



Transcontinental Gas Pipe Line Company, LLC

Response to Technical Deficiency
Pennsylvania Department of Environmental Protection

Atlantic Sunrise Project

May 3, 2017

DEP Application No. E36-947, APS No. 880147
Conestoga, Drumore, Manor, Martic, Mount Joy,
Rapho, Pequea, Eden, East Donegal, and West
Hempfield Townships and Borough of Mount Joy,
Lancaster County

Table 1
Transco's Responses to DEP February 24, 2017 Technical Deficiencies Letter

Technical Deficiency Number	Technical Deficiency Description	Response
1	<p>Original Comment #1: Upon further evaluation by the Department and in accordance with the Chapter 105 Regulations, 25 Pa. Code§ 105.13(e), complete delineation of impacts to wetlands, streams and floodways needs to be provided for the Department to perform the required environmental review of the application and make a proper permit decision. The impacts to wetlands, streams and flood ways cannot be based on remote sensing. The Chapter 105 Regulations require a complete demarcation of the floodplains and regulated waters of this Commonwealth on the site. This requirement will not be waived under 25 Pa. Code§ 105.13(k), as remote sensing or national wetland inventory data alone may not identify all wetlands, streams and floodways present, nor does it adequately identify any unique characteristics of the wetlands, or the functions that they provide. As such, the remotely sensed impacts will require in-field verification, and all relevant portions of the application will need to be revised prior to making a permit decision. 25 Pa. Code § 105.13(e).</p> <p>The Department's review of Attachment H-2 revealed that some site plans and reported impacts were based on remote sensing information that is insufficient for meeting Chapter 105 regulatory criteria. The following Attachment H-2 plan sheets, which may not be all inclusive, were found to have site plans based on remote sensing:</p> <ul style="list-style-type: none"> • Plan Sheet 24-1600-70-09-A/M-0405-0.57-01 {WW-RS-120006} • Plan Sheet 24-1600-70-09-A/M-0405-1.13-01 {WW-RS-120005} • Plan Sheet 24-1600-70-20-A/11.11-01 {W-RS-1001 & W-RS-1003} 	<p>100 percent of the Project footprint has been field delineated. Lancaster County impacts are included within Attachment E-2 (PA DEP Impact Tables) and Attachment L-5, Appendix 1, (Comprehensive Environmental Evaluation) for the entire Project. New and revised information is provided as bold, italicized text, while avoided impacts are shown as bold, strikethrough text. The new field delineated features that are impacted by the Project are included within the County-Specific Impact Mapping in Attachment H-2.</p> <ul style="list-style-type: none"> • Plan Sheet 24-1600-70-09-A/M-0405-0.57-01 {WW-RS-120006} - RS feature has been replaced with Field Stream Feature WW-T81-001 • Plan Sheet 24-1600-70-09-A/M-0405-1.13-01 {WW-RS-120005} - This area has now been field surveyed and there is no jurisdictional Stream feature being impacted at this location. • Plan Sheet 24-1600-70-20-A/11.11-01 {W-RS-1001 & W-RS-1003} - This area has now been field surveyed and there is no jurisdictional wetland being impacted at this location.

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	<ul style="list-style-type: none"> • Plan Sheet 24-1600-70-09-A/11.13-01 {WW-RS-1001} • Plan Sheet 24-1600-70-09-A/11.69-01 {WW-RS-99105} • Plan Sheet 24-1600-70-09-A/11.98-01 {WW-RS-99107} • Plan Sheet 24-1600-70-09-A/M-0248-0.33-01 {WW-RS-1009} • Plan Sheet 24-1600-70-09-A/M-0396-0.17-01 {WW-RS-2008} • Plan Sheet 24-1600-70-20-A/M-0396-0.17-01 {WW-RS-2007} • Plan Sheet 24-1600-70-09-A/AR-LA-023.2-01 {WW-RS-99200} • Plan Sheet 24-1600-70-09-A/21.77-01 {WW-RS-2002} • Plan Sheet 24-1600-70-09-A/AR-LE-033.1-01 {WW-RS-4003} <p>Provide DEP a revised Attachment H that includes specific site plans, not remote-sensed, for each project water obstruction and encroachment activity where a temporary or permanent impact is proposed within regulated waters of this Commonwealth.</p>	<ul style="list-style-type: none"> • Plan Sheet 24-1600-70-09-A/11.13-01 {WW-RS-1001} - RS feature has been replaced with field-delineated stream WW-T81-1001 • Plan Sheet 24-1600-70-09-A/11.69-01 {WW-RS-99105} - RS feature has been replaced with field-delineated stream WW-T88-002 • Plan Sheet 24-1600-70-09-A/11.98-01 {WW-RS-99107} - This area is no longer a part of the project; therefore, no jurisdictional areas are impacted at this location. • Plan Sheet 24-1600-70-09-A/M-0248-0.33-01 {WW-RS-1009} - This area has now been field surveyed and there is no jurisdictional stream features being impacted at this location. • Plan Sheet 24-1600-70-09-A/M-0396-0.17-01 {WW-RS-2008} - RS feature has been replaced with field-delineated stream WW-T81-2001 • Plan Sheet 24-1600-70-20-A/M-0396-0.17-01 {W-RS-2007} - This area has now been field surveyed and there is no jurisdictional wetland feature being impacted at this location. • Plan Sheet 24-1600-70-09-A/AR-LA-023.2-01 {WW-RS-99200} - RS feature has been replaced with Field Stream

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		<p>Feature WW-T81-2002 which is no longer impacted by the Project</p> <ul style="list-style-type: none">• Plan Sheet 24-1600-70-09-A/21.77-01 {WW-RS-2002} - RS feature has been replaced with Field Stream Feature WW-T81-2003, which is included on the above-referenced drawing.• Plan Sheet 24-1600-70-09-A/AR-LE-033.1-01 {WW-RS-4003} - RS feature has been replaced with Field Stream Feature WW-T88-003, which has an associated floodway impact.

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2	<p>Original Comment #4: Provide agency clearance letters and copies of correspondence from the Pennsylvania Fish and Boat Commission (PFBC), Pennsylvania Game Commission (PGC), Pennsylvania Department of Conservation and Natural Resources (PDCNR), and U.S. Fish and Wildlife Service (USFWS) for the proposed pipeline, including no-access parcels, and the mitigation area, and identify any mitigation measures that are recommended or required. Please be advised that additional deficiencies may be generated pending responses from resource agencies. 25 Pa. Code § 105.14(b)(4).</p> <p>Provide clearance from USFWS for the Northern Long-Eared Bat, Indiana Bat, and Bog Turtle. As PGC deferred comments on bat species to USFWS, clearance from USFWS will complete the clearance for PGC.</p> <p>Letters from jurisdictional agencies (PFBC, DCNR, PGC, and USFWS) were omitted from the November 2016 submission that had been included with the original 2015 submission. Include all letters from the jurisdictional agencies that identify the potential impacts to threatened/endangered species in addition to the clearance letters for each species. These letters are required in lieu of a PNDI search receipt due to the size of the project.</p> <p>November 22, 2016 resubmission materials state in Attachment G2 that, "Project LOD in Lancaster County from Mileposts 4.8 to 5.1 have not yet been surveyed for state-listed plants. Transco will survey this area in the fall of 2016." Provide the Department with the findings of Transco's fall plant survey for this project area.</p>	<p>Attachment G-1 of the revised application provides an updated summary of the Project correspondence status for the Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish & Boat Commission, Pennsylvania Game Commission, and United States Fish and Wildlife Service. Complete copies of correspondence with the above-referenced agencies are provided in Attachments G-2 through G-5, respectively.</p> <p>Transco completed surveys for state-listed plants in Lancaster County from Mileposts 4.8 to 5.1 in 2016. The crane fly orchid, a rare species, was documented in this area. The identified crane fly orchids will be transplanted outside of the LOD prior to construction, as approved by the PA DCNR, as documented in the agency correspondence within Attachment G-2.</p>

<p>3</p>	<p>Original Comment #5: Provide clearance or approval from the Pennsylvania Historical and Museum Commission (PHMC) for cultural, archeological, and historic resources for the proposed water obstructions and encroachments, mitigation area, and areas necessary to construct the water obstructions and encroachments. 25 Pa. Code §§ 105.13(e)(1)(x), 105.14(b)(4) and 105.14(b)(5).</p> <p>November 22, 2016 technical deficiency response states that, "Transco is coordinating with PHMC and FERC to develop a Memorandum of Agreement (MOA) to address Section 106 compliance and will include procedures for assessing impacts for inaccessible properties, and protocols for handling chance finds." Provide the Department with the status of this MOA and any impact assessments conducted or planned for any inaccessible properties.</p>	<p>The Project land requirements are currently 100% surveyed for archaeological and aboveground resources. With the 100% completion of the field survey, and receipt of overall Project No Effect determination from the PHMC pending their receipt and review of Addendum 6 in April 2017, a MOA for the Project does not appear to be necessary to complete Section 106 consultation. A final report, Addendum 6, covering the last remaining portions of the Phase I survey was submitted to the PHMC for review on April 21, 2017.</p> <p>An updated status summary of the coordination with the PHMC is contained within Attachment D-1 and copies of the respective correspondence are included within Attachment D-2.</p> <p>Finally, Unanticipated Discovery Plans for construction in Pennsylvania have been previously approved by the PHMC and submitted to the Federal Energy Regulatory Commission (FERC). Copies of the "Pennsylvania Unanticipated Cultural and Human Remains Discovery Plans" and "Unanticipated Discovery Plan for Paleontological Resources Plan" are included as Attachments 4 and 5 within the Environmental Construction Plan, as provided within Attachment M of the revised application.</p>
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4	<p>Original Comment #10: Public water supplies are located within in the vicinity of the proposed pipeline. The application states that there will not be any impacts the water supplies as a result of the pipeline. Provide the supporting documentation that led to this conclusion. Additionally, we recommend that you contact any public water supplier in order to help determine if your project will impact the public water supplier and subsequently provide documentation of interactions, through correspondence, with each supplier. Ensure all Public water supplies in the vicinity of the proposed pipeline are identified within the location map. Enclosed are instructions on how to utilize DEP's eMapPA to identify public water supplies in the vicinity of your project. 25 Pa. Code §§ 105.13(e)(1)(ii), 105.13(e)(1)(x) and 105.14(b)(5).</p> <p>The Department's review of Attachment H-2 found that neither project location maps nor site plans identified specific watercourses where instream and downstream uses could be affected by proposed pipeline water obstruction and encroachment activities. To evaluate whether any proposed pipeline activity poses potential adverse impact to instream and downstream surface water users, provide the Department with those identified instream and downstream uses reported in Attachment L, and include any unidentified uses on revised Attachment H-2 project location maps.</p>	<p>All of the public water supply sources identified from the PADEP file review are located outside of the proposed Project footprint and beyond the limits of the detailed. Chapter 105 Impact Drawings. Therefore, in response to this technical deficiency, the revised application includes the location of public water supplies on the Topographical Project Location Key Maps (see Attachment H-2).</p> <p>In addition, Transco prepared Notification Plans through consultation with the public water supplier operators which contain measures to be implemented in the event of a spill during construction. A summary of Transco's consultation with the public water supply operators is provided in Attachment L-5.</p>

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5	<p>Original Comment #12: Revise the application to provide a planting plan to re-establish woody vegetation within the temporary construction right-of-way (ROW) in riparian and wetland areas that are currently forested or dominated by woody species, as was previously proposed and implemented by Williams Transco on a similar project. 25 Pa. Code §§ 105.13(e)(1)(ix) and 105.16(d).</p> <p>See Comment #30 below and revise application materials as appropriate.</p>	<p>Please reference the response to Comment #30 below.</p>
6	<p>Original Comment #13: The functions and values provided by shrub species more closely match those provided by forested areas than are provided by emergent areas. Revise the plans to incorporate the replanting of woody species in forested/ scrub shrub areas in the permanent ROW. 25 Pa. Code § 105.13(e)(1)(ix).</p> <p>See Comment #30 below and revise application materials as appropriate.</p>	<p>Please see the response to Comment #30 below.</p>

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7	<p>Original Comment #15: Revise the alternatives analysis to show the 600-foot survey consider and demonstrate that impacts to waters of the Commonwealth within the corridor have been minimized to the maximum extent practicable. The demonstration should address each crossing individually. 25 Pa. Code §§ 105.13(e)(1)(viii) and 105.18(a).</p> <p>Address the alternative analysis concerns referenced in the July 29, 2016 technical deficiency letter for any inaccessible or remotely sensed areas and include with application materials for review.</p>	<p>As indicated within Comment Response #1, this technical deficiency response includes information from the most-recent field surveys, which brings the total field-delineated Project footprint to 100 percent within Lancaster County. The revised application does not include any remote-sensed resources.</p> <p>As a result of incorporating the additional field-surveyed resources, the revised application includes updates throughout to account for the inclusion of the impacts associated with the preferred route, as well as avoidance and minimization efforts undertaken for each resource. Please refer to the updates contained within Attachments E, H, L, M, and P, which demonstrate that the preferred route minimizes wetland impacts to the maximum extent practicable.</p>

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8	<p>Original Comment #18: An Aids to Navigation (ATON) plan may be required for this project. Contact Thomas Burrell with the Pennsylvania Fish and Boat Commission at 717.705.7838 regarding ATON requirements, and provide a copy of the ATON approval to DEP. 25 Pa. Code § 105.14(b)(2).</p> <p>The Department's review for evaluating impact to navigable public waterways found Pennsylvania Fish and Boat Commission approvals of an Aids to Navigation (ATON) plans at four Lancaster County locations are forthcoming.</p> <p>Please provide the Pennsylvania Fish and Boat Commission Aids to Navigation (ATON) plan and approval for inclusion with your Joint Permit application materials.</p>	<p>A copy of the ATON plans submitted for the Project, as well as the respective PFBC approval letter, dated January 20, 2017, are included as Attachment L-5, Appendix L-6 within the revised application.</p> <p>Transco is currently coordinating with the PFBC for their review of the list of new stream crossings. The list of new stream crossings was submitted to the PFBC on April 26, 2017 for their review and determination of additional ATONs. The list provided to PFBC included five stream crossings and one water withdrawal location in Lancaster County. Should additional ATONs be required for the revised Project footprint, Transco will provide the revised ATON application(s) and PFBC approval upon receipt.</p>

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9	<p>Original Comment #21: The application states in numerous locations that the criteria used during routing surveys included "minimizing effects at any single wetland crossing to 1 acre or less whenever practicable". The Department is unable to determine why the 1 acre threshold was utilized when Chapter 105 Regulations require minimizing impacts to wetlands to the maximum extent practicable. Revise the application to demonstrate that the routings avoid and minimize wetland impacts to the maximum extent practicable. Transco should assess the applicability of this deficiency to the other counties that are part of this project. 25 Pa. Code §§ 105.13(e)(1)(vii) 105.18a.</p> <p>Address the alternative analysis concerns referenced in the July 29, 2016 technical deficiency letter for any inaccessible or remotely sensed areas and applicable areas identified in Comment# 29 below.</p>	<p>As indicated within Comment Response #1, this technical deficiency response includes information from the most-recent field surveys, which brings the total field-delineated Project footprint to 100 percent within Lancaster County. The revised application does not include any remote-sensed resources.</p> <p>As a result of incorporating the additional field-surveyed resources, the revised application includes updates throughout to account for the inclusion of the impacts associated with the preferred route, as well as avoidance and minimization efforts undertaken for each resource. Please refer to the updates contained within Attachments E, H, L, M, and P, which demonstrate that the preferred route minimizes wetland impacts to the maximum extent practicable.</p>

<p>10</p>	<p>Original Comment #22: According to the Hydrologic and Hydraulic Calculations for Waterbody Crossings (H&H) several waterbody crossings are to be crossed by a dam and pump method. Many of these crossings have excessive Peak Flows that could not be managed by pumping. Detail how these crossings will be stable and how the waterbodies will be successfully passed through or around the work area. Provide tables in the plan drawings depicting pump sizing and rate information to be used by contractors. 25 Pa. Code §§ 105.16 and 105.2(3).</p> <p>A comparative evaluation of the temporary watercourse impact incurred by specified pipeline installation method (e.g., Dam and Pump Stream Crossing (DPX)) to the potential adverse public safety impact posed by this pipeline installation method raised concern that the specified pipeline installation method posed significant adverse impact to public safety, 25 Pa. Code§ 105.16. Such an evaluation is required for each proposed water obstruction and encroachment activity to determine whether any aspect of the activity may pose a potential impact on health, safety, welfare, property and environment and to assure the proper, planning, design, construction, maintenance and monitoring of each water obstruction and encroachment in order to prevent unreasonable interference with water flow.</p> <p>For example, the Department comparatively reviewed temporary watercourse impacts relative to the specified pipeline installation method (i.e., Flume Stream Crossing (FX)) where specified in Attachment H-2 with projected flows reported in Attachment M, Hydrologic & Hydraulic Calculations for Waterbody crossings. Where pipeline crossing method FX was specified, the Department found no HY-8 report that would provide information such as water surface elevations (i.e., existing and proposed), overtopping characteristics and outlet velocities. Provide the Department with revisions that include, but are not limited to, hydrologic</p>	<p>Peak flow rates for streams are incorporated into most pipeline stream crossings utilizing a dam and pump (DPX) or flume crossing method (FX), with the exceptions being larger streams with excessive peak flow rates will be crossed during low-flow conditions using average daily flow as the flow rate. The primary stream crossing methods, either a dam and pump (DPX) or a flume crossing (FX), were selected based on peak flow and average daily flow rate. During construction, in the event low flow conditions are not achievable for DPX and FX, a secondary method may be employed using the cofferdam crossing (CD). Crossing methods are identified in Attachment H-2 (Chapter 105 Impact Drawings) and a discussion of crossing methods is included in Attachment L-5 (Proposed Impacts).</p> <p>The H&H report in Attachment M has been updated to reflect pipeline crossing methods using peak and average daily flow rates. HY-8 modeling analysis with water surface elevations is included in the H&H report in Attachment M for flume crossings (FX).</p>
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	and hydraulic analysis. The Department further requests revised Hydrologic and Hydraulic Calculations for Waterbody crossings that include HY-8 or equally accepted hydraulic modeling reports for all pipeline crossings where FX is specified.	

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11	<p>Original Comment #23: The H&H report, Peak Flow Calculations depict culvert pipe diameter and number of culvert pipes for some crossings but not all. Some crossings state "Cross When No Storm Forecasted" in the Flume Diameter and Number of Pipes columns. Provide crossing types and sizing data for these crossings. 25 Pa. Code §§ 105.161 and 105.2(3).</p> <p>To assure that proper planning, design, construction, maintenance and monitoring of each proposed water obstruction and encroachment will prevent unreasonable interference with water flow and to protect navigation, an evaluation of a hydraulic and hydraulic analysis for design of each water obstruction is required.</p> <p>The Department's review of Attachment M, Hydrologic and Hydraulic Calculations for Waterbody found a few watercourses where water obstructions (i.e., culverts, cofferdams, bridges, etc.) were being proposed where the drainage area was less than 1-square mile. It seemed USGS StreamSTATS likely was used as the hydrologic method address the Chapter 105 regulatory criteria related to hydrologic and hydrologic analysis. USGS StreamSTATS is only an accepted hydrologic method to use for water obstruction design in drainage areas that are over one (1)-square mile. Provide DEP revised water obstruction designs (i.e., culverts, cofferdams, bridges, etc.) that utilized acceptable hydrologic and hydraulic methodologies, where the watercourse drainage is less than 1-square mile and USGS StreamSTATS was used.</p>	<p>USGS StreamSTATS has been used only to delineate these drainage areas under one (1) square mile; however, the H&H report in Attachment M has been updated with calculations using HydroCAD SCS as the primary method for drainage areas less than one (1) square mile.</p>

<p>12</p>	<p>Original Comment #24: In reviewing the plans, trench plugs are indicated to be installed at wetland/upland interfaces. Additional trench plugs may be necessary along the length of the crossing due to length and/or slope to maintain hydrology throughout the wetland. Please review and revise accordingly. Some additional guidance is available within the PA E&S Control BMP Manual. 25 Pa. Code §§ 105.13(e) and 105.18a(b)(2).</p> <p>Evaluation of proposed wetland encroachment revealed trench plugs were proposed as being installed in pipeline trenches at wetland and upland interfaces. Please review identified and demarcated wetlands, and ultimately any wetlands originally identified by remote sensing, to reassure wetland trench plugs are being installed at wetland and upland interfaces. Installation of wetland trench plugs, similar to trench breaker for erosion and sedimentation control, should also be installed relative to slopes as well as at wetland and upland interfaces.</p> <p>An example where the Department's review found that wetland trench plugs should be installed considering slopes, as well as at wetland and upland interfaces is located in Attachment H-2, Plan Sheet 24-1600-70-09-A/7,15-01 (e.g., Wetland W-T10-101C). At Wetland W-T10-101C and all other wetlands identified and demarcated, the Department requests trench plug be installed at a frequency based on slope, as well as at wetland and upland interfaces to ensure permanent adverse environmental impact to these wetlands are avoided or reduced to the maximum extent possible. Provide the Department with a revised Attachment H-2 that reflects installation of additional trench plugs, where applicable, on proposed pipeline cross-section/profile drawings.</p>	<p>100 percent of the Project footprint has been field delineated and the revised application does not include any remote-sensed resources. Trench plugs are indicated in the pipeline profiles based on slope and at wetland and upland interfaces per field delineated wetlands within the Erosion and Sediment Control Plans located in Attachment M, as well as the Chapter 105 Impact Maps located in Attachment H-2.</p>
<p>13</p>	<p>Original Comment #25 refers to details regarding several access roads. 25 Pa. Code § 105.13(e)(1).</p>	<p>The plans for the Resource-Specific Impact Mapping (Attachment H-2) Sheet</p>

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	<p>Access road AR-LA-03, which crosses a watercourse identified as {WW-T25-4002. Shells Run}, also poses other regulated waters (i.e., floodway/floodplain) impact warranting evaluation.</p> <p>The Department compared Attachment H-2 Sheet 24-1600-70-09-A/AR-LA-30-01 with E&S Plan Sheet 24-1600-70-28-A/LL113_9-AR-LE-033.1. The Department's comparison revealed that the demarcation of regulated waters (i.e., floodway) differed. This difference in floodway demarcation suggested impacts, albeit temporary, reported on Plan Sheet 24-1600-70-09-A/AR-LA-30-01 (Attachment H-2) may not be valid. The Department requests that regulated waters (i.e., floodplains, floodways, watercourses, wetlands, etc.) being shown on each plan sheet in Attachment H-2 be validated, identified and demarcated. The Department further requests that all designed floodplain and floodway water obstructions or encroachments (e.g., typical access road cross-sections - E&S Plan Sheet 24-1600-70- 28-A/LL113-9-AR-LA) be included in a revised Attachment H-2 where each provided plan sheet specifies what typical road section will be implemented within the demarcated floodplain or floodway.</p>	<p>24-1600-70-09-A/AR-LA-30-01 has been revised to show the same limit of floodway boundary as shown on the Erosion and Sediment Control Plans (Attachment M). Access roads that include road improvements through the floodway are included within Attachment H-2, which also include the typical sections for those improvements. The Chapter 105 Impact Table (Attachment E-2) has been revised to include notes to clarify the extent of access road modifications within floodways.</p>

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14	<p>Original Comment #27 refers to impact information to several streams and wetlands. 25 Pa. Code §§ 105.11(a), 105.13(e)(1)(x), 105.151 and 105.161.</p> <p>Any proposed repair, replacement or substantial modification to a water obstruction, which pose an impact to regulated waters, must be evaluated by the Department respective to all applicable Chapter 105 Regulations criteria.</p> <p>An example where the Department's review found water obstruction activity was being proposed, but failed to provide appropriate technical information relative to applicable Chapter 105 regulatory criteria, is located in Attachment H-2 Plan Sheet 24-1600-70-09-A/M-0184-0.85-01. Review revealed removal and replacement (i.e., in-kind) of an existing 18-inch diameter culvert in an identified watercourse WW-T10- 004 (Tucquan Creek) was being proposed. The Department found that this replacement culvert needed to be designed in accordance with accepted engineering practice to meet Chapter 105 Regulations criteria established in Subchapter C Bridges and Culverts. The Department requests that the applicant re-evaluate all such proposed project water obstruction activities to reassure similar situations were not overlooked. Provide the Department with further technical information, required by Subchapter C, for evaluation where any such proposed construction, repair or replacement activity (i.e., bridge or culvert) is being proposed.</p>	<p>The 18-inch diameter culvert at identified watercourse WW-T10-004 on County-Specific Impact Map 24-1600-70-09-A/M-0184-0.85-01 within Attachment H-2 is no longer proposed to be repaired and or replaced, and the notes to replace/repair the culvert have been removed from the drawing. The Project does not include any planned repairs or replacements of existing culverts associated with Waters of the Commonwealth which would require authorization under Chapter 105.</p>

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15	<p>Original Comment #28 refers to the reductions in Limits of Disturbance in regulated waters in order to minimize impacts. 25 Pa. Code §§ 105.13(e)(1)(i)(A) and 105.13(e)(vii).</p> <p>Applicant review of project impacts to regulated waters of this Commonwealth is sought to reassure identified and demarcated impacts are avoided or minimized to the maximum extent possible, particularly any project impacts where only remotely sensed impacts were identified and demarcated.</p> <p>Provide the Department with revisions to Attachment H-2 site plans, cross-sectional views, impact tables, specified Best Management Practices, and General Notes to clearly demonstrate avoidance and minimization measures were implemented to the maximum extent possible, especially those impacts defined by the Department as being permanent. This comment is related to and can be redressed through Comment #1 (i.e., remote sensing).</p>	<p>As indicated within Comment Response #1, this technical deficiency response includes information from the most-recent field surveys, which brings the total field-delineated Project footprint to 100 percent within Lancaster County. The revised application does not include any remote-sensed resources.</p> <p>Attachment H-2 includes new Chapter 105 impact mapping for the newly-delineated resources resulting from completion of survey efforts in Lancaster County.</p> <p>Attachment P, Appendix P-1 includes information on the avoidance and minimization measures utilized at each of the newly-surveyed resources.</p>

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16	<p>Original Comment #31 related to Access Road AR-LA-010.2 shown in Attachment H-2 Plan Sheet 24-1600-70-09-A/8.00-01 (i.e., Sheet 3 of3) depicting and reporting floodplain and/or floodway impact. 25 Pa. Code § 105.13(e)(1)(i).</p> <p>This comment is related to and can be redressed through Comment #1 (i.e. remote sensing) and Comment #13 (i.e., typical road section detail) above.</p>	<p>As indicated within Comment Response #1, this technical deficiency response includes information from the most-recent field surveys, which brings the total field-delineated Project footprint to 100 percent within Lancaster County. The revised application does not include any remote-sensed resources.</p> <p>As discussed in the response to Comment #13, access roads that include road improvements through the floodway are included within Attachment H-2, which also include the typical sections for those improvements. The Chapter 105 Impact Table (Attachment E-2) has been revised to include notes to clarify the extent of access road modifications within floodways.</p>

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17	<p>Original Comment #40: Indicate the site location on the Topographical Project Location Key Map and provide an Impact Map for the Hydrostatic Test Water Withdrawal Area LA- 163 as shown on ES Drawing 24-1600-70-28-A/LL113 9-CS-LA-163 and for the Hydrostatic Test Water Withdrawal Area LA-164 as shown on ES Drawing 24-1600-70-28-MLL113 9-CS-LA164. Revise the application documents as necessary to reflect any additional impacts. 25 Pa. Code § 105.13(e)(1)(x).</p> <p>Applicant response that location maps for proposed water intake and ancillary structures within regulated waters at four (4) locations (i.e., Chiques Creek, Conestoga River and Pequea Creek) were provided in Attachment H-2 Plan Sheet 24- 1600-70-09-A/23.90-01) was confirmed. However, site plan depicting floodplain and floodway for each proposed water intake and ancillary structures shown in Attachment L-5 varied from Attachment H-2.</p> <p>These deficiencies are related to and can be redressed through Comment #27.</p>	<p>Revised Hydrotest Plans and Metering Plans are provided within Attachment L-5, Appendices 5 and 6, respectively. These plans have been revised to include the same floodplain and floodway boundaries, as shown on the County Specific Impact Mapping within Attachment H-2 and the Erosion and Sediment Control Plans within Attachment M.</p>

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18	<p>Original Comment #47 relates to impact mapping. 25 Pa. Code §§ 105.13(e)(1)(viii) and, 105.16(a).</p> <p>The Department's review of Attachment H-2 Plan Sheet 24-1600-70-09-A/34.02-01 confirmed Applicant revisions of the site depict a reduced Limit of Disturbance (LOD) width of seventy-five feet (75').</p> <p>The Department's comparative evaluation of Attachment H-2 Plan Sheet 24-1600-70- 09-A/34.02-01 with E&S Plan Sheet 24-1660-70-28-A/ILL113_9 (i.e., Sheet 31 of34) failed to find an adequate demonstration that adverse effects to health, safety, welfare or property outweighed the proposed watercourse impacts (i.e., unnamed tributary, Little Chiques Creek {WW-T31-3301}) by not routing the pipeline perpendicular to the watercourse. If an adverse effect to health, safety, welfare or property has been pointed by the landowner to the Applicant, provide the Department with a clear and concise demonstration (i.e., elaboration of the adverse effects) that proposed watercourse impacts are unavoidable to ensure protection of health, safety, welfare and property.</p>	<p>As documented in the Resource-Specific Avoidance and Minimization Measures (Attachment P, Appendix P-1) of the revised application, Transco has adjusted the route to cross Little Chiques Creek (WW-T31-3301) at a perpendicular angle.</p>

Technical Deficiency Number	Technical Deficiency Description	Response
19	<p>Original Comment #49: Provide a typical plan showing the crossing layout. The Department finds it unclear where the dam and pump by-pass will be located in relation to the Bridge Equipment Crossing (BEC) and where the BEC will be located in relation to the pipeline. 25 Pa. Code § 105.13(e)(1).</p> <p>The Department’s review of Best Management Practices and Quantities Plan Set (i.e., relative to Chapter 102 Regulations criteria, 25 Pa. Code§ 102.1, et seq. (Chapter 102 Regulations)) found revised pipeline installation (e.g., DPX, FX, Bored Waterbody Crossing (WBX.1), and construction crossing methods (e.g., BEC, MAT.1, MAT.3, etc.) but it is not clear how these BMPs interface.</p> <p>These deficiencies are related to and can be addressed through Comment #25 below.</p>	<p>The BMP detail plan sheets are included in the revised TD#2 submittal in Attachment M. BMP details are provided for the specific crossing methods for all stream and wetland crossing typicals during construction. As indicated in the BMP details, the Bridge Equipment Crossing (BEC) is interfaced with DPX and FX for streams. The primary method for equipment crossing for wetlands is WEC interfaced with WCC.1 or WCC.3 as indicated in the revised Chapters 105 and 102 submittal documents.</p> <p>In addition, the County-Specific Impact Mapping within Attachment H-2 includes a copy of the Best Management Practices and Quantities Plan Set, which includes typical details for the BMPs to be utilized for stream and wetland crossings.</p>

Technical Deficiency Number	Technical Deficiency Description	Response
20	<p>Original Comment #52: Changes in proposed project impacts at various locations have occurred since initial application submission. Clearly explain what led to these changes for each location where increased impacts are now proposed and clearly explain why these impacts are necessary. In addition, clearly explain why some impacts have been lessened and explain why this can't occur at other locations. 25 Pa. Code §§ 105.13(e)(1)(viii) and 105.16(a).</p> <p>Applicant reevaluation of all proposed water obstruction and encroachment activities was sought as a reassurance avoidance and minimization of impacts to regulated waters was consistently implemented.</p> <p>This comment is also related to and can be addressed through Comment #1.</p>	<p>As indicated within Comment Response #1, this technical deficiency response includes information from the most-recent field surveys, which brings the total field-delineated Project footprint to 100 percent within Lancaster County. The revised application does not include any remote-sensed resources.</p> <p>Please refer to Attachment P, Appendix P-1, which includes the Resource-Specific Avoidance and Minimization Measures implemented for the Project. The revised, above-referenced document includes all newly-delineated resources within the impact avoidance and minimization evaluation.</p>
21	<p>Original Comment #55: Specific to the Permittee Responsible Mitigation Plan. 25 Pa. Code §§ 105.13(e)(1)(ix), 105.20a and 105.21(a)(1).</p> <p>The Department's reviewer could not locate Figure 9 and Appendix F as referenced in applicant's deficiency response. Provide reference to these items specifically in your application or re-submit materials as necessary.</p>	<p>Please refer to the Permittee Responsible Mitigation Plan, which is included within Attachment Q-2 of the revised application. Figure 9 and Appendix F are included within the above-referenced, revised Permittee Responsible Mitigation Plan.</p>

Technical Deficiency Number	Technical Deficiency Description	Response
22	<p>Original Comment #61 relates to the water withdrawals. 25 Pa. Code § 105.13(e)(1).</p> <p>The Department's review confirmed mapping, site plans, and cross-sectional views of the four proposed water intake and ancillary structures needed for pipeline hydrostatic testing were incorporated into Attachment L-5.</p> <p>This comment is related to and can be addressed through Comment #27 and Comment #17 above.</p>	<p>Revised Hydrotest Plans and Metering Plans are provided within Attachment L-5, Appendices 5 and 6, respectively. These plans have been revised match the County Specific Impact Mapping within Attachment H-2 and the Erosion and Sediment Control Plans within Attachment M.</p>
23	<p>Original Comment #69: Identify and show the location of the "cultural resource sites" mentioned in the discussion of Alternative 12. Additionally, clearly explain why additional impacts to Waters of the Commonwealth are warranted. 25 Pa. Code § 105.13(e)(1)(viii).</p> <p>The Department's reviewer could not locate Alternative 12 as referenced in deficiency materials. Provide reference to this item specifically in your application or re-submit materials as necessary.</p>	<p>Attachment P-1 includes a discussion and comparison of Alternative 12 with the certificated route. This discussion can be found under Section 7.4 of the aforementioned Attachment.</p>

Technical Deficiency Number	Technical Deficiency Description	Response
24	<p>Original Comment #82: Revise Enclosures C and Enclosure D to assess the condition of, and impacts to forested and scrub shrub riparian areas and the habitat, water quality, and other impacts on watercourses for each watercourse crossing. In general, the Department recommends evaluating the riparian areas from the top of bank landward one hundred feet (100') and if the area utilized is less than one hundred feet (100'), justification should be given as to why. The application should be revised to replant the vegetation lost in both permanent and temporary ROW and workspaces. Alternatively, where it cannot be replaced and provided permanent protection, provide details on why it cannot be replaced and provide compensatory mitigation for the impacts and discuss the impacts to the watercourses in the Environmental Assessment, including water quality impacts. 25 Pa. Code §§ 105.13(e)(1)(x), 105.14(b)(4), 105.14(b) (11), 105.14(b)(12), 105.14(b)(14), 105.15(a), 105.15(a)(1), 105.15(b) and 105.16(d).</p> <p>See Comment #30 below and revise application materials as appropriate.</p>	<p>Please reference the response to Comment #30 below.</p>

Technical Deficiency Number	Technical Deficiency Description	Response
25	<p>Proposed water obstruction and encroachment activities related to pipeline installation in regulated waters found in Attachment H-2 referenced only a single utility line installation method, temporary construction crossing method, and associated impacts related to those single methods. All potential temporary and permanent project impacts, to the extent practical, must be shown and reported. 25 Pa. Code § 105.13(e)(1)(x).</p> <p>An example where the Department's review of Attachment H-2 found all potential impacts of regulated waters were neither considered nor reported by the identification of only a single pipeline installation method, temporary construction crossing method, and temporary construction crossing method is Plan Sheet 24-1600-70-09-A/M-0248-0.16-01. General Notes on Plan Sheet 24-1600-70-09-A/M-0248-0.16-01 solely listed Flume (FX) as the pipeline installation method and Bridge (BEC) as the temporary construction method. To ensure all potential impacts to regulated waters are evaluated and approved under Chapter 105 regulation criteria, provide the Department with a revised Attachment H-2 that includes primary, secondary and even tertiary pipeline installation methods (e.g., Cofferdam Stream Crossing (CD), DPX, FX, etc.), temporary construction crossing methods (e.g., BEC, MAT.1, MAT.3. etc.), and streambank restorative methods (e.g., RSS, SBR, etc.). Further provide the Department with a revision of each Attachment H-2 impact table to report worst case scenario regulated waters impact should the secondary or tertiary method need to be implemented.</p>	<p>The Chapter 105 Impact Mapping in Attachment H-2 of the revised application includes changes identifying the primary and secondary crossing methods, as well as streambank stabilization methods, for each watercourse crossing. The secondary crossing method for all crossings within Lancaster County would utilize the same workspace as the primary crossing method. There are no tertiary crossing methods proposed for the Project.</p>

Technical Deficiency Number	Technical Deficiency Description	Response
26	<p>The Department's review confirmed revisions to the construction sequencing found in the E&S Plan (i.e., Chapter 102 Regulations criteria) and predominantly the use of construction crossing method (i.e., BEC). However, this BEC construction crossing design has no provisions to prevent sediment from falling into the watercourse. 25 Pa. Code § 105.13(g).</p> <p>Provide the Department with all revisions to plan view, cross-sectional view, detailed drawings and specifications for construction crossing method BEC for both Chapter 105 Regulations (i.e., Attachment H-2) and Chapter 102 Regulations (i.e., Best Management Practices and Quantities Plan Set) including a bridge design that includes a one-foot (1') high side rail, which is wrapped by a geo-textile. 25 Pa. Code § 105.13(g).</p>	<p>The revised application includes a revised Bridge Equipment Crossing (BEC) typical detail, which includes one-foot high side rails. Please refer to the BEC detail included within the Best Management Practices and Quantities Plan Set, as provided in Attachment M. This plan set is also provided in the back of the County Specific Impact Mapping (Attachment H-2).</p>

Technical Deficiency Number	Technical Deficiency Description	Response
27	<p>Site plans for all water obstruction and encroachment activities proposed for pipeline installation and ancillary construction activities, must include but not be limited to, specific plan view, cross-section view, detailed drawings, and specifications. 25 Pa. Code §§ 105.13(e)(1) and 105.301.</p> <p>An example where the Department's review found insufficient and inconsistent plan view, cross-section and detailed drawings along with insufficient specifications is Attachment H-2, Plan Sheet 24-1600-700-09-A/11.98-01. Review of Plan Sheet 24- 1600-700-09-A/11.98-01 revealed the proposed water intake and ancillary structure (i.e., water withdrawal- Conestoga River) correlated to an intake structure location map along with plan, cross-sectional, and detail drawings contained in Section L, Appendix 5, Plan A-8. Comparative evaluation of these two site plans revealed inconsistent demarcation of floodway and floodplain boundaries. Further review found that various plan view, cross-section view, detailed drawings and specifications contained in Attachment H-2, Section Attachment L, and Best Management Practices and Quantity Plan Sets led to a fragmented and less than conclusive evaluation for applicable Chapter 105 Regulations criteria. Provide the Department with proposed water intake and ancillary structure plan view, cross-sectional view, detailed drawings and specifications, whether site specific or typical, to be included in a revised Attachment H-2 for Chapter 105 Regulations criteria evaluation. 25 Pa. Code §§ 105.2, 105.13(e)(1) and 105.301.</p>	<p>Revised Hydrotest Plans and Metering Plans are provided within Attachment L-5, Appendices 5 and 6, respectively. These plans have been revised match the County Specific Impact Mapping within Attachment H-2 and the Erosion and Sediment Control Plans within Attachment M.</p>

Technical Deficiency Number	Technical Deficiency Description	Response
28	<p>The Department's review found project municipal notifications had been sent to Conestoga and Martic. Where project water obstruction and encroachment activities are being proposed in floodway areas delineated on FEMA maps (i.e., National Flood Insurance Program maps), provide application revisions that include return correspondence from those affected municipals commenting on their evaluation of a provided floodplain management analysis and whether that analysis is consistent with their respective floodplain management codes or ordinances. 25 Pa. Code § 105.13(e)(1)(vii).</p>	<p>As indicated within the PADEP's email correspondence on March 27, 2017, no further municipal correspondence is required, as long as the original notifications have been made. Please refer to Attachment O-1 for the original notifications, as well as proof of delivery.</p>
29	<p>Alternative pipeline locations and routings should be evaluated to avoid or minimize environmental impacts. Landowner pipeline placement preferences, as referenced in Attachment P, is not justification for greater environmental impacts. Re-evaluate pipeline co-location alternatives prioritizing environmental criteria. 25 Pa. Code § 105.13(e)(1)(viii).</p>	<p>The Resource-Specific Avoidance and Minimization Measures (Attachment P, Appendix P-1) has been updated to remove all references to landowner preferences related to pipeline routing and related avoidance and minimization of impacts to aquatic resources. In addition, Attachment P, Appendix P-1 provides documentation of specific measures to avoid or minimize impacts at each stream and wetland crossing.</p>

Technical Deficiency Number	Technical Deficiency Description	Response
30	<p>Activities proposed as mitigation for environmental impacts will be a permit requirement if included as part of your Joint Application submittal. Provide the Department with revisions ensuring all references to voluntary mitigation efforts as found in Attachment L and any other areas are removed throughout your revised application. 25 Pa. Code § 105.13(e)(1)(ix).</p>	<p>The revised application, including Transco’s Riparian Area Impact Assessment and Restoration Plans provided as Attachment L-5, Appendix L-2, has been updated to remove references to “voluntary replantings”. Transco further notes that riparian replantings are being proposed as a reestablishment measure.</p> <p>Proposed mitigation for Project-related impacts is defined within the “Compensatory Mitigation for Wetland Impacts” section of Attachment L-5 and is being conducted via off-site compensatory wetland mitigation. Additional detail is provided within the Mitigation Master Plan (Attachment Q-1) and Permittee Responsible Mitigation Plan (Attachment Q-2).</p>

Technical Deficiency Number	Technical Deficiency Description	Response
31	<p>Reference the Department's "Design Criteria for Wetlands Replacement" regarding mitigation area monitoring, frequency, and inspection report content. Wetland replacement areas must be monitored for a period of not less than five years with inspections conducted at a minimum of twice per year for the first three years and once per year thereafter. Provide the Department with revised application materials as needed to ensure all mitigation areas associated with your project, including wetland and riparian replanting, wetland enhancement, and wetland restoration areas meet these criteria. 25 Pa. Code § 105.20a(b).</p>	<p>The revised application includes revised versions of the Mitigation Master Plan (Attachment Q-1) and the Permittee Responsible Mitigation Plan (Attachment Q-2), both of which include reference to the PADEP's "Design Criteria for Wetlands Replacement", as well as the incorporation of monitoring period requirements specified therein.</p> <p>Monitoring of on-site restoration will be in accordance with Transco's Project-specific Wetland and Waterbody Crossing Construction and Mitigation Procedures as previously-provided within the Attachment 18 of the Environmental Construction Plan (Attachment M).</p> <p>As indicated in an email from the PADEP on March 27, 2017, monitoring of on-site replanting of riparian forest buffers beyond what was stated within the previous version of the application and included in the Riparian Area Impact Assessment and Restoration Plans, provided as Attachment L-5, Appendix L-2, will not be required by the PADEP.</p>