dams or earthen check berms are provided and designed according to the Pennsylvania Stormwater Best Management Practices Manual, November 2006, Chapter 6, vegetated swale. Vegetated swale appears to have slope greater than 3%. Please justify or revise to include check dams.
 - iii.* Please include information relating to infiltration capabilities of swale. PA Stormwater BMP 6.4.8 mentions swale should be underlain with 24 inches of permeable soil and have a minimum infiltration rate of 0.5 in/hr. The infiltration rate for swale site, TP-10, is 0.22 in/hr. Please show infiltration is appropriate for swale.

- e. The proposed BMP “wet pond / retention basin” has numerous deficiencies. These deficiencies can include but may not be limited to the following comments. BMP’s should be site specific designs which consider all characteristics of the proposed project site. Therefore, additional information should be provided as necessary.
 - i. BMP Description on Sheet 4 has wet pond with inside slope of 2:1 and outside slope of 3:1. Please provide both inner and outer embankment side slopes of 4:1 minimum as per the BMP manual.
 - ii. Please provide the infiltration rate for the basin. Infiltrations seem relatively high for TP-5, TP-6, TP-7 and TP-8, sites where the wet detention basin will be. Will an impermeable soil line basin bottom? Overall, provide demonstration soil types and infiltration will be effective for this basin.
 - iii. Please provide the distances from the BMP infiltration bed bottom to the seasonally high water table and bedrock.

Hensel Replacement

Western Terminus

25. §102.8(f)(6) A written description of the location and type of PCSM BMPs including construction details for permanent stormwater BMPs including permanent stabilization specifications and locations

- a. Please provide information in narrative for BMPs on Worksheet 10 and Worksheet 11, NS BMP 5.6.1 Minimize Total Disturbed Area, NS BMP 5.4.3 Protect/Utilize Natural Drainage Features, NS BMP 5.6.2 Minimize Soil Compaction, so it can be understood how these BMPs will be implemented and utilized.
- b. Please include additional information for level spreader to demonstrate suitability. These deficiencies can include but may not be limited to the following comments. BMP’s should be site specific designs which consider all characteristics of the proposed project site. Therefore, additional information should be provided as necessary.
 - i. Please demonstrate that a 90% ground vegetative cover (grasses, meadow, brush, short bushes, etc.) exists down slope of the level spreader for the entire flow path and throughout the entire year.
 - ii. Please demonstrate that the slope of grades immediately above the level spreader(s) do not exceed 8 percent.

- e. Please provide the following notations on the PCSM Plan with respect to the soil amendment and restoration:
 - i. Soil amendment and restoration should not take place within the drip line of trees or tree line to avoid damaging root system.
 - ii. Soil amendment and restoration should not take place over utility installations within 30 inches of the surface.
 - iii. The methodology should only be performed when the soil conditions are dry.
 - iv. The methodology should only be performed using a solid shank ripper, not a disk or plow due to their ineffectiveness.
- f. Please provide on the PCSM Plans for the use of the ratio of soil to compost of 2:1 (soil:compost) as per the PCSM Manual, Chapter 6.

27. §102.8(f)(8) Supporting Calculations

- a. Please include level spreader design worksheet to verify design. This was included for other project level spreaders and did not appear to be included.
- b. PCSM Channel Design Worksheet #11 for MB-1 and MB-2 appear to have the Calculated Flow Depth and Total Depth entered incorrectly. The Total Depth should not be less than the Calculated Flow Depth. Please review.

Eastern Terminus

28. §102.8(f)(6) A written description of the location and type of PCSM BMPs including construction details for permanent stormwater BMPs including permanent stabilization specifications and locations

- a. Please include in the narrative information for the BMPs listed on Worksheet #10 and #11 – NS BMP 5.6.1 Minimize Total Disturbed Area, NS BMP 5.6.3 Re-vegetate/Re-forest Disturbed Areas (Native Species), NS BMP 5.6.2 Minimize Soil Compaction and NS BMP 5.4.3 Protect/Utilize Natural Flow Pathways in Overall Stormwater Planning and Design.

29. §102.8(f)(9) Plan Drawings

- a. Please confirm designation of channels shown on plans. Plans refer to channels DC HR-28, DC HR-29, and DC HR-30. However, PCSM Report Channel Design Worksheet #11 lists channels HR-32, HR-33 and HR-34.

- b. Please clarify intent of diversion channels as narrative states purpose of channels is to divert runoff to swales. However, the channels empty into the bottom portion of Vegetated Swale #2 and do not appear to provide treatment for runoff.
- c. It appears Proposed Culvert 1 on PCSM Plan Drawing Sheet 5 does not have scour protection. Please provide or justify.
- d. Vegetated filter swales typically have a bottom width that ranges from a minimum 2 foot to a maximum of 8 feet. The vegetated swale detail on PCSM Sheet 7 lists a bottom width of 8 to 16 feet for both swales. PA Stormwater BMP Manual BMP 6.4.8 Vegetated Swale recommends employing water obstructions such as berms or walls to prohibit braiding when bottom widths exceed 8 feet. Please confirm design.
- e. Based on slope and proximity of discharge to road, please consider adding check dams to Vegetated Swale 2.

30. §102.8(f)(8) Supporting Calculations

- a. On Worksheet #11, Channel HR-33 does not have an entry for Q (calculated at flow depth d). Please provide.

Benton Loop

31. §102.8(f)(6) A written description of the location and type of PCSM BMPs including construction details for permanent stormwater BMPs including permanent stabilization specifications and locations

- a. Worksheet 4 included in the PCSM narrative lists gravel as cover type for existing conditions. Only woodland, meadow and impervious are acceptable cover types for this worksheet. Please revise.
- b. Please include in the PCSM narrative information for the BMPs listed on Worksheet #10 and #11 – NS BMP 5.6.1 Minimize Total Disturbed Area, NS BMP 5.6.3 Re-vegetate/Re-forest Disturbed Areas (Native Species) and Structural BMP 6.4.5 Rain Garden/Bioretenion.
- c. PCSM report only identifies 2 soil mapping units within eastern terminus LOD. However, Soils Map in Attachment 2 appears to show additional soils. Of importance is soil type AdB, Albrights silt loam, as this appears to compose a significant portion of the LOD, including proposed location of Wet Pond. Please evaluate and adjust as necessary in PCSM report.
- d. Once soil type and limitations have been determined, please describe appropriateness of soil for Wet Pond. If soil modification is required, please include this information.

- e. Please include level spreader in narrative and clarify what type of level spreader will be used. Construction detail of level spreader on PCSM Sheet 6 indicates a square stilling basin, while drawing on Sheet 3 indicates a riprap apron. Additionally, level spreader design worksheet mentions a perforated pipe.
- f. Furthermore, the proposed BMP “pipe level spreader(s)” have several deficiencies. Since an insufficient amount of information has been provided on the proposed BMP, the BMP was reviewed to consider most of the possible aspects of the BMP. These deficiencies can include but may not be limited to the following comments. BMP’s should be site specific designs which consider all characteristics of the proposed project site. Therefore, additional information should be provided as necessary.
 - i. Please demonstrate that a 90% ground vegetative cover (grasses, meadow, brush, short bushes, etc.) exists down slope of the level spreader for the entire flow path and throughout the entire year.
 - ii. Please demonstrate that the slope of grades immediately above the level spreader(s) do not exceed 8 percent.
 - iii. Please provide notation on the PCSM Plans that the receiving down slope soils and land are to remain undisturbed for the entire flow path.

32. §102.8(f)(9) Plan Drawings

- a. Please show extents of BMPs NS BMP 5.6.1 Minimize Total Disturbed Area and NS BMP 5.6.3 Re-vegetate/Re-forest Disturbed Areas (Native Species) on PCSM plan drawings.
- b. The proposed BMP “wet pond / retention basin” has noted deficiencies. Since an insufficient amount of information has been provided on the proposed BMP, the BMP was reviewed to consider most of the possible aspects of the BMP. These deficiencies can include but may not be limited to the following comments. BMP’s should be site specific designs which consider all characteristics of the proposed project site. Therefore, additional information should be provided as necessary.
 - i. Please demonstrate that a minimum of 5 acres is draining to the proposed basin or provide proof of sustained base flow to the wet pond / retention basin.
 - ii. Please clarify design. PCSM Plan design on Sheet 3 appears to show a baffle in middle of pond, creating a forebay of substantial size. Forebays generally contain 10-15 percent of the pond volume.
 - iii. Please provide both inner and outer embankment side slopes of 4:1 minimum as per the BMP manual.

- iv. Please provide the distances from the BMP bed bottom to the seasonally high water table and bedrock. Also, provide information on permeability of soils of BMP location to demonstrate suitability.
- c. Include flushing out of the level spreader in the BMP installation narrative, to indicate this will be done in conversion to the wet pond.

Pursuant to 25 Pa. Code § 102.6(c) of DEP's rules and regulations, you must submit a response fully addressing each of the significant technical deficiencies set forth above. Please note that this information must be received within sixty (60) calendar days from the date of this letter, on or before June 2, 2020 or DEP may consider the application to be withdrawn by the applicant.

You may request a time extension in writing before June 2, 2020 to respond to deficiencies beyond the sixty (60) calendar days. Requests for time extensions will be received by DEP and considered. You will be notified in writing of the decision either to grant or deny, including a specific due date to respond if the extension is granted. Time extensions shall be in accordance with 25 Pa. Code § 102.6(c).

Please submit 3 copies of the revised E&S plans and 1 copy of the revised PCSM plan to each of the County Conservation Districts and a digital copy of the revised PCSM plan to the DEP.

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

Should you have any questions regarding the identified deficiencies, please contact Nicholas Rossi at 717-772-5667 or nicrossi@pa.gov and refer to the project references above, to discuss your concerns or to schedule a meeting. The meeting must be scheduled within the 60 calendar days allotted for your reply, unless otherwise extended by DEP. You may also follow your application through the review process via *eFACTS on the Web* at: <http://www.ahs2.dep.state.pa.us/eFactsWeb/default.aspx>. (for individual permits only).

Sincerely,



Rebecca Albert, P.G.
Environmental Group Manager
Regional Permit Coordination Office

Enclosure: Public Comments Document

cc: WHM Consulting, Inc.
U.S. Army Corps of Engineers, Baltimore District
PA Fish & Boat Commission, Division of Environmental Services
Clinton County Conservation District
Lycoming County Conservation District
Luzerne County Conservation District
Columbia County Conservation District
Schuylkill County Conservation District
Leidy Township
Chapman Township
Jordan Township
Fairmount Township
Jackson Township
Orange Township
Hegins Township