



May 18, 2020

Christopher Smith, P.E.
Chief, Construction Permits Section
Waterways and Wetlands
PADEP Southeast Region
2 East Main Street
Norristown, PA 19401

RE: Technical Deficiency Letter
Erosion and Sediment Control General Permit (ESCGP)
Permit Application No. ESG 01 00 19 001
JMT Job No. 18-00672-001

Dear Mr. Smith:

Johnson, Mirmiran & Thompson (JMT) is pleased to submit the Comment Resolution Summary letter in response to the Technical Deficiency Letter – Erosion and Sediment Control General Permit (ESCGP) for Adelphia Gateway Project – Phase 1, dated April 24, 2020.

Please note, due to the COVID-19 pandemic and the statewide restrictions on non-life sustaining businesses this submission is being issued electronically. Based on our coordination, Bucks, Montgomery, and Chester County Conservation District and the DEP Regional office will receive electronic copies of the submission package. JMT will be forwarding hard copies to Delaware County Conservation District for review.

The resubmission includes the following revised documents:

- Notice of Intent for ESCGP-3
- Adelphia Gateway Project, Erosion and Sediment Control Plan and Post Construction Stormwater Management Plan
- Erosion and Sediment Control Report
- Post Construction Stormwater Report

The following are our responses to comments:

Technical Deficiencies from DCCD:

All comments from DCCD refer to regulatory citation of Chapter 102.11(a)(1)

Marcus Hook Compressor Station:

1. **DCCD Comment (2/25/20):** No erosion and sediment control provided for the construction of the MRC to prevent disturbed areas from draining to the facility or to temporary protect the outlet structure top of grate until facility is stabilized. This is an upslope diversion, so why two different linings?

JMT Response (3/24/20): *The erosion and sediment control plans have been revised to include a compost filter sock sediment trap at the southern end of the site prior to construction of the MRC basin. In addition, perimeter measures have been included to limit sediment laden runoff from reaching surface waters. Please note that erosion and sediment control blanketing is proposed for the basin*

embankments, the basin also has a vegetated hatch to represent the final condition, there is only one lining proposed.

DCCD Comment (4/24/20): My assumption is that you plan to place a 24" circle of compost filter sock around the existing pipe where MRC 1 is to be installed. It is labeled as a Compost Filter Sock Trap, but no design calculation were submitted, and the trap detail did not suggest a design for the Transco Site. The standard detail suggests it would be Compost Filter Socks of 24, 18. And 12. Please clarify.

JMT Response (5/18/20): *At the Marcus Hook site, a 24" compost filter sock trap is proposed around the existing pipe where the MRC BMP is to be installed. A detail is provided on Sheet ES-9 for the Compost Filter Sock Trap, which notes the minimum sock height is 24". Calculations provided in Appendix C of the E&S Report use a 24" high compost filter sock trap to provide adequate sediment storage. There is no compost filter sock sediment trap proposed for the Transco site.*

Transco Meter Station:

1. **DCCD Comment (2/25/20):** Rock lined Channel No. 2 and riprap apron from storm-tank infiltration system does not discharge to a surface water. Please provide a discharge analysis that meets the standard Item 15 on page 161 and Items 1—3 of page 439 of the E&SPC Manual

JMT Response (3/24/20): *The PCSM and E&S Narratives were updated to include an off-site discharge analysis for the existing swales at Marcus Hook and Transco, see PCSM Appendix D.3.*

DCCD Comment (4/24/20): In the previous submission, the applicant had the channels in all the way to the wetland line and removed them from this submission for some unknown reason. The applicant does not propose level spreaders, and the applicant does not provided photo from the discharge to the surface water.

JMT Response (5/18/20): *To meet the design criteria for water quality, the design has been revised. The bypass channel is now a vegetated swale which is conveyed to a WQ devise before adding to the basin outflow. This is discharge to the existing wetlands found on the same parcel as the meter station, same ownership. The discharge point is designed with a level spreader to minimize erosion and maintain sheet flow, like existing drainage pattern. Please note a photo has been added to identify the flow path.*

Technical Deficiencies from MCCD:

ES-21 Comments

1. **MCCD Comment (2/25/20):** The ends of the proposed compost socks should point sufficiently upslope to create adequate pooling of runoff for the settling of sediment and to prevent end-around flows. For example, 18" socks should be pointed upslope at least 18"—24" upslope in elevation difference to ensure that end-around flows are avoided. Per the E&S Manual, pages 61 and 62, "The ends of sediment barriers should be turned upslope at 45 degrees to the main barrier alignment lon a distance sufficient to elevate the bottom of the barrier ends to the elevation of the top of the barrier at the lowest point. This is to prevent runoff from flowing around the barrier rather than through it. As with other sediment barriers, filter socks should be placed parallel to contour with both ends of the sock extended upslope at a 45-degree angle to the rest of the sock to prevent end-abounds."

JMT Response (3/24/20): *The ends of the proposed compost filter sock have been revised to point sufficiently upstream to allow for settling of sediment and to prevent end-around flows.*

MCCD Comment (4/24/20): End of proposed compost sock do not appear to be sufficiently pointed upslope for example, Compost socks 1, 3, 4, 5, 6 and 7.

JMT Response (5/18/20): *All compost filter sock segments have been revised to extend at least 12"-18" upslope in elevation difference to ensure the end-around flows are avoided. In addition, the design provides for diversion CFS and CFS sediment traps to manage the LOD.*

1. **MCCD Comment (2/25/20):** Silt fence should be shown exactly parallel to existing contours. Maximum deviation from level grade should be 1 percent, and not extend for more than 25 ft.

JMT Response (3/24/20): *Compost filter sock is shown parallel to the existing contours to the maximum extent possible given the small limit of disturbance and the requirement to stay within the project easement.*

MCCD Comment (4/24/20): Please refer to compost 1, 3, 5, 6 and 7.

JMT Response (5/18/20): *Compost filter sock is shown parallel to the existing contours. In addition, the design provides for diversion CFS and CFS sediment traps to manage the LOD.*

2. **MCCD Comment (4/24/20):** There appears to be a gap in the E&S controls located between compost socks 4 & 7. Please revise.

JMT Response (5/18/20): *CFS-7 was removed, and CFS-4 was extended to remove the gap in the E&S controls between CFS-4 and CFS-7.*

3. **MCCD Comment (4/24/20):** Please verify how the two discharge pipes to the north of the rock construction entrance will be allowed to pass through the site. It appears that they are discharging straight into the construction entrance.

JMT Response (5/18/20): *A temporary 18" pipe culvert is noted on the design plans with proposed inverts. Please refer to the rock construction entrance detail on Sheet ES-8 which details how the pipe culvert shall be placed in accordance with the rock construction entrance.*

4. **MCCD Comment (4/24/20):** Please verify how the construction entrance wash water will be handled.

JMT Response (5/18/20): *A compost filter sock sediment trap is proposed downstream of the rock construction entrance wash rack. Contractor will be responsible for removing sediment as needed.*

ES-22 Comments

1. **MCCD Previous Comment (2/25/20):** Please provide the drainage areas to the proposed inlet protection on sheet ES-22.

JMT Response (3/24/20): *As requested, inlet drainage area plans to the proposed inlet protection is provided in the E&S narrative, Appendix C.*

MCCD Subsequent Comment (4/24/20): The drainage areas provided to the inlet protections appear to exceed the maximum drainage areas allowed to the inlet protect. Please revise.

JMT Response (5/18/20): *Inlet protection was removed as adequate E&S control measures are provided for the limit of disturbance, upslope of the inlet.*

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2. **MCCD Comment (2/25/20):** It appears that the maximum slope length has been exceeded for several sections of silt fence. Was not able to verify slope lengths for compost sock located on sheet ES-22 due to insufficient upslope contours. Please revise.

JMT Response (3/24/20): *The calculations and sizing of compost filter sock have been revised to ensure that the maximum slope lengths does not exceed the compost filter sock sizing noted. The calculations have been provided in the Erosion and Sediment Control Narrative, Appendix C.*

MCCD Comment (4/24/20): Was not able to verify the slope lengths going to proposed compost filter socks since adequate upslope contours did not appear to be provided.

JMT Response (5/18/20): *As discussed on our call, diversion compost filter socks have been added to the design to shorten the slope lengths to the CFS downstream end of the LOD and divert flow around the site.*

3. **MCCD Comment (2/25/20):** The ends of the proposed compost socks should point sufficiently upslope to create adequate pooling of runoff for the settling of sediment and to prevent end-around flows. For example, 18" socks should be pointed upslope at least 18"—24" upslope in elevation difference to ensure that end-around flows are avoided. Per the E&S Manual, pages 61 and 62, "The ends of sediment barriers should be turned upslope at 45 degrees to the main barrier alignment on a distance sufficient to elevate the bottom of the barrier ends to the elevation of the top of the barrier at the lowest point. This is to prevent runoff from flowing around the barrier rather than through it. As with other sediment barriers, filter socks should be placed parallel to contour with both ends of the sock extended upslope at a 45-degree angle to the rest of the sock to prevent end-abounds."

JMT Response (3/24/20): *The ends of the proposed compost filter sock have been revised to point sufficiently upstream to allow for settling of sediment and to prevent end-around flows.*

MCCD Comment (4/24/20): End of proposed compost sock do not appear to be sufficiently pointed upslope.

JMT Response (5/18/20): *All compost filter sock segments have been revised to extend at least 24" and 32" upslope in elevation difference for a 24" and 32" compost filter sock, respectively.*

4. **MCCD Comment (2/25/20):** Compost sock/silt fence should not be shown within areas of proposed grading/disturbance.

JMT Response (3/24/20): *Compost filter sock has been revised to the outer edge of the limit of disturbance boundary, however in some cases, could not be shown fully beyond the limit of disturbance in efforts to stay within the project's easement boundary.*

MCCD Comment (4/24/20): Appears to still be areas were compost filter sock is shown through grading. For example, compost socks CFS-1 and CFS-2.

JMT Response (5/18/20): *As discussed to our call, the plan notes that contractor is to restore the disturbed area to match existing contours and drainage patterns. Previously, DEP requested that the plans trace the existing contours within the LOD to graphically reflect the regrading effort for the contractor. In order meet both requests, we have expanded the LOD in some area and placed CFS to be shown outside of the proposed grades.*

5. **MCCD Comment (2/25/20):** Please verify that compost sock CFS-4 is adequate to control wash water from the construction entrance.

JMT Response (5/18/20): *A compost filter sock is proposed downstream of the rock construction entrance wash rack. Contractor will be responsible for removing sediment as needed.*

Sheet ES-23 Comments

1. **MCCD Comment (2/25/20):** The ends of the proposed compost socks should point sufficiently upslope to create adequate pooling of runoff for the settling of sediment and to prevent end-around flows. For example, 18" socks should be pointed upslope at least 18"—24" upslope in elevation difference to ensure that end-around flows are avoided. Per the E&S Manual, pages 61 and 62, "The ends of sediment barriers should be turned upslope at 45 degrees to the main barrier alignment on a distance sufficient to elevate the bottom of the barrier ends to the elevation of the top of the barrier at the lowest point. This is to prevent runoff from flowing around the barrier rather than through it. As with other sediment barriers, filter socks should be placed parallel to contour with both ends of the sock extended upslope at a 45-degree angle to the rest of the sock to prevent end-abounds."

JMT Response (3/24/20): *The ends of the proposed compost filter sock have been revised to point sufficiently upstream to allow for settling of sediment and to prevent end-around flows.*

MCCD Comment (4/24/20): End of proposed compost sock do not appear to be sufficiently pointed upslope.

JMT Response (5/18/20): *All compost filter sock segments have been revised to extend at least 12" and 24" upslope in elevation difference for a 12" and 24" compost filter sock, respectively.*

2. **MCCD Comment (2/25/20):** There appears to be proposed grading to the southern end of the compost filter sock CFS-1 that is not being controlled by an E&S BMP. Please revise.

JMT Response (5/18/20): *CFS-1 was expanded to ensure that all proposed grading is being controlled by the compost filter sock.*

Overall Miscellaneous

1. **MCCD Comment (4/24/20):** Please note that a resubmission fee is necessary. Please refer to the MCCD E&S Plan Review Application for further information.

JMT Response (3/24/20): *A resubmission fee of \$227.50 (50% of original submission fee) is included.*

2. **MCCD Comment (4/24/20):** Please take note that MCCD will not accept "piecemeal" plan revisions. All revisions must be submitted as part of a complete application package unless specifically otherwise agreed and allowed by the reviewer. Additionally, "piecemeal" applications could lead to the project being withdrawn if the complete set is not submitted by the due date.

JMT Response (3/24/20): *Noted.*

Technical Deficiencies from DEP:

1. **DEP Comment (2/25/20):** For each Managed Release Concept (MRC) Best Management Practices (BMP) proposed for the above-referenced project, the professional engineer should document and

demonstrate that the specific MRC BMP design addresses each and all of the 13 MRC design standards listed in the MRC document dated May 15, 2019 (the design standards start on page 4 of the MRC document), in narrative form with cross references to the specific location in the Post Construction Stormwater Management (PCSM) report. We have attached a courtesy template for the applicant's use to address the 13 MRC design standards. For each number or justification used to demonstrate that the design addresses the 13 design standards, the engineer will need to provide a specific page number in their PCSM report that reflects that number or justification. We need this information to verify that the numbers or justification are correct as modeled or calculated. Also, all hydrographs need to include the supporting and input data for hydrology and hydraulics associated with the hydrograph. Please make sure to include or account for any basin bypass areas in the design standards. This documentation/demonstration should be provided in the respective section or appendix of the PCSM Report for each MRC BMP. [25 Pa. Code § 102.11(b)]

JMT Response (3/24/20): *A courtesy template has been submitted to document and demonstrate that the specific MRC BMP design addresses each and all of the 13 MRC design standards listed in the MRC document dated May 15, 2019 (the design standards start on page 4 of the MRC document), in narrative form with cross references to the specific location in the Post Construction Stormwater Management (PCSM) report. This is attached to this letter, and also included in Appendix D.2, Supporting Calculations, for Quakertown and Marcus Hook Compressor Stations.*

DEP Comment (4/24/20): Comment was partially addressed by the applicant/consultant.

For Design Standard 1 of the MRC BMP at Quakertown – Please explain why 0 cubic feet is acceptable for being removed by the underdrain. Please explain how the runoff from the 1.2-inch/2-hour storm from the contributing watershed, that the MRC is intended to treat, will be captured and managed by the MRC BMP, filtered through vegetated media, or treated and filtered to the extent practicable through the on-site undisturbed soils or other acceptable treatment systems.

JMT Response (5/18/20): *JMT has revised the documentation for Design Standard #1 to note that 1,811 CF is being removed by the underdrain and for the 1.2in/2-hr storm. As this is a non-vegetated underground MRC, the design requires pre and post treatment. The runoff from disturbed areas will be conveyed to a jellyfish membrane filtration device and treated for water quality then released to the subsurface BMP. Within the BMP, the runoff will be stored, treated, and slowly release to meet volume and peak rate criteria.*

For Design Standard 1 of the MRC BMP at Marcus Hook, please clarify the calculation and reporting of the evapotranspiration volume. This calculation does not seem to apply to the May 15, 2019 version of the MRC guidance document.

JMT Response (5/18/20): *At Marcus Hook, the evapotranspiration volume provided was 5,050 CF (30% soil void x (50% x 2 ft IWS depth) x 16,833 SF basin bottom.*

For Design Standard 2 of the MRC BMP at Quakertown - Please explain why the 2-inch/24-hour storm was used for this design standard. Depending on the explanation, please correct the design storm to analyze the outflow to be "1.2-inch/2-hour" (instead of 2-inch/24-hour). Further, it seems from the HydroCAD model that the outflow is 0.00 cubic feet per second (cfs) (instead of 0.01 cfs) for 1.2"/2-hour storm. Please verify and revise the responses in the "MRC – 13 Design Standards" document, or justify accordingly.

JMT Response (5/18/20): *The response to Design Standard #2 of the MRC BMP at Quakertown was revised to note the outflow for the 1.2"/2-hour storm, which equals 0.00 cfs.*

For Design Standard 2 of the MRC BMP at Marcus Hook – Please explain why the 2-inch/24-hour storm was used for this design standard. Depending on the explanation, please correct the design storm to analyze the outflow to be “1.2-inch/2-hour” (instead of 2-inch/24-hour). Further, it seems from the HydroCAD model that the outflow is 0.00 cfs (instead of 0.01 cfs) for the 1.2"/2-hour storm. Please verify and revise the responses in the “MRC – 13 Design Standards” document, or justify accordingly.

JMT Response (5/18/20): *The response to Design Standard #2 of the MRC BMP at Marcus Hook was revised to note the outflow for the 1.2"/2-hour storm, which equals 0.00 cfs.*

For the MRC BMPs, verify that the basin bypass areas are accounted for in the design standards. Please amend the responses in the MRC – 13 Design Standards document to include this verification. The net change in volume from the DEP Worksheet 4 needs to be managed at each site. For the MRC BMPs, the 1.2 inch from all equivalent impervious area and the 2-year/24-hour storm back to the one-year/24-hour storm needs to include the basin bypass. Please verify.

JMT Response (5/18/20): *The responses for Design Standard #4 was updated for both sites to clarify that the 2-yr/24-hr post development peak rate includes the outflow of the BMP and the bypass area. Therefore, the 2-yr/24-hr peak rate that is less than the one-year/24-hr storm includes the bypass area. In addition, the MRC basins manage and store the net change in the 2-hr/24-hr runoff volume from Worksheet 4, which is determined by calculating the storage volume beneath the lowest outlet orifice.*

The DEP Worksheet 12 numbers could not be verified without the updated DEP Worksheet 4s. Please provide updated copies of the DEP Worksheet 4 for Marcus Hook and Quakertown sites. Please note that the regulation for 20% of the existing impervious cover to be disturbed considered as meadow in good condition or better applies to Water Quality DEP Worksheet 12s as well as the runoff volume on DEP Worksheet 4. Please expand the PCSM BMP, revise the drainage area, or add additional Water Quality BMPs to account for the increase in NO₃. In addition, the DEP Worksheet 12 numbers are not matching up with Section VII in the PCSM narrative.

JMT Response (5/18/20): *All BMP worksheets are included in Appendix D.1 of the PCSM Report. Worksheet 4 and 12 have been revised to clearly note the existing areas to be considered as meadow. Based on revised calculations, and the addition of a jelly fish membrane filtration system at Transco Meter Station, the increase of NO₃ is being managed through the BMPs on-site. Refer to Appendix D.1 and the tables within Section VII.*

- DEP Comment (2/25/20):** Please demonstrate in the applicant’s response letter, the PSCM Narrative, and the PCSM Plan Drawings how the permittee and/or co-permittee will address all of the components of Title 25 Pa. Code § 102.8(n) for the restoration activities of the proposed earth disturbance activities for the areas to be restored as part of this ESCGP-3 permit application. Please note that the Site Restoration Schedule, that is located in the E&S Plan drawing set (General Notes Sheet 6 of 7), should also be located in the PCSM Plan drawing set since it is a PCSM BMP with Long-Term Operation and Maintenance requirements. (25 Pa. Code § 102.8(n))

JMT Response (3/24/20): *To best demonstrate how the applicant is to meet Title 25 Pa. Code § 102.8(n) to describe the project scope. There are 13 sites included with this permit application, 3-meter stations and 10 valve sites. This is comprised of 3 new valve sites and replacement of 7 existing valve sites.*

The meter stations (Marcus Hook, Transco, and Quakertown) proposes new buildings and paved areas. These sites provide stormwater management practice on each site to manage the increased volume runoff due to the revised land cover. These sites have been designed in accordance with DEP requirements for water quality, volume control, and rate control. The PCSM narrative has the complete analysis, infiltration testing results, and hydrologic modeling data for review. In addition, the PCSM design plans provide design details for the construction of the proposed BMP's on each site. Both the plans and narrative identify the long-term operation and maintenance requirements associated with these facilities. Finally, the applicant is abundantly aware of their long-term responsibilities as the selection of the BMP was discussed in great detail to ensure that the long term commitment was acceptable to the applicant.

The valve sites have no change in land cover from existing conditions and the applicant is to restore the disturbed areas to match the existing land cover and drainage patterns. The scope of work for each site is to access the valve site, replace the valve and segments of pipeline, backfill the excavated areas, place fencing, regrade the disturbed areas to maintain the existing drainage patterns, and restore the land cover (gravel or vegetation). The land cover on these existing valve sites is gravel with is to be replaced (in kind) and new sites will be restored to vegetated conditions. These sites have no increase in impervious land cover and it is not anticipated to negatively impact the watersheds drainage area. This is further defined on the PCSM and E&S plan notes in the "Site Restoration Schedule", PCSM 3 and E&S 6.

The design has given consideration on how to (1) preserve the integrity of stream channels and maintain and protect the physical, biological and chemical qualities of the receiving stream, (2) prevent an increase in the rate of stormwater runoff, (3) minimize any increase in stormwater runoff volume, (4) minimize impervious areas, (5) maximize the protection of existing drainage features and existing vegetation, (6) minimize land clearing and grading (7) minimize soil compaction, and (8) utilize other structural or nonstructural BMPs that prevent or minimize changes in stormwater runoff. The E&S and PCSM narratives and plans provide for ABACT control measures in special watersheds, structural stormwater management facilities on site with increased impervious land cover, maintaining tight workspaces to limit disturbance, and limiting impervious cover where feasible. Additional language has been added to the PCSM Narrative, Section V, to describe how the site restoration activities will satisfy the requirement set forth in Chapter 102.

DEP Comment (4/24/20): This comment was partially addressed by the applicant/consultant.

Please demonstrate in the applicant's response letter, the PCSM Narrative, and the PCSM Plan Drawings how the permittee and/or co-permittee will address each of the components (aka subsections) listed at 102.8(n) for the areas to be restored following 102.8(n) at part of this ESCGP-3 permit application. Please address subsections 102.8(b), (c), (e), (f), (h), (i), and (l) and when applicable, subsection (m) for areas to be restored following 102.8(n).

JMT Response (5/18/20): *Please find attached the Chapter 102.8.n compliance matrix for the project identifying where in the provided documentation that the permittee and/or co-permittee has addressed each subsection list in 102.8.n. In addition, this matrix, can be found on PCSM-5 and in the appendix of the PCSM narrative.*

3. **DEP Comment (2/25/20):** Regarding the Existing Conditions section of the completed DEP Worksheet 4 for this application, there are comments related to the regulation at Title 25 Pa. Code Chapter 102.8(g)(2)(i) and (ii). Please address the following in the PCSM Report [ESCGP-3 permit application worksheet and 25 Pa. Code § 102.8(g)(2)]:
 - a. For the Transco Meter Station site, please provide an explanation for the use of "woods" and "brush" cover and the associated CN values listed in the Existing Conditions section.

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- b. For the Marcus Hook Compressor Station site, please provide an explanation for the use of “gravel” and “impervious” cover and the associated CN values listed in the Existing Conditions section.
 - c. For the Quakertown Compressor Station site, please provide an explanation for the use of “impervious,” “gravel,” and “brush” cover and the associated CA values listed in the Existing Conditions section.

JMT Response (3/24/20): *Per Chapter 102.8(g)(2), the Existing Conditions 2-yr, 24-hr runoff volume was revised to ensure runoff calculations within Worksheet 4 are using 20% of impervious and gravel as meadow and all non-forested areas, which includes brush areas, were also considered meadow in existing conditions. This is noted in PCSM Report, Section VII, and calculations are in App D.1. Please note the Existing Conditions and Demolition Plans for the Transco, Marcus Hook and Quakertown sites notes the existing land covers. Furthermore, the drainage area maps detail the land covers as well.*

DEP Comment (4/24/20): This comment was partially addressed by the applicant/consultant. Please provide updated copies of the DEP Worksheet 4 for the Transco and Marcus Hook sites. Please clarify the existing pervious, non-forested areas considered as meadow in good condition or its equivalent, and 20% of the existing impervious areas to be disturbed considered as meadow in good condition or better on DEP Worksheet 4 for each of the three sites (Marcus Hook, Transco, and Quakertown sites).

JMT Response (5/18/20): *Updated copies of the DEP Worksheet 4 for all sites are provided in this submission. Worksheet 4 was updated to provide additional clarification for the existing areas to be considered meadow.*

- 4. **DEP Comment (2/25/20):** At the Transco Meter Station site, it is recommended to apply an appropriate factor of safety to the field measured infiltration rates to determine a recommended design infiltration rate, following Appendix C of the PA BMP Manual. Please revise the PCSM computations accordingly to include an appropriate factor of safety, or please provide adequate justification. [PA BMP Manual Appendix C]

JMT Response (3/24/20): *Using a factor of safety of 2, an infiltration testing rate of 0.13 in/hr was used in the design calculations. HydroCAD computations within Appendix D.2 reflect this revision.*

DEP Comment (4/24/20): This comment was partially addressed by the applicant/consultant. With the addition of the factor of safety of 2 and using 0.13 inch/hour for the design infiltration rate, please demonstrate by referencing specific calculations and numbers in the HydroCAD Model (Appendix D.2), the ESCGP-3 NOI/Application Section H.e Summary Table for Transco Meter Station Site (PDF page 32 of 58), and DEP Worksheet 4 that the PCSM/SR Plan meets the standard design criteria from sections 102.8(g)(2) and (3) and the Stormwater BMP Manual. In addition, for the Transco Meter Station Site, the HydroCAD Model (Appendix D.2), the ESCGP-3 NOI/Application Section H.e Summary Table, and DEP Worksheets 4 and 5 should be verified to make sure each of these documents are consistent with each other.

JMT Response (5/18/20): *Please note that the PCSM design has been modified from the previous submission. All documents listed in the comment above have been updated for consistency. For the Transco Meter Station calculations, refer to Worksheet 4, 5, and 10 (PCSM Report, Appendix B.1) and the NOI Section H.E, which demonstrates that the BMPs manage the net change for storms up to and including the 2-year/24-hour storm event when compared to preconstruction runoff volume and water quality.*

Hydrocad results (see Pages 6, 18, 30 & 42), found in PCSM narrative Appendix D.2, demonstrate that the BMP sufficiently manages the net change in peak rate for the 2-, 10-, 50-, and 100-year/24-hour storm events in a manner not to exceed preconstruction rates.

Please amend the PCSM narrative to better address the Basin Bypass drainage areas for the Transco site and how the Basin bypass area is managed for net increase runoff volume, water quality, and peak rate.

JMT Response (5/18/20): *As indicated on the design plans, the bypass swale, CH-2, was revised to a vegetated swale that was extend around the perimeter of the site. CH-2 will outlet to a jelly fish membrane filtration device that will have water quality benefits. The drainage area from the bypass swale is included in the pre to post analysis for volume net increase and peak rate, see Worksheet 4 (PCSM Report, Appendix B.1) and for volume increase and hydrograph output (Pages 1, 6, 18, 30 & 42), found in PCSM Narrative Appendix D.2, for peak rate analysis.*

The DEP Water Quality Worksheet 12 numbers could not be verified without the updated DEP Worksheet 4 for the Transco site. Please note that the regulation for 20% of the existing impervious areas to be disturbed considered as meadow in good condition or better applies to the DEP Water Quality Worksheet 12s as well as the runoff volume on DEP Worksheet 4. Please expand the PCSM BMP, revise the drainage area, or add additional Water Quality BMPs to account for the increase in Nitrate as noted in the PCSM narrative. Please note that the DEP Worksheet 12 numbers are not matching up with Section VII in the PSCM narrative.

JMT Response (5/18/20): *To meet the water quality design criteria, the design was revised to provide a vegetated swale, reduced limits of gravel areas for vegetated cover, soil amendments, and the inclusion of WQ device. Through the employment of these BMP's the design was able to meet the 90% management of disturbed areas, see PCSM plans. The BMP worksheets 4, 5, and 10 are included in Appendix B.1. As noted, the regulation for 20% of the existing impervious areas to be considered as meadow in good condition or better was applied to the worksheet 4.*

Please provide the calculations for the drawdown time for the infiltration basin using the design infiltration rate, verifying that the basin completely drains between 24 and 72 hours after the end of the design storm (per the recommendations of Chapter 3 of the PCSM Manual). The volume used for this calculation should correspond to the runoff volume increase calculated in DEP Worksheet 4.

JMT Response (5/18/20): *As noted above, the design at Transco was revised to meet the drain down time and water quality criteria. To meet the design criteria, the basin footprint was increased as well as including several BMP's to reduce the volume increase that would be required to be managed by the subsurface system. By implementing these design changes, the drain down time was achieved within 72 hours after the design storm.*

5. **DEP Comment (2/25/20):** For the Off-site Discharge Analyses provided for this ESCGP-3 permit application, please follow the Frequently Asked Questions (FAQ) - Chapter 102 Off-Site Discharges of Stormwater to Non-Surface Waters dated January 2, 2019. In the applicant's response, please document the changes that were made to address the items listed in the FAQ document. The FAQ document can be found on DEP's website at:
<https://www.dep.pa.gov/Business/Water/CleanWater/StormwaterMgmt/Stormwater%20Construction/Pages/E-S%20Resources.aspx> [ESCGP-3 permit application and 102.4(c)]

JMT Response (3/24/20): *The PCSM and E&S Narratives were updated to include an off-site discharge analysis for the existing swales at Marcus Hook and Transco, see PCSM Appendix D.3. The analysis*

within the narrative notes the resulting reduction in rate and volume. The following revisions were completed as part of this submission in response to the FAQ guidance:

- *Per FAQ #3, the appendix includes a separate exhibit detailing the soil types, flow path, and adjacent property owners. The exhibits illustrate that the flow path meet an unnamed tributary of Naaman's Creek (per eMaps).*
- *Per FAQ #5, JMT has provided additional calculations to demonstrate stable flow at the existing swales.*
- *Per FAQ #6, the flow does enter a MS4 sewer system prior to reaching a surface water however there is no increase in rate or volume and does not require consent from the MS4 permittee.*

DEP Comment (4/24/20): This comment was partially addressed by the applicant/consultant. In addition to DCCD's remaining comments as listed above, DEP has the following comments:

From FAQ #3: "On the Erosion and Sediment Control (E&S) and the PCSM Plan drawings, identify all properties and property owners that will or may receive stormwater discharges from the project site until discharges reach surface waters. Identify the flow path from discharge point to the confluence with a surface water." Please identify these items on the E&S and the PCSM Plan drawings. Please note that the flow path is somewhat difficult to identify from the contour lines for these sites; therefore, photographs are recommended to supplement the identification of the flow path from the point source (i.e., BMP outlet, channel, storm sewer, etc.) until the confluence with the receiving surface water for these sites. In addition, identify the soil types, erodibility factors and vegetative cover of the flow path on the E&S and the PCSM Plan drawings.

From FAQ #3: In the written narrative portion of the E&S and PCSM Plans, provide an analysis that demonstrates that the proposed volume and peak rate of stormwater discharging to the flow path will avoid, minimize, or mitigate accelerated erosion or sedimentation for storm events up to and including the 10-year/24-hour storm. The calculations should be consistent with the Erosion and Sediment Pollution Control Program Manual and the Pennsylvania Stormwater Best Management Practices Manual." Please provide a narrative that discusses the calculations and the results of the calculations. Please include separate segments of the flow path with different cross-sectional area, longitudinal slope, soil types, erodibility factors, vegetative cover, etc.

JMT Response (5/18/20): *Based on the review of property ownership, only Marcus Hook has offsite discharge. Adelphia Gateway LLC, owns the entire Transco site parcel including the wetlands area.*

To address FAQ#3- On the Marcus Hook PCSM and E&S plans, we have identified the flow path, property owners, soil types, and land cover. Based on the field observations, surface waters were identified on the downstream side of the existing (2) 18" culverts, see plans and photos for verification. In addition, we have provided a narrative and channel calculations to verify stability, see PCSM Narrative Section X and Appendix D.3.

From FAQ #5: "If the PCSM Plan reduces the post-construction stormwater runoff rate to the preconstruction rate, is that a sufficient demonstration for preventing accelerated erosion?"

A demonstration of meeting pre-construction runoff rates would not be sufficient where postconstruction runoff is concentrated in comparison to pre-construction conditions.

EXAMPLE 5.A – The pre-development flow rate is 10 cfs, spread across an area that is 100-ft. wide in a shallow concentrated flow condition. The post-construction flow rate from the PCSM BMP's outlet is 8 cfs (for a reduction to the flow rate). However, the post-construction flow width will be narrowed down to an area that is only 15-ft. wide, producing a more concentrated flow condition. The off-site discharge analysis should evaluate the 15-ft. wide flow area to ensure that it is a stable flow path."

Following FAQ #5, at Transco and Quakertown sites, it seems that there are sheet flow conditions from the area of the project site in the existing conditions that flow into adjacent wetlands. Please note that the word "wetlands" is included in the definition of "surface waters" at 102.1. The proposed conditions reflect a concentrated discharge from the PCSM BMP. This proposed concentrated discharge may need to be spread out to discharge to the same wetlands to mimic existing conditions. This needs to be addressed by the applicant.

JMT Response (5/18/20): *Based on the review of property ownership, only Marcus Hook has offsite discharge. Adelphia Gateway LLC, owns the entire Transco site parcel including the wetlands area. Regardless, at the Transco site, the design provides for a level spreader to maintain sheet flow to the wetlands similar to the existing drainage pattern, see PCSM narrative Appendix D for calculations. Please note that a level spreader was not provided on the Quakertown site as the outfall is adjacent to the wetland area and adding a level spreader would require disturbing the wetlands.*

From FAQ #6: If stormwater discharges will enter a municipal separate storm sewer system (MS4) or a combined sewer system with combined sewer overflows (CSOs), and there will be an increase in runoff volume or peak rate, the applicant must provide written consent from the MS4 or CSO permittee before a permit under Chapter 102 can be issued or general permit coverage authorized. This is applicable until the runoff reaches the receiving surface water." Please address any MS4s and/or CSOs for the entire flow path from the point source (i.e., BMP outlet, channel, storm sewer, etc.) until the confluence with the receiving surface water for these sites.

JMT Response (5/18/20): *Based on the review of property ownership, Adelphia Gateway LLC, owns the entire Transco site parcel including the wetlands area. There are no stormwater discharges that enter a municipal separate sewer system (MS4) or combined sewer.*

If you have any questions or need further information, please do not hesitate to contact me at 215-496-4780 or smathew@jmt.com.

Very truly yours,

JOHNSON, MIRMIRAN & THOMPSON, INC.



Shiny M. Mathew, P.E.
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AH/sm

Enclosures

Cc: Keith Edmonds, NJR
Andrew Westhoven, NJR
Willie Keterson, HGA
Gretchen Schatschneider, Bucks County Conservation District
Christian Strohmaier, Chester County Conservation District
Ed Magargee, Delaware County Conservation District
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ADELPHIA GATEWAY PROJECT , LLC
102.8 Compliance Matrix

Code	Description	Documentation	
		Plans	Narrative
102.8.b	General PCSM Planning and Design		
1	Preserve the integrity of stream channels and maintain and protect the physical, biological and chemical qualities of the receiving stream.	ES- 10-26	PCSM Narrative, Section II, VI
2	Prevent an increase in the rate of stormwater runoff.	ES 10 -26, PCSM 6-16, note PCSM-3 provides details regarding the site restoration operations.	PCSM Narrative, Section VIII and IX.
3	Minimize any increase in stormwater runoff volume.		
4	Minimize impervious areas.	ES- 10-26	PCSM Narrative, Section II, VI
5	Maximize the protection of existing drainage features and existing vegetation.		
6	Minimize land clearing and grading.		
7	Minimize soil compaction.		
8	Utilize other structural or nonstructural BMPs that prevent or minimize changes in stormwater runoff.	ES 10 -26, PCSM 6-16, note PCSM-3 provides details regarding the site restoration operations.	PCSM Narrative Section VIII and IX.
102.8.c	Consistency with E&S Plan		
	The PCSM Plan shall be planned, designed and implemented to be consistent with the E&S Plan under § 102.4(b) (relating to erosion and sediment control requirements).	Adelphia Gateway Project PCSM Plans & Erosion and Sediment Control Plans, 55 sheets total.	

ADELPHIA GATEWAY PROJECT , LLC
102.8 Compliance Matrix

Code	Description	Documentation	
		Plans	Narrative
102.8.e	PCSM Plan preparer requirements		
	PCSM Plan preparer requirements		PCSM narrative, Section II
102.8.f	PCSM Plan Content		
1	The existing topographic features of the project site and the immediate surrounding area.	ES 10-26 & PCSM 6-16.	
2	The types, depth, slope, locations and limitations of the soils and geologic formations.	ES 10-26 & PCSM, 6-16, PCSM-1 and ES-3	PCSM Narrative Section III
3	The characteristics of the project site, including the past, present and proposed land uses and the proposed alteration to the project site.		PCSM Narrative, Section IV.
4	An identification of the net change in volume and rate of stormwater from preconstruction hydrology to post construction hydrology for the entire project site and each drainage area		PCSM Narrative, Section VIII and IX.
5	An identification of the location of surface waters of this Commonwealth, which may receive runoff within or from the project site and their classification under Chapter 93 (relating to water quality standards).	ES 10-26	PCSM Narrative, Section V.
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.		PCSM Narrative, Section VI
7	A sequence of PCSM BMP implementation or installation in relation to earth disturbance activities of the project site and a schedule of inspections for critical stages of PCSM BMP installation.	PCSM 1-3	PCSM Narrative, Section XI
8	Supporting calculations.		PCS, Narrative, Appendix C & D
9	Plan drawings.	PCSM 1-16	
10	A long-term operation and maintenance schedule, which provides for inspection of PCSM BMPs, including the repair, replacement, or other routine maintenance of the PCSM BMPs to ensure proper function and operation. The program must provide for completion of a written report documenting each inspection and all BMP repair and maintenance activities and how access to the PCSM BMPs will be provided.	PCSM 2, 4, & 5	PCSM Narrative, Section XVI

ADELPHIA GATEWAY PROJECT , LLC
102.8 Compliance Matrix

Code	Description	Documentation	
		Plans	Narrative
11	Procedures which ensure that the proper measures for recycling or disposal of materials associated with or from the PCSM BMPs are in accordance with Department laws, regulations and requirements.	PCSM-2	
12	An identification of naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM BMPs are operational and development of a management plan to avoid or minimize potential pollution and its impacts.	PCSM-1	PCSM Narrative, Section XII
13	An identification of potential thermal impacts from post construction stormwater to surface waters of this Commonwealth including BMPs to avoid, minimize or mitigate potential pollution from thermal impacts.		PCSM Narrative, Section XIII
14	A riparian forest buffer management plan when required under § 102.14 (relating to riparian buffer requirements).		PCSM Narrative, Section XIV
15	Additional information requested by the Department.		
102.8.h	PCSM implementation for special protection waters		
1	Evaluate and include nondischarge alternatives in the PCSM Plan unless a person demonstrates that nondischarge alternatives do not exist for the project.	ES 10-26	PCSM Narrative, Section XV
2	If the person makes the demonstration in paragraph (1) that nondischarge alternatives do not exist for the project, the PCSM Plan must include ABACT, except as provided in § 93.4c(b)(1)(iii).		
3	For purposes of this chapter, nondischarge alternatives and ABACT and their design standards are listed in the Pennsylvania Stormwater Best Management Practices Manual Commonwealth of Pennsylvania, Department of Environmental Protection, No. 363-0300-002 (December 2006), as amended and updated.		
102.8.i	Complaint or site inspection		
	Upon complaint or site inspection, the Department or conservation district may require that the PCSM Plan be submitted for review and approval to ensure compliance with this chapter.	ES-2	
102.8.l	Final Certification		
1	The permittee shall retain a copy of the record drawings as a part of the approved PCSM Plan.		
2	The permittee shall provide a copy of the record drawings as a part of the approved PCSM Plan to the person identified in this section as being responsible for the long-term operation and maintenance of the PCSM BMPs.		

ADELPHIA GATEWAY PROJECT , LLC
102.8 Compliance Matrix

Code	Description	Documentation	
		Plans	Narrative
102.8.m	PCSM long-term operation and maintenance requirements		
1	The permittee or co-permittee shall be responsible for long-term operation and maintenance of PCSM BMPs unless a different person is identified in the notice of termination and has agreed to long-term operation and maintenance of PCSM BMPs.	PCSM 5	PCSM Narrative, Section XVI
2	For any property containing a PCSM BMP, the permittee or co-permittee shall record an instrument with the recorder of deeds which will assure disclosure of the PCSM BMP and the related obligations in the ordinary course of a title search of the subject property. The recorded instrument must identify the PCSM BMP, provide for necessary access related to long-term operation and maintenance for PCSM BMPs and provide notice that the responsibility for long-term operation and maintenance of the PCSM BMP is a covenant that runs with the land that is binding upon and enforceable by subsequent grantees, and provide proof of filing with the notice of termination under § 102.7(b)(5) (relating to permit termination).	PCSM 5	PCSM Narrative, Section XVI
3	For Commonwealth owned property, a covenant that runs with the land is not required until the transfer of the land containing a PCSM BMP occurs. Upon transfer of the Commonwealth-owned property containing a PCSM BMP, the deed must comply with this subsection.	NA	NA
4	The person responsible for performing long-term operation and maintenance may enter into an agreement with another person including a conservation district, nonprofit organization, municipality, authority, private corporation or other person, to transfer the responsibility for PCSM BMPs or to perform long-term operation and maintenance and provide notice thereof to the Department.	PCSM 5	PCSM Narrative, Section XVI
5	A permittee or co-permittee that fails to transfer long-term operation and maintenance of the PCSM BMP or otherwise fails to comply with this requirement shall remain jointly and severally responsible with the landowner for long-term operation and maintenance of the PCSM BMPs located on the property.	PCSM 5	PCSM Narrative, Section XVI

ADELPHIA GATEWAY PROJECT , LLC
102.8 Compliance Matrix

Code	Description	Documentation	
		Plans	Narrative
102.8.n.	Regulated activities that require site restoration or reclamation, and small earth disturbance activities.		
	<p>The portion of a site reclamation or restoration plan that identifies PCSM BMPs to manage stormwater from oil and gas activities or mining activities permitted in accordance with Chapters 78 and 86—90; timber harvesting activities; pipelines; other similar utility infrastructure; Department permitted activities involving less than 1 acre of earth disturbance; or abandoned mine land reclamation activities, that require compliance with this chapter, may be used to satisfy the requirements of this section if the PCSM, reclamation or restoration plan meets the requirements of subsections (b), (c), (e), (f), (h), (i) and (l) and, when applicable, subsection (m).</p>	ES 10-26, see above for noted subsections	