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September 12, 2016

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The Watershed Center

31 Titus Mill Road

Pennington, NJ 08534

609.737.3735

thewatershed.org

Honorable Norman Bay, Chair
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

RE: Docket CP15-558
PennEast Pipeline Project

Dear Chairman Bay:

I am attaching the Stonybrook Millstone Watershed Association's comments to the draft Environmental Impact Statement. I am also incorporating the comments submitted by the New Jersey Conservation Foundation and those comments submitted by Eastern Environmental Law Clinic on our behalf. Additionally, by reference herein, we are incorporating our scoping comments filed on February 27, 2015 in this matter under the pre-file docket.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Michael L. Pisauro, Jr.", is written over a white background.

Michael L. Pisauro, Jr.
Policy Director

The Stony Brook-Millstone Watershed Association (Watershed) is central New Jersey's first environmental group; the Watershed Association has worked to protect clean water and the natural environment in central New Jersey since 1949 through conservation, advocacy, science and education. We speak out for your water and environment, protect and restore sensitive habitats, test our waterways for pollution and inspire others to care for and protect the natural world. Our goal is to improve the health and quality of central New Jersey's water and sustain a network of protected habitats for wildlife and people. The Watershed covers 265-square miles in twenty-five towns in the central New Jersey region. A portion of the proposed PennEast pipeline negatively impacts this region.

For the reasons previously submitted in this docket and in the pre-filing document we are strongly opposed to the proposed PennEast Pipeline because of the irreparable harm the project would have on the region's rivers and streams, water quality, fish and wildlife, and numerous areas that have been preserved with millions of dollars of public and private funding.¹

Incomplete DEIS

In a letter submitted the docket on July 22, 2016, the Watershed submitted request to FERC that it withdraw the DEIS. This request was then followed by a more detailed letter submitted to the Docket on August 1st by Eastern Environmental Law Clinic on behalf of the Watershed and NJCF. As set forth in these letters, the DEIS must

¹ Please see Attached Resolution.

be withdrawn as it violates the National Environmental Policy Act (NEPA),² NEPA requires a “systematic, interdisciplinary approach which will insure the integrated use of natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man’s environment.”³ In short NEPA requires FERC to take a hard look at the impacts.⁴ To take such a “hard look,” agencies must first secure all of the relevant information necessary to evaluate environmental impacts and incorporate that information into the DEIS. CEQ regulations on unavailable information are clear. If the information is obtainable and relevant to the project, the agency must wait and obtain the information.⁵ Without having all of the available information the DEIS is incomplete and invalid.⁶

The DEIS is replete with requests that PennEast submit the data before the close of the public comment period or prior to construction. Even the Applicant has acknowledged that there is information outstanding. More detailed examples of the outstanding issues are in the Watershed’s letter dated July 22, 2016 Accession #: 20160722-5191 and a letter submitted on behalf of the Watershed and NJCF on August 1, 2016 Accession #:20160801-5122.

² 42 U.S.C. 4321, et seq.

³ 42 U.S.C. 4332.

⁴ *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989)

⁵ 40 C.F.R. 1502.22.

⁶ *Public Employees for Environmental Responsibility v. Hopper*, USCA CASE #14-5301 (D.C. Circuit 2016).

The DEIS is replete with requests for additional information to be submitted prior to the close of the public comment period or prior to construction of the project. PennEast submitted partial responses to these requests on August 31, 2016. This information has not been incorporated into the DEIS and the public is unable to review this material in the context of its impact on the DEIS analysis. Further, the submission provides the public and other agencies twelve days to review this new information, a time frame that is wholly inadequate.⁷ The DEIS is supposed to provide the public a meaningful opportunity to review the DEIS and provide comments which may inform the decision making process. Twelve days to review and comment on material that should have been included in the resource reports prior to the issuance of the DEIS is counter to NEPA's legal requirements.⁸

As the information requested in the DEIS is obtainable and is clearly relevant, it is inappropriate and inconsistent with NEPA for the DEIS to be released. The overarching goal of NEPA is to "insure that environmental information is available to public officials and citizens before decisions are made. . . [and] [t]he information must be of high quality."⁹ If the DEIS is based upon incomplete information, it is impossible for FERC to make decisions on the document and how can the public trust that FERC is undertaking its statutory responsibilities?

⁷ 40 C.F.R. 1506.6(a).

⁸ Sierra Nevada Forest Prot. Campaign v. Weingardt, 376 F.Supp. 2d. 984, 991 (E.D. Cal 2005).

⁹ 40 C.F.R. 1500.1(b).

Given the lack of information in many sections of the DEIS it is inappropriate for other agencies to rely on the DEIS and any FEIS as requested by FERC.

If the DEIS is not withdrawn at the very least FERC is obligated under NEPA to issue a revised DEIS.¹⁰ Under the CEQ NEPA regulations, “[i]f a draft statement is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft”¹¹ As set forth above and further elaborated below, the DEIS released on July 22nd is “so inadequate” that FERC, once all of the missing information is submitted, should prepare a revised DEIS.

2.0 Description of Proposed Action

Clearing and Grading:

The DEIS references that “stumps and brush would be chipped and spread in upland areas (... or within 50 feet of wetlands)”¹² This comment and others ignores the regulatory requirements of New Jersey’s Freshwater Protection Act and implementing regulations. In New Jersey, transition areas or buffers are a regulatory tool that “minimizes adverse impacts on the wetland or serves as an integral component of the wetlands ecosystem.”¹³ The width of the transition area is varied depending on

¹⁰ 40 C.F.R. 1502.9(a).

¹¹ Id.

¹² DEIS 2-6.

¹³ N.J.A.C. 7:7A-1.4 and N.J.A.C. 7:7A-2.5.

the classification of the wetland. The width of the transition area maybe up to 150 feet for exceptional resource value wetlands.¹⁴ The discharge of chips into the transition area would be a regulated activity.¹⁵ The DEIS should incorporate the standards of the appropriate regulatory program when it outlines permissible activities.

2.3.1.2 Special Construction Procedures – Horizontal Directional Drill

The DEIS notes that “PennEast **would** prepare site-specific plans” DEIS at 2-11. Without the submission of the actual plans it is impossible for the DEIS to conclude that any significant permanent adverse impact would be mitigated. This is explicitly clear where the DEIS notes that “certain impacts could occur” as well as when it requires “a contingency plan for crossing the waterbody or wetland in the event the HDD is unsuccessful.”¹⁶ Further, without the specific plans it is impossible for the DEIS, the public and the decision makers to evaluate the project and determine whether it should proceed.

3.0 Alternatives

3.1 No Action Alternative

¹⁴ N.J.A.C. 7:7A-2.5(d).

¹⁵ N.J.A.C. 7:7A-2.2 and 2.6.

¹⁶ Id.

The DEIS accepts, without analysis or fact checking, that “[i]f PennEast’s proposed facilities are not constructed, the Project shippers may need to obtain an equivalent supply of natural gas from new or existing pipeline systems.”¹⁷ In evaluating the No Action Alternative, FERC cannot accept the alleged project purpose at face value, especially as there has been significant and credible information submitted to the docket that the need for the project has been fabricated. In order for the DEIS to rule out the No Action Alternative, the DEIS must determine if in fact the alleged need is for new capacity or is, as has been submitted, merely reallocated existing contracts on existing pipelines to the proposed pipeline. Based upon the information submitted on the docket there is credible evidence that if the PennEast pipeline does not receive its Certificate of Public Convenience and Necessity, the project shippers will continue to utilize their current contracts on existing lines. A possibility that the DEIS acknowledges.¹⁸

Further, the DEIS does not discuss or acknowledge the multiple of docket submissions demonstrating the “alleged” need for new capacity does not exist. For example, the Skipping Stone Study submitted on March 11, 2016, Accession #20160311-5205 and others. The NEPA process requires FERC to take a hard look at the submitted

¹⁷ DEIS at 3-3.

¹⁸ DEIS 3-3.u

evidence.¹⁹ The failure to acknowledge this data and to discuss its implications is a failure of the DEIS.

3.2 & 3.3 System Alternatives and Route Alternatives and Variations

The DEIS discounts all alternatives for various superficial reasons. For example, the DEIS discounts a Columbia alternative because the “system would need to be expanded with new pipeline facilities nearly identical to the facilities proposed by PennEast.”²⁰ But a review of Figure 3.2-1 demonstrates that a shortened PennEast project would connect with Columbia. Connecting to Columbia then allows connections to Algonquin, Texas Eastern and while not shown on the figure, Transcontinental. This alternative appears to meet all of the major interconnects proposed by the preferred route. As this example demonstrates the alternative analysis contained the DEIS is superficial and inadequate to meet the rigors required by NEPA. All alternatives including routes alternatives and various should be explored in detail so that a reasoned comparison can performed in the EIS process.

As noted below, the DEIS should include a brief description of each project and a “detailed study of the alternatives.” This detailed study of the alternatives (system alternatives and route alternatives) should be more than a counting of environmental resources impacted but should discuss the function, value and quality of the resource

¹⁹ Marsh v. Oregon Natural Resources Council, 490 U.S. 310, 385 (1989).

²⁰ DEIS at 3-6.

and the impacts to those resources.”²¹ In short the discussion of alternatives should not be just a counting of acres, stream crossings, etc.

There is also no discussion in the route alternatives and variations the justification for the end point of the preferred route. Taking the DEIS and PennEast’s purpose at face value, it is to “interconnect with the Transcontinental Gas Pipeline.”²² The Transcontinental Gas Pipeline is an interstate pipeline that travels from the Gulf of Mexico through Pennsylvania and into New Jersey. There multiple points in Pennsylvania as well as further west in New Jersey where the pipeline could connect with the Transco line and minimize the length of the pipe and possible the environmental impacts. This alternative connection point(s) should have been examined in detail.

2.4 Construction Schedule and Workforce.

The DEIS notes that PennEast would like to perform tree clearing in the winter prior to construction. Further, according to the DEIS construction would take place in spring of 2017. Given that FERC’s Notice of the EIS does not anticipate a decision on the Certificate of Public Convenience until March 2016, this desired “schedule” does not

²¹ Region III letter.

²² DEIS at 3-1.

seem to be appropriate as it would allow tree clearing before the Certificate of Public Convenience and Necessity was issued. It would also be before a letter of interpretation and permits was submitted to the NJDEP and any permit decision was made. The DEIS should be revised to reflect the appropriate timeframe for all activities.

3.0 Alternatives

The DEIS has impermissibly defined the purpose as too narrow. According to PennEast their object is to reduce energy costs and to provide natural gas to New Jersey, Pennsylvania and surrounding states. First it is to be noted that PennEast's purpose has expanded since the original proposal.

4.1.7 Geotechnical Investigations for the Proposed HDD.

The DEIS notes that PennEast “would complete field investigations prior to final pipeline design. The purpose of the geotechnical investigations is to understand if the existing condition would be suitable to use the HDD method.” Without the geotechnical investigations it is impossible for the DEIS to determine that environmental impacts would be minimized because there is no actual data for the DEIS to rely on. PennEast’s use of desktop soils analysis does not compensate for a lack of geotechnical survey data, i.e. on site testing. The desktop soils information is general for the county and does not necessarily accurately reflect the conditions along the preferred route. In fact the online soil survey reports caution the user that onsite

investigations are required to determine and delineate actual soils.²³ Given the generalities in the desktop analysis, it is paramount to the NEPA process that the DEIS review actual facts based upon onsite geotechnical data. It is inappropriate for FERC to rely on data that is submitted after the final EIS is issued and the certificate is issued.

This outstanding data should be supplied prior the issuance of the final EIS. It is inappropriate to require the submission of the data after the final EIS is issued. CEQ regulations are clear that if the “information is obtainable and relevant to the project, the agency **must wait** and obtain the information.”²⁴ . The DEIS pointing out missing information and requesting that it be submitted sometime in the future is impermissible.

4.2.1.1. Pipeline Facilities

Compaction Potential

The DEIS speculates that “[m]any soils along the proposed pipeline segments have likely already been compacted due to past development.”²⁵ It is inappropriate for the DEIS to speculate in this manner. The applicant has the ability to obtain the required geotechnical studies so that the actual compaction levels and areas are delineated. Soil compaction increases the amount of runoff and decreases aquifer

²³ Customer Soil Resource Report for Somerset County, NJ, Natural Resources Conservation Service, Page 6 (Aug. 11, 2016).

²⁴ 40 C.F.R. 1502.22 (emphasis added)

²⁵ DEIS at 4-18.

recharge. It is important to delineate the actual impact of construction not only on currently compacted soils but the effects of the construction on uncompacted soils. As the M2 study in Hopewell Township noted, the region was at a tipping point with groundwater recharge.²⁶ Further compacting soils and reducing groundwater recharge could have significant impacts on a region that relies almost solely on aquifers for drinking water.

Further, the increase of runoff or nonpoint source water pollution is also problematic. Close to 98% of New Jersey's waters do not meet one or more of the water quality standards.²⁷ A significant portion of this impairment is the result of nonpoint source water pollution. The potential to increase runoff can only exacerbate this issue. A detailed analysis of the impacts of further compaction of the soils and the resulting increase in nonpoint source water pollution should be undertaken.

Revegetation Potential

As noted above water quality standards are not being met. Vegetated riparian zones are the best method to protect water quality. Removing vegetation along riparian zones will have further negative impacts on water quality. As the DEIS notes 67% of

²⁶ Evaluation of Groundwater Resources of Hopewell Township, M2 Associates Inc. (March 2, 2001)

²⁷ 2014 New Jersey Integrated Water Quality Assessment Report (Draft), New Jersey Department of Environmental Protection (Dec. 2015).

the route has soils with poor revegetative potential.²⁸ The DEIS must analysis the impacts of the failure of revegetation on water quality.

4.2.2 General Impacts and Mitigation

The DEIS notes that “[l]ocating the new pipeline adjacent to existing rights-of-way would limit new soil disturbance by allowing a portion of the construction workspace to overlap previously developed or disturbed soils and minimize land use change.”²⁹ While as a concept this is probably correct, it fails to acknowledge the age of the existing rights of way and the actual conditions of the rights of way. Rights of way that were constructed decades ago may have recovered to a degree so that the additional impacts from new construction may be as significant as a virgin territory. As EPA noted in its comments to the Atlantic Sunrise DEIS, a detailed analysis must be done to determine the quality, value and function of the resource impacted.³⁰

The DEIS concludes that “soil erosion would be minimized through proper implementation and maintenance of measures in the FERC Plan and E&SCP.”³¹ NEPA requires that the DEIS incorporate and utilize data. The DEIS does not cite to any study

²⁸ DEIS at 4-18.

²⁹ DEIS at 4-22

³⁰ Region III letter, *supra*.

³¹ DEIS at 4-23.

or analysis that the FERC Plan and E&SCP is effective. Reports submitted by NJCF on the Tennessee gas line³² details the failures of these mitigation measures.

4.2.2.4 Post-construction Revegetation

The DEIS calls for the use of biodegradable erosion control fabric or matting” on steep slopes. Has FERC analyzed the number of fauna that maybe become entangled in the erosion control fabric? What is the likely species involved? Are any species considered threatened, endangered or species of special concerned? What protocols are utilized to inspect the erosion control fabric and to release entangled species? What is the likely mortality rate of the impacted species?

4.3 Water Resources

4.3.1 Groundwater Resources

The DEIS notes that in New Jersey groundwater supplies “36 percent of the domestic public water and 16 percent of the private supply.”³³ While this may be accurate on a statewide basis, the area that the proposed pipeline will cross relies almost solely on groundwater for drinking water. Attached as Exhibit B is a map

³² NJCF letter dated Sept. 2, 2016 Accession: 20160902-5248.

³³ DEIS 4-26.

demonstrating areas that have a water purveyor. As can readily be seen is that a majority of the pipeline route is not through areas with a public water system but in fact relies on wells. In some case even areas highlighted on this map are on a community well instead of relying on surface water supplies. For example, Pennington Borough, Mercer County, while showing service from water purveyor is on a community well maintained by the municipality.

4.3.1.4 Wellhead and Aquifer Protection Areas

The DEIS notes that in New Jersey there are only two wellhead protection areas (WHPA) crossed by the pipeline.³⁴ A review of publically available data demonstrates there are 11 Wellhead Protection Area within 150 feet and 19 within 600 feet of the centerline of the pipe. The DEIS should provide a discussion of the potential impacts on water infiltration and contamination on these WHPAs.

4.3.1.5 Water Supply Wells

As noted above, the vast majority of the pipeline route in New Jersey is not supplied by “public” water but is supplied by private wells. A basic search through Environmental Resource Reports submitted by the various municipalities would inform the DEIS of this fact. Kingwood Township’s EIR explains that its drinking water supply

³⁴ DEIS ES-4.

comes “almost solely on individual water supply wells . . .”³⁵ Holland Township’s Natural Resource Inventory states “Holland Township relies exclusively on ground water.”³⁶ Hopewell Township’s ERI explains that the township “primarily rel[ies] on private wells.”³⁷ The DEIS concludes this section with the recommendation that prior to construction that PennEast should complete all necessary surveys³⁸ This approach, as has been set out numerous times, is contrary to NEPA and this approach does not provide FERC and the public the proper basis to review the impacts of this project. The data for existing wells exists. There is no discussion, as required by NEPA, regarding the unavailability or incompleteness of this data³⁹.

Under NEPA, the DEIS should discuss whether the information is unavailable or incomplete; why the information is relevant to the impacts on the environment; a summary of what is known; and the agency’s evaluation of the impacts.⁴⁰ There is no discussion, because this information is available. A search of the records at the various townships for records of well drilling permits. Under New Jersey law, all new wells require the driller to submit an “as built description.” Also any decommissioned wells require a report to the NJDEP.⁴¹ In addition to this data, since September 2002 any

³⁵ Kingwood ERI 2009 page 3

³⁶ Holland Township Natural Resources Inventor, 54 (March 2007)

³⁷ Hopewell Township ERI page 105 (May 2010)

³⁸ DEIS at 4-32.

³⁹ 40 C.F.R. 1502.22(b).

⁴⁰ Id.

⁴¹ N.J.A.C. 7:9D-1.1 et. seq.

residential real estate transaction required the testing of the drinking well on the property and submittal of data to NJDEP, and that data includes gps coordinates of either the wellhead or the front door of the residence.⁴² A review of municipal and NJDEP records should have resulted in the location of many of the wells that the DEIS is unaware. Given that this information can be obtained, NEPA requires that it was obtained prior to the development of the DEIS.⁴³

4.3.1.8 General Impacts and Mitigation for Groundwater Resources

The DEIS outlines that clearing vegetation may reduce infiltration as well as increase stormwater runoff and increase sedimentation.⁴⁴ There should be an analysis of the impacts of the decreased infiltration on groundwater supplies. There also should be an analysis on the increased sedimentation and stormwater runoff into the receiving waterbodies and the impact it may have on the attainment of water quality standards.

4.3.1.9 Conclusion

Given the lack of data and the requests that PennEast complete plans or data collection prior to construction, the DEIS' conclusion that there are no long term impacts is not supported by the data and is mere supposition at this point.

4.3.2 Surface Water Resources

⁴² N.J.A.C. 7:9E-1.1 et. seq.

⁴³ 40 C.F.R. 1502.22.

⁴⁴ DEIS at 4-34.

FW1 are to be maintained in their natural state and not subject to increases in runoff from anthropogenic activities.⁴⁵ In additional Category One (C-1) waters are protected from any measurable change.⁴⁶ Given the acknowledgement that the construction activities will lead to increase runoff and sedimentation, it is difficult to understand the DEIS's ultimate conclusion that this project could go forward without permanent impacts to water quality.

A finding of no permanent impacts belies the accepted science in this area. It is well documented that most types of forest/environmental disturbances, including those associated with natural gas development (land clearing, well pad construction, and associated construction, maintenance and transport infrastructure) significantly increase the suspended and benthic sediments delivered to receiving water bodies⁴⁷, even when BMPs are employed⁴⁸. Impacts on water quality due to the construction and maintenance of the unpaved roads and other infrastructure that support the building and maintenance of well pads and pipelines may equal, or even exceed, the impacts of

⁴⁵ N.J.A.C. 7:9B-1.4

⁴⁶ Id. It should be noted that measurable is defined to include calculable or predicted changes. Id.

⁴⁷ Meghan, W. F. 1984. In Road Effects and Impacts - Watershed, Forest transportation symposium; U.S. Department of Agriculture, Forest Service, Rocky Mountain Region: Casper, WY,; p 22.

; Williams, H. F. L.; Havens, D. L.; Banks, K. E.; Wachal, D. J. 2008. Fieldbased monitoring of sediment runoff from natural gas well sites in Denton County, Texas, USA. *Environ. Geol.* 55 (7), 1463-1471; Brittingham, M., Maloney, K., Farag, A., Harper, D., & Bowen, Z. (2014). Ecological Risks of Shale Oil and Gas Development to Wildlife, Aquatic Resources and their Habitats. *Environmental Science & Technology*, 48. 11034-11047.

⁴⁸ Adams, MB; Edwards, PJ; Ford, WM; Johnson, JB; Schuler, TM; Thomas-Van Gundy, M; and Wood, F. 2011. Effects of development of a natural gas well and associated pipeline on the natural and scientific resources of the Fernow Experimental Forest. USDA. U.S. Forest Service. General Technical Report NRS-76

the well pad's continuous operation when that infrastructure is close to receiving water⁴⁹. Moderate, but insignificant, impacts were conceded in the EIS, where it was inferred that the majority of stream crossings would be accomplished by dry-ditch methods, and that there would be no long-term impact to fish movement due to the depth at which the pipeline would be buried to prevent perching. However, multiple studies have shown that the sediment/siltation alone from the "flume or dam-and-pumps" methods to be used, as stated in the EIS, "to move water around the open trenches" is enough to interfere with the movements and physiology of sensitive fish species, such as Salmonids, Rainbow, and Brook Trout⁵⁰. Other work has shown that it may take years or decades for the sediment and/or its effects to be realized in sensitive downstream areas.⁵¹

⁴⁹ Ziegler, A. D.; Sutherland, R. A.; Giambelluca, T. W. 2000. Runoff generation and sediment production on unpaved roads, footpaths and agricultural land surfaces in northern Thailand. *Earth Surf. Processes Landforms*. 25, 519–534; Leslie Hopkinson, L; Mack, B; Streets, A. (2016) Initial study of potential surface water quality impacts of horizontal drilling in the Marcellus shale, *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 38:5, 652-660; Reid, L. M.; Dunne, T. 1984. Sediment production from forest road surfaces. *Water Resour. Res.*, 20 (11), 1753–1761.

⁵⁰ Reid, S., Stoklosar, S., Metikosh, S., & Evans, J. 2002. Effectiveness of isolated pipeline crossing techniques to mitigate sediment impacts on brook trout streams. *Water Quality Research Journal Of Canada*, 37(2), 473-488; Reid, S.M.; Isaac, G; Metikosh, S; Evans, J. 2003. Physiological response of rainbow trout to sediment released during open-cut pipeline water crossing construction. *WATER QUALITY RESEARCH JOURNAL OF CANADA*. 38. 3. p473-p481; Cott, P. A., Schein, A., Hanna, B. W., Johnston, T. A., MacDonald, D. D., & Gunn, J. M. 2015. Implications of linear developments on northern fishes. *Environmental Reviews*, 23(2), 177-190. doi:10.1139/er-2014-0075.

⁵¹ Gilbert, G. K. 1917. Hydraulic mining debris in the Sierra Nevada. US Geological Survey Professional Paper 105, Washington, DC, 154 pp.; Ames, L. A. 1991. Incision and morphologic evolution of an alluvial channel recovering from hydraulic mining sediment. *Geological Society of America Bulletin* 103:723–736; Benda, L., and T. Dunne. 1997. Stochastic forcing of sediment routing and sediment storage. *Water Resources Research*. 33(12):2865–2880.

Furthermore, it is historically well known that the effects of sedimentation on water quality and aquatic ecosystems go above and beyond blocking fish movements.⁵² These include physical destruction or smothering of plants/algae, their periphyton & egg masses, causing a reduction in primary and secondary production⁵³, i.e. stifling the base of the food chain; reduced feeding and reproduction of benthic macroinvertebrates and fish, the effects of which have already been shown to impact sensitive spawning species native to the PA and NJ streams that the PennEast pipeline will cross, e.g. Brook Trout⁵⁴; and in extreme cases, the extirpation of habitat and sensitive floral and faunal species.⁵⁵

There is no discussion in the DEIS about potential impacts from salinity. Salinity increases have been found to be related to development activities road and ROW construction in particular. These activities have been shown to disturb surface soil and rock formations in a manner that mobilizes subsurface salt into runoff water (which is already exacerbated by the same activity). This is enhanced further by

⁵² Brittingham, M., Maloney, K., Farag, A., Harper, D., & Bowen, Z. (2014). Ecological Risks of Shale Oil and Gas Development to Wildlife, Aquatic Resources and their Habitats. *Environmental Science & Technology*, 48, 11034-11047.

⁵³ Chutter, F. M. 1969. The effects of silt and sand on the invertebrate fauna of streams and rivers. *Hydrobiologia*. 34, 57-76.

⁵⁴ Reid, S., Stoklosar, S., Metikosh, S., & Evans, J. 2002. Effectiveness of isolated pipeline crossing techniques to mitigate sediment impacts on brook trout streams. *Water Quality Research Journal Of Canada*, 37(2), 473-488.

⁵⁵ Cordone, A. J.; Kelley, D. W. The influences of inorganic sediment on the aquatic life of streams. *Calif. Fish Game* 1961, 47, 189-228; (EBTJV) Conservation Strategy Work Group Eastern Brook Trout Joint Venture. 2005. Conserving the Eastern Brook Trout: An Overview of Status, Threats, and Trends. http://www.state.nj.us/dep/fgw/pdf/tic_cons_eastern_bkt.pdf

road/equipment/material de-icing methods during both construction and maintenance.⁵⁶

Our view on the importance of salinity with respect to water quality standards (WCQ) is changing, with studies showing that chlorine ion (Cl⁻) toxicity can occur in zooplankton at concentrations well below the USEPA water quality criterion⁵⁷. Further, while the focus of WCQs has been on Cl⁻, it's know that aquatic organism-specific water quality is not be based on the concentration of a single ion, but the cumulative concentration of all ions and their ratio.⁵⁸ Shifts in salt composition and/or concentration in the surface, ground, and river/stream water can impact drinking/agricultural water quality⁵⁹, result in complete shifts in community structure from less to more salt-tolerant species⁶⁰, and even cause fish kills with large spills/exposures.⁶¹

The conclusion that the project will not have permanent impacts is even more troubling given the recommendation that “prior to the end of the draft EIS comment

⁵⁶ NRC - National Research Council. 2008. Hydrologic Effects of a Changing Forest Landscape. Washington, DC: The National Academies Press.

⁵⁷ Elphick, J.R.F., Bergh, K.D., Bailey, H.C., 2011. Chronic toxicity of chloride to freshwater species: effects of hardness and implications for water quality guidelines. *Environ. Toxicol. Chem.* 30, 239–246.

⁵⁸ Mount, D.R., Gulley, D.D., Hockett, J.R., Garrison, T.D., Evans, J.M., 1997. Statistical models to predict the toxicity of major ions to *Ceriodaphnia dubia*, *Daphnia magna*, and *Pimephales promelas* (fathead minnows). *Environ. Toxicol. Chem.* 16, 2009–2019.

⁵⁹ Bern, C. R., Clark, M. L., Schmidt, T. S., Holloway, J. M., & McDougal, R. R. 2015. Soil disturbance as a driver of increased stream salinity in a semiarid watershed undergoing energy development. *Journal Of Hydrology*, 524:123-136. doi:10.1016/j.jhydrol.2015.02.020.

⁶⁰ Mount, supra.

⁶¹ Papoulias, D.M., Velasco, J.L., 2013. Histopathological Analysis of Fish from Acorn Creek, Kentucky, Exposed to Hydraulic Fracturing Fluid Releases Southeast. *Nat.* 12(4):92-111; Brittingham, M., Maloney, K., Farag, A., Harper, D., & Bowen, Z. (2014). Ecological Risks of Shale Oil and Gas Development to Wildlife, Aquatic Resources and their Habitats. *Environmental Science & Technology*, 48. 11034-11047.

period, PennEast should file with the Secretary documentation to identify any special construction procedures that would be implemented to minimize impacts on C-1 streams. . . .”⁶² While documentation was submitted by PennEast on September 1st is inadequate. For example, it notes that workspaces width would be reduced to 75 feet in width but does not provide site specific details to determine the impacts to each stream. That site specific detail was not submitted. A stream by stream analysis has been called for by the United State Army Corp of Engineers for the DEIS process.⁶³ Without this analysis it is impossible to determine the environmental impacts or to compare the impacts of the preferred route with any alternative.

In response to another request for additional data, PennEast has not submitted the design plans and other material for the Horizontal Directional Drilling for the Delaware River but notes that mitigation measures will be addressed during the permitting phase with NJDEP.⁶⁴ It is inappropriate to wait until after the DEIS to submit this material.

It is inappropriate as tunneling technologies, as noted in the DIES, have risks. These tunneling methods require drilling fluid or “drilling mud” to lubricate and propagate the drilling of the pilot hole, the successive reaming of the pilot hole, and the

⁶² DEIS at 4-41.

⁶³ Letter from Frank J. Cianfrani to Kimberly D. Bose, dated Jan. 28, 2015 Accession #: 20150202-0073.

⁶⁴ August 31 letter from X at 5

pull back of the pipe segments. As admitted by the EIS, there can be “inadvertent returns” or stream bed “breakthroughs” during the drilling operations and that there would be a plan in place to deal with these accidents. No details of the plans were given, and the drilling mud was described as, “... a non-hazardous fluid comprised primarily of water, inert solids, and bentonite (i.e., a naturally occurring clay mineral)...”. The “plans” are of the utmost importance and MSDS for the drilling fluid/mud along with risks must be presented in the EIS. The inert and bentonite materials in the drilling mud are not inconsequential. It is assumed that “inert” means there are no carcinogenic, mutagenic, or other petrochemically derived product in the drilling fluid (which are regularly used as a drilling fluid additives). However, bentonite in and of itself can act as a water column filter sorb any number of natural organic/inorganic molecules from solution (i.e. the gound/surface/stream water); but bentonite can also dissociate into sodium (Na^+), calcium (Ca^{2+}), aluminum (Al^{3+}), and silicate (SiO_3) ions (i.e. raising the level of dissolved level salt, metal and silicon) under the correct physiochemical conditions.

Furthermore, the term “inert”, is relative and needs to be defined. Inert materials are generally added to drilling fluid/muds to function to modify density, viscosity, freezing/boiling point, filtration or rheologic properties, pH, circulation/lubrication, surface properties, protection from corrosion, shale/water interatciont, etc. These components have historically been one of more of the following: barium sulfate (barite);

calcium carbonate (chalk) or hematite; xanthan gum; guar gum; glycol;
carboxymethylcellulose; starches; acrylates; polyphosphates; lignosulfonates; tannic
acid derivatives; sodium-, potassium-, calcium-, and/or magnesium hydroxide;
hydrated lime; gypsum (hydrated calcium sulfate); synthetic polymers (flocclulants);
ammonium acid phosphate; ammonium bisulfite; ammonium sulfite; calcium bromide;
calcium chloride; calcium hydroxide; calcium oxide; calcium sulfate; Plaster of Paris;
gypsum; chromic chloride; chromium potassium sulfate; magnesium chloride;
magnesium oxide potash carbonate (K_2CO_3); potassium chloride; sodium bicarbonate;
sodium carbonate; sodium nitrate; sodium sulfite; Zinc bromide; zinc carbonate; zinc
chloride; zinc sulfate.

Any one of these additives alone can dramatically alter not only the salinity of the impacted soil/water, but also the pH, organic/inorganic carbon and nutrient content and concentration, dissolved metal composition/concentrations, and many other environmental variables. The cumulative effect of the introduction of multiples of these components is likely catastrophic and very difficult to assess, and while the EIS assessed any adverse effects to be short term, the effects of salinity from anomalies such as brine pits have already been proven to be long lived phenomena .⁶⁵

⁶⁵ Reiten, J.C. and Tischmak, T., 1993. Appraisal of Oil Field Brine Contamination in Shallow Ground Water and Surface Water, Eastern Sheridan County. Open-File , 260. Montana Bureau of Mines and Geology, Montana Billings, Mont 296 (2 sheet(s)); Swanson, G.A., Euliss Jr., N.H., Hanson, B.A., Mushet, D.M., 2003. Dynamics of a prairie pothole wetland complex \implications for wetland management, in

PennEast was asked to submit prior to the end of the comment period, “proposed crossing methods for **all** waterbodies, including those with contaminated sediments.”⁶⁶ That has not been done to date in anything but general and incomplete terms. In regards to crossing methods in contaminated streams, PennEast notes that it will do sampling prior to construction and if PCBs are found in the sediment to consult with the appropriate agency to determine the impacts of this contamination and necessary precautions.⁶⁷ This permit first then study proposal is inadequate and contrary to the dictates of NEPA. PennEast has not provided any explanation why this sampling has not already occurred during the pre-application stage or prior to the release of the DEIS. As the information is obtainable and is clearly relevant, it is inappropriate and inconsistent with NEPA for the DEIS to have been released without this data and procedures already determined.⁶⁸ The route and the alternative analysis must be based upon facts and data and not on presumptions.

Waterbodies with Total Maximum Daily Load Plans

While the DEIS acknowledges the existing of 11 TMDLs in New Jersey and also acknowledges “temporary” impacts from dry crossing methods, the DEIS is void of any

Winter, T.C., ed., hydrological, chemical, and biological characteristics of a Prairie Pothole Wetland Complex under highly variable climate conditions\the Cottonwood Lake Area, East-Central North Dakota. U. S. Geol. Surv. Prof. Pap. 1675, 55–94.

⁶⁶ DEIS at 4-46.

⁶⁷ August 31 letter from PennEast at 5.

⁶⁸ *Sierra v. Marsh*, *supra*.

discussion of the impacts of removing riparian zone vegetation on the TMDLs. For example there is a TMDL for Jacobs Creek, which in part calls for best management practices on agricultural land. These best management practices include healthy riparian zones.⁶⁹

Riparian zones are vital to protecting water quality. The scientific literature reinforces the importance of buffers in removing “excess nutrients and contaminants such as pesticides, heavy metals and organic matter, all of which are detrimental to water quality.”⁷⁰ In reviewing the scientific literature in support of riparian zones, the Department noted not only was the width of the riparian zone important but also noted that breaks or gaps in the riparian zone reduced its effectiveness.⁷¹

Waterbodies of Ecological or Recreational Importance

The DEIS reliance on PennEast to determine the final crossing methods of these waterbodies is inappropriate. Without the detailed information on the method of crossing, it is impossible for the DEIS, agencies or the public to understand and evaluate the environmental impacts of the project. Additionally as noted elsewhere the Army

⁶⁹ Amendment to Mercer County Water Quality Management Plan, et al. Total Maximum Daily Loads for Fecal Coliform to Address 10 Streams in the Northwest Water Region. Approved September 15, 2005.

⁷⁰ 38 N.J.R. 3950(a) (2006)

⁷¹ Id.

Corp has requested a waterbody by waterbody analysis in furtherance of its obligations under Section 404.⁷²

4.3.2.5 General Impacts and Mitigation for Surface Water Resources

4.3.2.6 Conclusion

Given the plethora of missing information, the DEIS conclusion that the project will not have long-term effects on surface water, is without support in the record. This conclusion illustrates the perception that FERC has already, in the absence of significant data, prejudged this application. Under NEPA prejudging an application is contrary to the necessary “hard look” required.

4.4 Wetlands

The DEIS notes that “Wetlands would be crossed utilizing a reduced 75-foot construction right-of-way and PennEast would maintain a 10-foot corridor centered on the pipeline during operation.”⁷³ The construction right of way should be reduced to the maximum extent practicable. In New Jersey, the NJDEP required Transcontinental’s Leidy Line Southeast expansion, Skillman Loop to utilize a 50 foot ROW. Please see Exhibit A. This minimized row would be more protective of the wetlands therefore it

⁷² Need cite.

⁷³ DEIS at 2-12.

should at the very least be reviewed in the DEIS and recommended as a condition of any approval.

4.4.1.2 Vernal Pools

Another example of the outstanding data is in response to vernal pools. The DEIS notes “PennEast indicated that vernal pool surveys will be conducted concurrently with wetland delineations on **currently available** parcels through May and June 2016.”⁷⁴ As this information does not appear in the DEIS, it is still outstanding.

As set forth in more detail below, the DEIS’ comment that “[t]he majority of effects on wetlands from construction of the pipelines would be temporary and short term because PennEast would restore all wetland to preconstruction contours and hydrology,”⁷⁵ is without support in the record. There is no data in the resource reports or the DEIS support that the value and function of wetlands can and will be restored.

4.12 Cumulative Impacts

NEPA regulations define cumulative impact as:

[T]he impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can

⁷⁴ DEIS 4-68. Emphasis added.

⁷⁵ DEIS 4-71

result from individually minor but collectively significant actions taking place over a period of time.⁷⁶

Based upon this definition NEPA requires FERC to review in its EIS the cumulative impacts of past actions as well as foreseeable future actions. The DEIS should set forth a basin line from which all past actions are added to determine the current cumulative impacts. Then the DEIS should list the foreseeable future actions and determine their likely cumulative impacts.

Regarding potential future impacts, one of the foreseeable future actions is the co-location of additional pipelines along this route.

The DEIS does not adequately discuss the cumulative impacts of past projects. Nor does the DEIS set forth the criteria it utilized to determine the geographical or temporal scope of the cumulative impacts analysis. Nor does the DEIS set forth the criteria for size of a project to be included. The DEIS states:

We have identified four types of actions that would potentially cause a cumulative impact when considered with the PennEast Pipeline Projects. These are:

- Other natural gas projects, both under FERC's jurisdiction and those not under FERC's jurisdiction;
- Electric generation and transmission projects;
- Transportation projects; and
- Commercial and large-scale residential developments.⁷⁷

⁷⁶ 40 C.F.R. 1508.7

⁷⁷ DEIS at 4-265.

The DEIS does not define what a large-scale residential development is. In addition to the lack of standards for the inclusion of projects in the analysis, NEPA explicitly acknowledges that even minor projects that do not in of themselves have permanent impacts may have them when combined with other minor projects.⁷⁸ The failure to consider the cumulative impact of multiple minor projects is impermissible under NEPA.

Table 4.12-1 only provides a cursory explanation of the projects and the various environmental media affected. There is little to no discussion regarding the projects and an analysis of the resources impacted. There is no map demonstrating the location of the projects, the resources impacted and its relation to the preferred route. Guidance from CEQ sets out the steps required in a cumulative impacts analysis.⁷⁹ At a bare minimum they require:

- Establishing the geographical scope and temporal time frame
- Identify other actions affecting the resource
- Characterization of the resource
- Characterization of the stressors to the resource
- Define the baseline conditions.

⁷⁸ 40 C.F.R. 1508.7

⁷⁹ CEQ Guidance on Considering Cumulative Effects xxx

- Identify important cause and effect relationships between the identified actions and the resources⁸⁰

Additionally, in comments submitted by the Watershed and NJCF⁸¹, FERC

Docket FERC Docket CP15-558, the DEIS is required to evaluate the cumulative impacts to environmental resources from the following projects:

- Columbia Pipeline Group's East Side Expansion Project, from Chester County (PA) to Gloucester County (NJ)
- Pilgrim Pipeline, between Albany (NY) and Linden (NJ)
- Southern Reliability Link, from Burlington County (NJ) to Ocean County (NJ)
- South Jersey Gas Inc.'s South Jersey Gas Pipeline Reliability Project, in Cape May and Atlantic Counties (NJ)
- Williams Partners L.P.'s Diamond East Project, from Luzerne and Lycoming Counties (PA) to Mercer County (NJ)
- Transcontinental Gas Pipeline Company, LLC. Northeast Supply Enhancement Project, PF16-5-000, Somerset and Middlesex Counties.
- Crestwood Midstream Marc-1 Hub Line, CP-10-480
- Crestwood Marc II Marc-2 proposed to connect Marc I line to PennEast⁸²

⁸⁰ Id. at 10.

⁸¹ Intervenor's Comments on PennEast Application, Dated 3/11/2015, Accession #20160311-5209

⁸²

http://www.millenniumpipeline.com/pdf/2014_annualmeeting/2014MillenniumPipelineAnnualCustomerMeeting-CrestwoodPresentation.pdf

For all of the projects noted above, the DEIS should follow the CEQ's guidance on cumulative impacts by setting forth a summary of the project, a description of the resources impacted, and a description of the impacts.

The DEIS also does not set forth how far in the past it looked to determine cumulative impacts. For many of the projects listed in Table 4.12-1 they are under construction. The oldest defined project dates back to 2012. As EPA region III in its comments on the Atlantic Sunrise DEIS explains "[c]umulative impacts temporal boundaries are often set a few decades into past and future to include appropriate trend and facility life expectancy. It is typical to use a baseline time frame of 30 to 50 years past, prior to sprawl and extensive highway networks. It is important to analyze the trends in resources, to identify if there have been repeated impacts or degradation of the resource."⁸³

This data is readily available from multiple sources. For example a review of records in municipal zoning offices can set forth past projects that may be relevant in the cumulative analysis. Additionally New Jersey has been preparing, for a number of years, reports on land use changes over time. The most recent report covers the period of time between 1986 and 2007.⁸⁴ A cursory review of these reports demonstrates that there have been significant cumulative impacts to the region. For example, there has

⁸³Letter from Jeffery Lapp to Davis, re- Atlantic Sunrise DEIS, CP15-138 June 27, 2016 (Region III letter)

⁸⁴ Changing Landscapes in the Garden State: Urban Growth and Open Space Loss in NJ 1986 thru 2007. Hasse and Lathrop (July 30, 2010).

been a demonstrated substantial loss of wetlands, agricultural and forest lands.⁸⁵ In fact the report found that New Jersey lost 52,285 acres of wetlands between 1986 and 2007.⁸⁶ This finding is in stark contrast to the DEIS' finding that any loss of wetlands from projects would be mitigated by the permitting process.⁸⁷ This loss of wetlands is not unexpected though as wetlands mitigation does not occur successfully. The result of a NJDEP study demonstrates that wetlands mitigation was not fully addressing the impacts from wetlands permits.⁸⁸ Not only has there been a net loss of wetlands, the cumulative impacts discussion does not address the function and value changes caused by converting palustrine forested wetlands and palustrine scrub/shrub wetlands into palustrine emergent wetlands.⁸⁹ In short, the DEIS should examine the status of the project, whether mitigation was required and the current status or success of that mitigation.⁹⁰

During the same period of time New Jersey lost 114,921 acres of forest.⁹¹ Given that the preferred route will impact the remaining forests in the region, an analysis of the cumulative impacts of all of these land use changes should be performed. As noted in the DEIS, the applicant will be required to develop an invasive plant management

⁸⁵ Id at 5.

⁸⁶ Id. at 7.

⁸⁷ DEIS at 4-280.

⁸⁸ Creating Indicators of Wetlands Status, New Jersey Department of Environmental Protection, March 2002.

⁸⁹ Id. at 46.

⁹⁰ Region II letter, *supra*.

⁹¹ Haase, *supra* at 10.

plan. The DEIS does not appear to have examined the success of prior invasive plant management plans. The success of prior plan implementation is important in order to determine the base line as well as to determine whether any improvements in these plans should be instituted.

The DEIS also impermissibly concludes that since projects obtained or will obtain permits that there is no permanent impacts from these projects.⁹² Given that many of the waters within the watersheds impacted by this proposal are not meeting one or more water quality standards such a conclusion is without support in the factual record. Also given the results of the Urban Landscape reports and the NJDEP wetlands mitigation study, it is clear that wetlands impact mitigation is not achieving the goal of “any net loss of wetlands and waterbodies would be mitigated through the applicable permitting agency.”⁹³

⁹² DEIS at 4-280.

⁹³ DEIS at 4-280.

Conclusion.

Given the extreme lack of data in the DEIS, FERC should collect the outstanding data; incorporate it into DEIS and issue a revised DEIS.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "M. L. Pisauro, Jr.", written in a cursive style.

Michael L. Pisauro, Jr.
Policy Director



**STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF LAND USE REGULATION**
Mail Code 501-02A, P.O. Box 420, Trenton, New Jersey 08625-0420
Telephone: (609) 777-0454 or Fax: (609) 777-3656
www.state.nj.us/dep/landuse



PERMIT

<p>In accordance with the laws and regulations of the State of New Jersey, the Department of Environmental Protection hereby grants this permit to perform the activities described below. This permit is revocable with due cause and is subject to the limitations, terms and conditions listed below and on the attached pages. For the purpose of this document, "permit" means "approval, certification, registration, authorization, waiver, etc." Violation of any term, condition or limitation of this permit is a violation of the implementing rules and may subject the permittee to enforcement action.</p>		Approval Date APR 08 2015
		Expiration Date APR 07 2020
Permit Number(s): 0000-13-0012.2 FHA140001 0000-13-0012.2 FWW140001	Type of Approval(s): Flood Hazard Area Individual Permit Freshwater Wetlands Individual Permit Water Quality Certificate	Enabling Statute(s): NJSA 13:9B NJSA 40:55D-93-99 NJSA 58:10A NJSA 58:16A
Permittee: Brett Simmons Transcontinental Gas Pipe Line Co. 2800 Post Oak Blvd Houston, TX 77056	Site Location: Block(s) & Lot(s): [N/A, N/A] [N/A, N/A] [N/A, N/A] Municipality: Princeton County: Mercer Municipality: Montgomery Township County: Somerset	
Description of Authorized Activities: <p>The applicant, Transcontinental Gas Pipeline Company is proposing to construct the Skillman Loop gas pipeline which is a component of the Leidy Southeast project. The Skillman Loop will consist of a 42-inch diameter natural gas pipeline approximately 6.36 miles long, installed adjacent to and within the existing right-of-way (ROW) of the 36-inch diameter (Caldwell "B" loop) natural gas pipeline in Princeton, Mercer County and Montgomery Township, Somerset County. The pipeline will be used to transport natural gas to regional customers.</p> <p>The Skillman Loop will use a typical 105-foot wide construction ROW in uplands; 75 to 80 feet wide ROW in regulated areas and a 50-foot wide construction ROW throughout the area known as Princeton Ridge. The installation of the pipeline will include the clearing of the ROW and additional workspace for HDD operations, staging of materials and equipment, the excavation and backfilling of a trench to accommodate the pipe, the installation of an underground cathodic protection line and the temporary construction of one new access road off of Ridgeview Road. Following installation, all temporary disturbances will be replanted and restored as required.</p> <p>This permit authorizes 2.66 acres of freshwater wetland impacts, 0.158 acres of State open water impacts, 9.84 acres of transition area impacts, and 11.80 acres of riparian zone impacts associated with the crossing of 22 watercourses, one watercourse is crossed a total of 6 times, 11 crossings will be installed via Horizontal Directional Drilling (HDD), 8 crossings will be conventional bored and 3 crossings will be by open cut. The impacts associated with this project are shown on plans referenced in the permit. Mitigation and restoration for the loss of riparian zones, wetlands and transition areas is required as a condition of this permit.</p>		
Prepared by:  _____ Mark Harris	Received and/or Recorded by County Clerk: 	
THIS PERMIT IS NOT EFFECTIVE AND NO CONSTRUCTION APPROVED BY THIS PERMIT, OR OTHER REGULATED ACTIVITY, MAY BE UNDERTAKEN UNTIL THE APPLICANT HAS SATISFIED ALL PRE-CONSTRUCTION CONDITIONS AS SET FORTH HEREIN.		
This permit is not valid unless authorizing signature appears on the last page.		

PRE-CONSTRUCTION CONDITIONS:

1. **Timing:** If this permit contains a condition that must be satisfied prior to the commencement of construction and/or site preparation, the permittee must comply with such condition(s) within the time required by the permit or, if no time specific requirement is imposed, then within six months of the effective date of the permit, or provide written evidence satisfactory to the Division that such condition(s) cannot be satisfied.

SPECIAL CONDITIONS:

1. **Material Disposal:** All excavated material and dredge material shall be disposed of in a lawful manner. The material shall be placed outside of any flood hazard area, riparian zone, regulated water, freshwater/coastal wetlands and adjacent transition area, and in such a way as to not interfere with the positive drainage of the receiving area.
2. The Department has determined that the riparian zones adjacent to the streams in the project area are either 50 or 150 feet and 300 feet. Therefore, vegetation within 50 feet, 150 feet and 300 feet of the top of the bank of these streams shall only be disturbed in the areas specifically shown on the approved construction plans. No other vegetation within 50 feet, 150 feet and 300 feet of any watercourse onsite may be disturbed for any reason.
3. Prior to any site preparation or construction activities on lands to be acquired to access right of way, the permittee shall obtain all necessary easements or approvals from all property owners whose property will be used to access the right-of-way.
4. Prior to any excavation and pipe installation construction activities, the permittee shall obtain in writing all necessary approvals for temporary dewatering and water withdraw for hydrostatic testing from the Division of Water Supply and Geoscience within the Department.
5. Prior to any site preparation or construction activities, the applicant shall provide to the Department a phone list of Transco and contractor contacts who will be present onsite during all phases of construction and restoration, and who are responsible for the guidance of the Department staff during permit compliance inspections. Said list shall be updated monthly (on the first of every month) or as responsible Transco and contractor staff change until the Department has determined in writing that all restoration activities have been completed.
6. Prior to any site preparation or construction activities, the permittee shall provide to the Division a projected timeline of progress of all phases of project implementation, including milestone dates for the completion of regulated activities including, but not limited to the clearing of vegetation, activities occurring in regulated areas, activities on State owned lands, pipeline installation, reseeding and stabilization measures, and planting and restoration activities. Said timeline shall be updated monthly and immediately if milestones are not met in order to prevent inadvertent violations of timing restrictions or monitoring requirements.
7. The permittee shall at all phases and times of construction and restoration have a "chart/table" of what activities and what milepost locations activities are occurring within

the project workspace on a daily basis. Said "chart/table" shall be available for visual inspection and access to at all established construction offices, pipeyards or compressor stations within the Skillman Loop work area or phone inquiry to appropriate staff of the Department for compliance inspections during construction and restoration activities. In addition, the names of monitors, their assignments, and all associated monitoring assignment sheets, etc., identifying monitoring requirements shall be included in the same manner and in the same locations. Said "chart/table" and monitor lists shall be updated on the Monday of every week throughout construction and restoration and e-mailed to appropriate DEP Compliance and Enforcement staff.

8. The permittee shall ensure that best management practices (BMP's) identified at N.J.A.C. 7:7A-1.4 are implemented during construction to minimize impacts to resources as well as restoration and mitigation of the temporarily disturbed areas, as detailed in Item 14 of the permit application "RESOURCE REPORT NO. 7, APPENDIX 7B, PROJECT UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN", dated September 2013 and Item 21 of the permit application "FINAL ONSITE WETLAND MITIGATION PLAN FOR TRANSCO-LEIDY SOUTHEAST EXPANSION PROJECT SKILLMAN LOOP" dated December 2014. If any discrepancies are found between that document and this permit, the permit shall govern. In addition, if any discrepancies are found between this permit document and the approved plans, the plans shall govern.
9. Construction equipment shall not be stored, staged or driven within any channel, freshwater wetland or transition area (except as part of a "one pass" drive through to establish travel lanes and temporary infrastructure in preparation of pipeline installation), unless otherwise expressly approved by this permit and/or described on the approved plans. **No storage of chemicals, oil, fuel or refueling of equipment shall occur within 150 feet of a wetland or watercourse with the exception of refueling for pumps. All pumps located within a regulated area must be placed within a secondary containment structure. A spill containment kit must be present at all pump locations within regulated areas.**
10. The applicant is responsible for installing and maintaining a sediment barrier around all soils disturbed by construction. Prior to the commencement of grading, or construction, the permittee must erect a silt fence and a construction debris fence at the limit of disturbance. These fences shall serve both as a siltation and debris barrier as well as a physical barrier protecting the riparian zones, wetlands and wetland transition areas from encroachment by construction vehicles or activities. These fences shall be kept in place and maintained throughout the duration of construction or until such time that the site is stabilized.
11. In order to ensure that turbidity is not increased in any receiving watercourses, water pumped from trenches during dewatering or hydrostatic testing shall be discharged outside of regulated areas to a well vegetated upland, or through a filter bag, or into an engineer designed and approved settling basin.

12. All excavated material shall be stockpiled and stabilized in accordance with the *Standards for Soil Erosion and Sediment Control in New Jersey* (SESCS) and properly stockpiled for restoration purposes. In addition, site clearing shall be done in a manner that complies with the (SESCS).
13. All disturbed areas that are not being graded or under active construction, and are not scheduled to be permanently seeded within 30 days, must be temporarily stabilized as specified by the approved Restoration Plans and SESCO.
14. Within 10 days of final grading, all disturbed areas which are to be permanently vegetated, are to be seeded and mulched as specified by the Restoration Plans and SESCO.
15. Any excavation in wetlands, flood hazard areas and watercourses shall be backfilled to pre-existing elevation. Also, the uppermost 18 inches shall be backfilled with the original topsoil material, unless the soil is saturated to the point that soil segregation is not possible or unless less than 18 inches of topsoil is encountered, such as in cases of shallow bedrock. In such instances all viable topsoil excavated must be segregated and replaced when the trench is backfilled.
16. Immediately following construction associated with the installation of the pipeline, all disturbed regulated areas shall be stabilized in accordance with best management practices outlined in Item 14 of the permit application, "RESOURCE REPORT NO. 7, APPENDIX 7B, PROJECT UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN", dated September 2013 and Item 21 of the permit application "FINAL ONSITE WETLAND MITIGATION PLAN FOR TRANSCO-LEIDY SOUTHEAST EXPANSION PROJECT SKILLMAN LOOP" dated December 2014. All regulated areas are to be restored in accordance with the approved Restoration Plan listed below. All stabilization measures shall utilize natural mulch material, native species and regraded slopes shall not exceed 2:1 unless erosion control mats are used. This authorization prohibits the use of rip-rap to stabilize slopes and streambanks.
17. In order to reduce surface runoff and to prevent soil erosion of watercourses, the applicant shall incorporate measures utilizing wet/dry swales, bio-swales, water breakers, diversion terraces, slope berms or line channels along any disturbed steep slope areas within the right of way and access roads in accordance with Best Management Practices defined at N.J.A.C. 7:7A-1.4 and SESCO. The Department reserves the right to request additional soil conservation measures, if it becomes evident to the Department that additional soil conservation measures are required to protect State regulated resources.
18. The permittee shall conduct in-stream turbidity monitoring during the construction activities using either continuous or grab samples on a three hour interval on any stream that is proposed to be crossed using the open trenching method. Any increase in turbidity at a point 100 meters downstream of the work location greater than 150 nephelometric turbidity units (NTU's) above background shall be recorded and adjustments made in BMP's to minimize sediment pollution. Additionally, any increase greater than 280 NTU's above background shall immediately be reported to Mark Harris, DEP/ Land Use Regulation Program at mark.harris@dep.nj.gov , and Maurice Nelson, DEP/ Bureau of Coastal and Land Use Enforcement at Maurice.nelson@dep.nj.gov . Sampling points

- should be located upstream, at the work location and at a point 100 meters downstream of the work location. The permittee shall retain all records of sampling and BMP adjustments at the site.
19. In order to minimize the spread of invasive plants and organisms, all matting material, including timber and corduroy mats, and all construction equipment, including trucks shall be washed, and cleaned and certified as clean by Transco's Environmental Inspector prior to entrance into the project location.
 20. Prior to the placement of gravel in any regulated areas, geotechnical fabric shall be placed and adequately staked to separate the existing soil surface from the additional fill material. Following construction, all fill material and geotechnical fabric must be removed from all disturbed areas, and the disturbed areas shall be subsequently harrowed, disked and raked to an adequate depth in order to decompress the soil. Following decompression, all disturbed areas shall be seeded with native seed mix, mulched and planted as specified in the Restoration Plan.
 21. Immediately following construction associated with the installation of the pipeline, the applicant shall remove from the ROW and proposed disturbed areas all accumulated trash, man-made debris, silt and debris fence, and any associated fill previously deposited in those areas to aid in restoration and to improved habitat within the riparian zone, wetlands and wetland transition area.
 22. The applicant shall restore all excavations to pre-existing grades, including depressions within wetlands, and those areas which may meet the definition of vernal habitats. Restoration shall incorporate the use of microtopography and coarse woody debris to replicate pre-existing conditions.
 23. In addition to any other mitigation required by this permit, Transco shall provide additional mitigation for all trees (greater than or equal to 8 inch dbh) removed from the entire project reach within the Princeton Ridge. Such mitigation shall be undertaken in the following manner:
 - a) Transco must quantify the number of trees removed within and adjacent to each property located along the pipeline within Princeton Ridge.
 - b) Transco must then offer each property owner the opportunity to have Transco plant 4 trees (3 inch dbh or greater) for each tree removed along the pipeline project adjacent to or within their properties.
 - c) This offer shall be made in writing to each affected property owner on either side of the pipeline easement, regardless of which side of the ROW is cleared.
 24. Prior to construction, **except for tree clearing activities**, site disturbance or earth movement or staging for the pipeline, the permittee shall complete a benthic macro invertebrate survey of Cherry Run stream along Cherry Valley Road. A post construction benthic survey shall be completed the following year during the same season timeframe as the initial survey. The surveys shall include a taxa listing to the genus level of benthic macro invertebrates and changes between the two samples. Sampling protocols implemented should be scientifically defensible, accepted methodologies. The report shall

be submitted to the NJDEP/ Land Use Regulation Program attn. Mark Harris, within 45 days of the completion of the surveys.

25. Transco is required to adhere, without exception, to all special construction methods stated in Transco's filings to FERC on June 2, 2014 [20140602-5277] and October 1, 2014 [20141001-5424] in order to reduce the risks of potentially catastrophic direct and secondary impacts on regulated wetlands, C-1 streams and their tributaries, riparian and buffer zones, as well as public safety.
26. In order to protect the spawning period of the Bridle Shiner, a timing restriction from April 1 to July 31 is imposed on any in stream work or work that could introduce sediment into the waterways on the following streams; the Back Brook & tribs., Pike Brook & tribs. and the Crusier Brook & tribs. The short life span, single breeding season and sensitivity to turbidity intensify the need to protect the spawning period for the Bridle Shiner.
27. The permittee must make provision for continuous monitoring of all Soil Erosion and Sediment Controls on a daily basis and after heavy rainfall events to ensure Soil erosion and Sediment Control measures are in working order at all times.
28. This authorization to conduct a regulated activity in a wetland or open water includes the Division's approval of a Water Quality Certificate for these activities.
29. On April 8, 2015, the Department received electronic copies of 8 sheets of revised plans for the portion of the Skillman loop located within Montgomery Township, Somerset County. Within 5 days of the issuance of this permit the permittee shall submit 5 signed and sealed copies of the following drawings;
 - (1) sheet, prepared by Maw Jaw Hwang, P.E., of Mustang New Jersey, Inc., **"TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC., FLOOD HAZARD AREA PERMIT, LEIDY SOUTHEAST PROJECT, PROPOSED 42" SKILLMAN LOOP M.P. 1776.79 TO M.P. 1783.00 MERCER & SOMERSET COUNTIES, NEW JERSEY"** Drawing No. 25-09-1945/059703-D, Sheet No. 4, dated December 1, 2014, last revised April 7, 2015.
 - (3) sheets, prepared by Maw Jaw Hwang, P.E., of Mustang New Jersey, Inc., entitled: **"TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC., FRESHWATER WETLANDS AND OPEN WATER PERMIT, LEIDY SOUTHEAST PROJECT, PROPOSED 42" SKILLMAN LOOP, M.P. 1776.79 TO M.P. 1783.00, MERCER & SOMERSET COUNTIES, NEW JERSEY"** Drawing No. 25-26-1945/059703-D, Sheets 5, 6 and 13C, dated December 1, 2014, last revised April 7, 2015
 - (4) sheets, prepared by Maw Jaw Hwang, P.E., of Mustang New Jersey, Inc., entitled: **"TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC., RESTORATION PLANS, LEIDY SOUTHEAST PROJECT, PROPOSED 42" SKILLMAN LOOP, M.P. 1776.79 TO M.P. 1783.00, MERCER & SOMERSET COUNTIES, NEW JERSEY"** Drawing No. 25-26-1000/000634-D, Sheet Nos. 4, 5, 6 and 13C all dated December 1, 2014, all last revised April 7, 2015.

FLOOD HAZARD AREA CONDITIONS:

1. The applicant is required to ensure that **no fill** is placed within the flood hazard area or within 100 feet on either side of the top of bank of all streams which drain 50 acres or more. These streams are identified on the submitted "Item 2E-1 Leidy Southeast Expansion Project Field Delineated Streams and Associated Drainage Basins Skillman Loop Somerset and Mercer Counties New Jersey". Any fill placed above the original preconstruction grade within the flood hazard area or within 100 feet of streams which have drainage of more than 50 acres requires a separate Flood hazard Area Individual permit before fill material is placed.
2. The applicant is required to ensure that the improvements to existing access roads shown on the approved sheets are the only road improvements to occur; any improvements to additional access roads not shown on the approved plans require separate approvals or jurisdictional determinations from the Department.
3. Temporary equipment access bridges over streams draining more than 50 acres must be removed during any "flood watch or warning" from the National Weather Service for the subject area. This will insure that temporary bridges do not impede flood waters or are not displaced and pushed further downstream.
4. All temporary bridges must be removed immediately after pipeline installation and stabilization is completed in an area so that the temporary bridges are no longer required. After final removal of any temporary bridges, these locations must be restored to their original conditions and revegetated as per the Department's approved Restoration Plan.
5. The proposed pipe shall be properly sealed to prevent leaking or infiltration and the trenches shall be designed so as not to form or provide a conduit for groundwater discharge from streams. In addition trench plugs and anti-seep collars shall be utilized in all wetlands and streams to insure the drainage pathways are not created along the pipeline that would alter the hydrology of adjacent wetlands and streams.
6. The applicant shall be responsible for the removal of improvements to access roads, laid-down fill, and mats immediately after pipeline installation and stabilization is complete.
7. The applicant is required to ensure that the pipeline crossing of any water course will be a minimum of five (5) feet minimum below the watercourse invert, unless specified otherwise on the approved plans.
8. Immediately following construction of the access roads, the applicant shall stabilize all disturbed areas. Areas adjacent to the roads shall be top-soiled, seeded, and mulched. In addition, steeply sloped areas shall be covered with an erosion control blanket to minimize soil erosion.

FISH AND WILDLIFE CONDITIONS:

NJDFW - Fisheries Conditions:

1. In order to protect fishery resources within any waterway in the project area; any proposed grading or construction activities within the banks are prohibited between May 1 through June 30 of each year. In addition, any activity within the 100-year flood plain or flood hazard area of these watercourses that could introduce sediment into said watercourse or that could cause an increase in the natural level of turbidity is also prohibited during this period. The Department reserves the right to suspend all regulated activities on-site, should it determine that the applicant has not taken proper precautions to ensure continuous compliance with this condition.
2. With the prior written approval of the DEP/ Division of Fish and Wildlife, work may occur within the above timing restriction if there is no water present in the channel at the time of construction, and provided adequate documentation is provided, including but not limited to photographs of the project locations and immediately upstream and downstream of the project location, maps and written description including milepost numbers of the project location.
3. In order to protect the aquatic biota in all streams being trenched for the pipeline, the applicant is required to use all appropriate engineering standards, BMPs, construction manuals, and energy dissipation structures to minimize downstream impacts, and to maintain downstream flow rates.

NJ - Endangered and Threatened Species Conditions:

Unless otherwise approved in advance in writing by the NJ DEP, Division of Land Use Regulation, the following additional special conditions are required to ensure the protection of endangered and threatened species and critical habitats. Any discrepancies between the following conditions and the approved plans or the permittee's project plans, scope or understandings must be resolved with the Department in writing prior to commencement of site disturbance or construction associated with any such discrepancy. The Department reserves the right to suspend all regulated activities onsite should it determine that the permittee has not taken proper precautions to ensure continuous compliance with these conditions:

4. In order to protect **wood turtle (*Glyptemys insculpta*)** and its habitat within and adjacent to the following watercourses: **Cherry Run and Tributaries; SS-002-005, SS-002-006, SS-002-007, SS-002-008, SS-002-010, Beden Brook; SS-002-012, Rock Brook and Tributaries SS-002-014, SS-002-015, SS-002-017, SS-006-005 and wetlands WW-002-010, WW-002-011, WW-002-012, WW-002-033, WW-002-034, WW-022-0001, WW-023-0001**, the timing restrictions, conditions and best management practices listed below shall apply:

a. In-stream work (including stream bank excavation): In order to prevent adverse impacts to hibernating turtles, no site preparation, disturbance, grading, clearing or construction activity is permitted within the banks of the referenced watercourse, between **November 1 and April 1** of the calendar year. [If a coffer dam or equivalent Best Management Practice is proposed to *completely* enclose the work area, work may continue into this restricted period provided the coffer dam/BMP installation is *completed* prior to November 1 and thereafter completely precludes turtles from accessing the work area to rest or hibernate. This must include appropriate bank-side fencing to preclude terrestrial access to the work area. Immediately after installation of any such exclusion fencing, a qualified herpetologist must thoroughly inspect the enclosed area for wood turtles. Any wood turtles found must be reported to the Department and relocated outside of the proposed work area. Once this inspection is complete, authorized activities may commence within the enclosed/restricted work area.]

b. Wetlands/Transition Area/Riparian Zone work: In order to prevent adverse impacts to wood turtles or their resting, breeding or foraging habitats in any regulated areas up to 300 feet from a watercourse, no authorized activities may commence from **April 1 through May 30 and September 1 through November 15** of the calendar year *unless* the following measures have been taken:

i. Prior to the commencement of site preparation, disturbance, grading, clearing or construction activity, with the exception of tree felling, the permittee shall erect a silt/debris fence around the footprint of *all* proposed activities (temporary and permanent) sufficient to exclude small wildlife species, and specifically wood turtle, from entering the proposed construction area. This includes any required access areas for vehicles/equipment, which must remain fenced when not in active use using available exclusion BMP's (such as movable hay bales, temporary silt fencing, or an appropriate length of 12" (min) diameter flexible PVC drainage pipe through which a heavy-weight chain is run to assist in anchoring the pipe across the access point when the access areas is "closed").

ii. Immediately thereafter, a qualified herpetologist, pre-approved by the Department, must thoroughly inspect the fenced-in work area for wood turtles. Any wood turtles found must be reported to the Department, and relocated outside of the proposed work area. Once this inspection is complete, authorized activities may commence within the fenced work area.

iii. The fence must be monitored weekly and maintained in a manner which ensures the preclusion of turtle access until project completion.

5. In order to protect wood turtle habitat downstream of the following locations: **Cherry Run and Tributaries; SS-002-005, SS-002-006, SS-002-007, SS-002-008, SS-002-010. Beden Brook; SS-002-012, Rock Brook and Tributaries; SS-002-014, SS-002-015, SS-002-017, SS-006-005** the permittee must employ the most stringent soil erosion and sediment control BMPs available to ensure that there is no increase in sedimentation or turbidity downstream of the construction site.

6. In order to prevent the “take” of the Coopers Hawk nest associated with the right-of-way (between mile mark 1779.4 and 1779.2), no vegetation clearing of any kind may occur between March 15 and July 31 of any year.
7. Although there are no other threatened or endangered species concerns at the present time, species and/or habitat(s) may be discovered during the construction of this project. Species documentation and habitat suitability is subject to change based on the information available during the time the application is received. Any new areas found to be documented and suitable habitat for threatened or endangered species may be subject to the application of timing restrictions and additional conditions.

US Fish and Wildlife Service Conditions:

8. In order to avoid direct impacts to foraging/roosting northern long-eared bats (*Myotis septentrionalis*), the United States Fish and Wildlife Service (USFWS) requires that the clearing of potential roost trees not occur within northern long-eared bat fall swarming habitat from April 1 to November 15 of each calendar year, except for calendar year 2015, when the restriction will be April 10 to November 15.
9. In order to avoid direct impacts to foraging/roosting Indiana bats (*Myotis sodalis*) and northern long-eared bats (*Myotis septentrionalis*) the United States Fish and Wildlife Service (USFWS) requires that the clearing of potential roost trees not occur within Indiana bat and northern long-eared bat potential habitat from April 1 to September 30 of each calendar year, except for calendar year 2015, when the restriction will be April 10 to September 30 for the Skillman Loop and Pleasant Run Loop Transco projects.

HISTORIC PRESERVATION OFFICE CONDITIONS:

1. Prior to any site disturbance, pre-construction earth movement or pipe installation, except for tree clearing, hereafter “project implementation”, the permittee shall ensure that any effects to historic and archaeological resources be resolved through consultation between the New Jersey Historic Preservation Office; the Federal Energy Regulatory Commission as the lead Federal agency; the permittee, and identified consulting parties pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR §800. Upon completion of Section 106 Consultation, the permittee shall provide the Division of Land Use Regulation a copy of Section 106 comments together with a complete explanation of how the comments have been incorporated into the project, pursuant to N.J.A.C. 7:7A-12.2(n).
2. If the project circumstances change so that consultation under Section 106 of the National Historic Preservation Act is no longer necessary, the permittee shall consult with the Division of Land Use Regulation and the New Jersey Historic Preservation Office to ensure the provisions of N.J.A.C. 7:7A-4.3(b)(5) or N.J.A.C. 7:7A-7.2(b)(9) are met, prior to Project Implementation.

3. The permittee shall ensure that all phases of archaeological survey and reporting shall meet the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation*, 1983 and the archaeological survey and reporting rules at N.J.A.C. 7:4-8.4 through 8.5. Evaluations to determine the National Register eligibility of archaeological sites must comply with the National Park Service's 2000 National Register Bulletin, *Guidelines for Evaluating and Registering Archaeological Properties*. All individual(s) conducting the work need to meet the relevant Secretary of the Interiors' Professional Qualifications Standards for archaeology and historic architecture (48 FR 44738-9).
4. Architectural surveys must comply with the Office's 1999 *Guidelines for Architectural Survey* (<http://www.nj.gov/dep/hpo/1identify/survacht.htm>) with reporting conforming to the rules at N.J.A.C. 7:4-8.6. Evaluations to determine to National Register eligibility of historic properties must be in keeping with the National Park Service's National Register Bulletin, *How to Apply the National Register Criteria for Evaluation*. Recommendations for avoidance of impacts to historic properties must conform to the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.
5. In order to ensure that the project will have no adverse effect of historic properties, the permittee is required to implement the following conditions within the boundaries of all properties eligible for or listed on the New Jersey and National Registers of Historic Places **which includes 549 Great Road, Princeton Township, Mercer County, known as Coventry Farm**:
 - a) The Historic Preservation Office receives photographic documentation of the existing conditions of the pipeline right-of-way before any construction activity is initiated;
 - b) removal of mature vegetation is minimized to the maximum extent practicable, and,
 - c) post-construction conditions and any necessary restoration of the landscape features are documented to the satisfaction of the Historic Preservation Office.

MITIGATION CONDITIONS:

1. The permittee shall mitigate for the **permanent** disturbance of 1.71 acres of forested freshwater wetlands with the purchase of credits from a mitigation bank serving the appropriate watershed management area in accordance with the mitigation hierarchy. (N.J.A.C. 7:7A-15 et seq) Prior to the initiation of any regulated activities authorized by this permit, the permittee shall submit proof of purchase of 1.70 credits from an approved wetland mitigation bank to the attention of the Mitigation Unit Supervisor, NJDEP, Division of Land Use Regulation at Mail Code 501-02A, P.O. Box 420, Trenton, NJ 08625-0420.

At this time, the following bank(s) are approved to serve the project area; additional banks may be approved at any time, so please contact the Mitigation Unit for the most up to date service area information and for additional options.

- Wyckoff's Mills Wetland Mitigation Bank - Contact Ron Prann of Shaw Environmental & Infrastructure, Inc. at (609) 588-6345 or (609) 731-5400
 - Cranbury Wetland Mitigation Bank – Contact Doug Lashley of GreenVest/Cranbury LLC at 410-987-5500 or at Doug@greenvestus.com
2. The permittee shall also mitigate for the **temporary** disturbance of 0.09 acres of forested freshwater wetlands and 0.87 acres of emergent freshwater wetlands through an on-site restoration project (N.J.A.C. 7:7A-15 et seq).
 3. All restoration of temporary impacts shall be conducted immediately following completion of the activity that cause the disturbance, and shall be continued and completed within six months after the end of the activity that caused the disturbance.
 4. If the permittee fails to perform mitigation within the applicable time period, the acreage of mitigation required shall be increased by 20 percent each year after the date mitigation was to begin (N.J.A.C. 7:7A-15.3(b)).
 5. The following conditions apply to all creation, restoration or enhancement projects:
 - a. The permittee shall obtain a secured bond or other financial surety acceptable to the Division from a firm licensed to provide such services in New Jersey. (N.J.A.C. 7:7A-15.13)
 - b. The permittee shall notify the Mitigation Unit at the Division of Land Use Regulation in writing **at least 30 days prior to the start of construction of the wetland mitigation project** to arrange an on-site pre-construction meeting among the permittee, the contractor, the consultant and the Division.
 - c. To ensure the intent of the mitigation design and its predicted wetland hydrology is realized in the landscape, the mitigation designer shall be present on-site during all critical stages of mitigation construction and during the restoration of any temporarily impacted areas. Critical stages of construction include, but are not limited to, herbicide applications, earthmoving activities, planting, and inspections.
 - d. The permittee shall be responsible for ensuring that best management practices (BMP's at N.J.A.C. 7:7A-1.4) are used throughout construction to control the spread and colonization of highly invasive plants. Specifically, all equipment, especially tracks and tires, must be thoroughly cleaned every time equipment or vehicles move from an area containing invasive plants or from off-site to the mitigation area. In addition, soil containing root fragments and above-ground vegetative material from invasive plants shall be carefully managed during earthmoving activities and disposed of at a suitable off site location rather than mulched and reused or stockpiled elsewhere on the site. For information on the specific species that are considered to be invasive, please refer to the Invasive Plant Atlas at <http://www.invasiveplantatlas.org/index.html>.
 - e. In the event that changes to the mitigation design are necessary to ensure success of the project as a result of on-site conditions, the mitigation designer shall immediately notify the Division in writing and submit an alternative plan which achieves the proposed wetland conditions. The Division shall review the plan in accordance with N.J.A.C. 7:7A-15.15. Any modifications to the plans that are reviewed and approved

- by the Division must be shown on a signed and sealed revised plan. The As-Built plans required as part of the Construction Completion Report may serve as the signed and sealed revised plan required to be submitted as part of the construction modification process described above if time constraints warrant such action and have been approved by the Division in writing.
- f. **Within 30 days of final grading of the mitigation site and prior to planting**, the permittee shall notify the Mitigation Unit at the Division of Land Use Regulation in writing to arrange a post-grading construction meeting among the permittee, contractor, consultant and the Division.
 - g. **Within 30 days following the final planting of the mitigation project**, the permittee shall submit a Construction Completion Report to the Division detailing as-built conditions (see below) and any changes to the approved mitigation plan that were made during construction (N.J.A.C. 7:7A-15.16). The Construction Completion Report shall contain, at a minimum, the following information:
 - i. A completed [Wetland Mitigation Project Completion of Construction Form](http://www.nj.gov/dep/landuse/forms/index.html). This form is located at <http://www.nj.gov/dep/landuse/forms/index.html> and certifies that the mitigation project has been constructed as designed and that the proposed area of wetland creation, restoration or enhancement has been accomplished;
 - ii. As-Built plans which depict final grade elevations at one foot contours and include a table of the species and quantities of vegetation that were planted including any grasses that may have been used for soil stabilization purposes; and
 - iii. Photos of the constructed wetland mitigation project with a photo location map as well as the GPS waypoints in NJ state plane coordinates NAD 1983.
 - j. **Within 30 days following final planting of the mitigation project**, the permittee shall post the mitigation area with permanent signs which identify the site as a wetland mitigation project and that all-terrain vehicle use, motorbike use, mowing, dumping, draining, cutting and/or removal of plant materials is prohibited and that violators shall be prosecuted and fined to the fullest extent under the law. The signs must also state the name of the permittee, a contact name and phone number, and the Department's permit number.
 - k. The permittee shall monitor forested and/or shrub scrub wetland mitigation projects for 5 full growing seasons and emergent wetland or State open water mitigation projects for 3 full growing seasons beginning the year after the mitigation project has been completed. The permittee shall submit monitoring reports to the Division of Land Use Regulation no later than December 31st of each full monitoring year (N.J.A.C. 7:7A-15.16(c)). All monitoring reports must include the standard items identified in the checklist entitled, "Wetland Mitigation Monitoring Project Checklist", which can be found at <http://www.nj.gov/dep/landuse/forms/index.html>.
 - l. Once the required monitoring period has expired and the permittee has submitted the final monitoring report, the Division will make the finding that the mitigation project is either a success or a failure. This mitigation project will be considered successful if the permittee demonstrates all of the following:

- i. That the goals of the wetland mitigation project, including acreage and the required transition area, as stated in the approved wetland mitigation proposal and the permit have been satisfied. The permittee shall submit a field wetland delineation of the wetland mitigation project based on the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (1989) which shows the exact acreage of State open waters, emergent, scrub/shrub and/or forested wetlands in the mitigation area;
 - ii. The site has an 85 percent survival and 85 percent area coverage of the mitigation plantings or target hydrophytes, which are species native to the area and similar to ones identified on the mitigation planting plan. All plant species in the mitigation area must be healthy and thriving and all trees must be at least five feet in height;
 - iii. The site has less than 10 percent coverage by invasive or noxious species.
 - iv. The site contains hydric soils or there is evidence of reduction occurring in the soil; and,
 - v. The proposed hydrologic regime as specified in the mitigation proposal has been satisfied.
- m. The permittee is responsible for assuming all liability for any corrective work necessary to meet the success criteria established above (N.J.A.C. 7:7A-15.16(f)). The Division will notify the permittee in writing, if the mitigation project is considered to be a failure. Within 30 days of notification, the permittee shall submit a revised mitigation plan to meet the success criteria identified above for Division review and approval. The financial surety, if required, will not be released by the Division until such time that the permittee satisfies the success criteria as stipulated above.

RIPARIAN ZONE COMPENSATION CONDITIONS

1. The permittee shall submit a proposal to provide 2:1 compensation for the **permanent** conversion of 4.05 acres of forested riparian zone vegetation to herbaceous riparian zone vegetation, the permanent loss of 0.005 acres of herbaceous riparian zone and the **temporary** disturbance of 6.57 acres of herbaceous riparian zone vegetation. The onsite restoration of the temporary impacts counts toward the 2:1 requirement but to achieve 2:1 compensation, an equivalent area off-site is required for these impacts. The total amount of off-site riparian compensation that is required is 9.28 acres. The proposal shall be designed in accordance with the standards at N.J.A.C. 7:13-10.2(t) and (u).
2. **The compensation project must be conducted prior to or concurrent with the construction of the pipeline project.**
3. With the exception of tree clearing, prior to the installation of the pipeline or any construction therefor and prior to any pre-construction earth movement or site disturbance or staging, Transco shall acquire in fee all of land needed for mitigation for riparian zone compensation. Transco shall also submit to the Department proof of fully recorded conservation restrictions within ten business days of its acquisition of such land needed for riparian zone compensation. Thereafter, Transco shall hand deliver to the Department complete copies of the recorded conservation restrictions within ten business days of its receipt of said recorded instruments.

4. All restoration of temporary impacts shall be conducted immediately following completion of the activity that cause the disturbance, and shall be completed within six months after the end of the activity that caused the disturbance.
5. The permittee shall sign a Department approved conservation restriction to protect the compensation area(s) from future disturbance or development that would disturb the vegetation planted. (N.J.A.C. 7:13-10.2(t)3) The conservation restriction shall conform to the format and content of the Riparian Zone Compensation Area model located at <http://www.nj.gov/dep/landuse/forms/index.html>. The restriction shall be included on the deed and recorded in the Offices of the Somerset and Mercer County Clerks wherein the lands of the compensation project are located. A metes and bounds description shown on a map must be included as part of the recorded conservation restriction. Within 10 days of filing the conservation restriction, the permittee must send a copy of the conservation restriction to the attention of the Mitigation Unit Supervisor, NJDEP, Division of Land Use Regulation at Mail Code 501-02A, P.O. Box 420, Trenton, NJ 08625-0420.
6. The permittee shall monitor the riparian project for at least 3 years beginning the year after the riparian zone compensation project has been completed (N.J.A.C. 7:13-10.2(u)5). The permittee shall submit monitoring reports to the Division of Land Use Regulation, no later than December 31st of each full monitoring year.
 - a. All monitoring reports except the final one must include documentation and field data demonstrating that the goals of the riparian zone compensation project will be achieved as stated in the approved riparian zone compensation proposal and the permit requirements will be satisfied. If the permittee is finding problems with the compensation project and does not anticipate the site will be a full success, recommendations on how to rectify the problems shall be included in the report with a time frame in which the problems will be corrected.
 - b. The final monitoring report must include documentation and data demonstrating the following:
 - i. That the goals of the riparian zone compensation project as stated in the approved riparian zone compensation proposal and the permit conditions have been satisfied.
 - ii. That at least 85 percent of the compensation plantings have survived and that at least 85 percent of the compensation area is established with native species similar to ones identified on the compensation planting plan. All plant species in the compensation area must be healthy and thriving. All trees must be at least 5 feet in height; and
 - iii. That the site is less than 10 percent occupied by invasive or noxious species.
7. If the riparian compensation project does not meet the success criteria established above, the project shall be considered a failure and the permittee shall submit a revised riparian compensation plan. The revised plan shall be submitted within 60 days of receipt of notification from the Division indicating the riparian compensation project was a failure.

8. If the Division determines that the riparian zone compensation project is not constructed in conformance with the approved plan, the permittee will be notified in writing by the Department and will have 60 days to submit a proposal to indicate how the project will be corrected.

STANDARD CONDITIONS:

1. **Responsibilities:**

- a. The permittee, its contractors and subcontractors shall comply with all conditions of this permit, authorizing and/or supporting documents and approved plans and drawings.
- b. A copy of this permit, other authorizing documents, records and information including all approved plans and drawings shall be maintained at the authorized site at all times and made available to Department representatives or their designated agents upon request.

2. **Permit modification:** Plans and specifications in the application and conditions imposed by this permit shall remain in full force and effect so long as the proposed development or any portion thereof is in existence, unless modified by the Department. No change in plans or specifications upon which this permit is issued shall be made except with the prior written permission of the Department. The filing of a request to modify an issued permit by the permittee, or a notification of planned changes or anticipated noncompliance does not stay or modify any pre-existing condition of this permit.

3. **Duty to minimize environmental impacts:** The permittee shall take all reasonable steps to prevent, minimize or correct any adverse impact on the environment resulting from activities conducted pursuant to the permit, or from noncompliance with the permit. The permittee shall immediately inform the Department of any unanticipated adverse effects on the environment not described in the application or in the conditions of this permit. The Department may, upon discovery of such unanticipated adverse effects, and upon the failure of the permittee to submit a report thereon, notify the permittee of its intent to suspend the permit

4. **Proper site maintenance:** While the regulated activities are being undertaken, neither the permittee, its contractors nor subcontractors shall cause or permit any unreasonable interference with the free flow of a regulated feature by placing or dumping any materials, equipment, debris or structures within or adjacent to the regulated area. Upon completion or abandonment of the work, the permittee, its contractors or subcontractors shall remove and dispose of in a lawful manner all excess materials, debris, equipment, silt fences and other temporary soil erosion and sediment control devices from all regulated areas. Only clean non-toxic fill shall be used and only to the extent necessary.

5. **Sediment control:** Development which requires soil disturbance, creation of drainage structures, or changes in natural contours shall conduct operations in accordance with the latest revised version of "Standards for Soil Erosion Sediment Control in New Jersey," promulgated by the New Jersey State Soil Conservation Committee, pursuant to the Soil

Erosion and Sediment Control Act of 1975, N.J.S.A. 4:24-42 et seq. and N.J.A.C. 2:90-1.3-1.14.

6. **Rights of the State:**

- a. This permit does not convey any property rights of any sort, or any exclusive privilege.
- b. Upon notification and presentation of credentials, the permittee shall allow Department representatives or their designated agents, to enter upon the project site and/or where records must be kept under the conditions of this permit, inspect at reasonable times any facilities, equipment, practices or operations regulated or required under the permit, and sample or monitor for the purposes of determining compliance. Failure to allow reasonable access shall be considered a violation of this permit and subject the permittee to enforcement action.
- c. The issuance of this permit shall in no way expose the State of New Jersey or the Department to liability for the sufficiency or correctness of the design of any construction, structure or structures. Neither the State nor the Department shall, in any way, be liable for the loss of life or property which may occur by virtue of the activity of development resulting from any permit.

7. **Duty to Reapply:** If the permittee wishes to continue an activity covered by the permit after the expiration date of the permit authorization, the permittee must apply for and obtain a new permit authorization.

8. **Transfer of Permit:** This permit is not transferable to any person unless the transfer is approved in writing in advance by the Department. Please refer to the applicable rules for more information.

9. **Other Approvals:** The permittee must obtain any and all other applicable Federal, State and/or local approvals. Authorization to undertake a regulated activity under this permit does not indicate that the activity also meets the requirements of any other rule, plan or ordinance.

10. **Noncompliance:**

- a. Any noncompliance with this permit constitutes a violation, and is grounds for enforcement action, as well as modification, suspension and/or termination of the permit.
- b. The permittee shall immediately report to the Department by telephone at (877) 927-6337 any noncompliance that may endanger health or the environment. In addition, the permittee shall report all noncompliance to Bureau of Coastal and Land Use Compliance and Enforcement, 401 E. State Street, 4th Floor, P.O. Box 420, Mail Code: 401-04C, Trenton, NJ 08625, in writing within five business days of the time the permittee becomes aware of the noncompliance. The written notice shall include: a description of the noncompliance and its cause; the period

of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated length of time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the noncompliance. Such notice shall not, however, serve as a defense to enforcement action if the project is found to be in violation of this chapter.

11. **Appeal of Permit:** In accordance with the applicable regulations, any person who is aggrieved by this decision or any of the conditions of this permit may request a hearing within 30 days after notice of the decision is published in the DEP Bulletin. This request must include a completed copy of the Administrative Hearing Request Checklist. The DEP Bulletin is available through the Department's website at <http://www.nj.gov/dep/bulletin> and the Checklist is available through the Division's website at http://www.nj.gov/dep/landuse/download/lur_024.pdf. In addition to your hearing request, you may file a request with the Office of Dispute Resolution to engage in alternative dispute resolution. Please see the website www.nj.gov/dep/odr for more information about this process.

APPROVED PLANS:

The drawings hereby approved are a total of fifty two (52) sheets prepared by Williams.

Of which, fifteen (15) sheets, prepared by Maw Jaw Hwang, P.E., of Mustang New Jersey, Inc., **“TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC., FLOOD HAZARD AREA PERMIT, LEIDY SOUTHEAST PROJECT, PROPOSED 42” SKILLMAN LOOP M.P. 1776.79 TO M.P. 1783.00 MERCER & SOMERSET COUNTIES, NEW JERSEY”** Drawing No. 25-09-1945/059703-D, Sheet No. 1 and Drawing No 25-20-1945/059703-D Sheet Nos. 23, 5, 9, 10, 11, 16 & 17 of 17 are dated December 1, 2014 and last revised March 5, 2015.

Sheet Nos. 1, 1A, 2, 4, 6, 7, 8, 12, 13, of 17 are dated December 1, 2014 and last revised March 19, 2015.

Sheet Nos. 14 & 15 of 17 are dated December 1, 2014 and last revised March 27, 2015.

Of which, fifteen (15) sheets, prepared by Maw Jaw Hwang, P.E., of Mustang New Jersey, Inc., entitled: **“TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC., FRESHWATER WETLANDS AND OPEN WATER PERMIT, LEIDY SOUTHEAST PROJECT, PROPOSED 42” SKILLMAN LOOP, M.P. 1776.79 TO M.P. 1783.00, MERCER & SOMERSET COUNTIES, NEW JERSEY”** Drawing No. 25-26-1945/059703-D, Sheet No. 1 and Drawing No 25-20-1945/059703-D Sheets 1A, 2-13 and 13C of 13, dated December 1, 2014 and last revised March 19, 2015.

Sheet Nos. 5 and 7 of 13 are last revised March 5, 2015,

Of which, seventeen (17) sheets, prepared by Maw Jaw Hwang, P.E., of Mustang New Jersey, Inc., entitled: **“TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC., RESTORATION PLANS, LEIDY SOUTHEAST PROJECT, PROPOSED 42” SKILLMAN LOOP, M.P. 1776.79 TO M.P. 1783.00, MERCER & SOMERSET**

COUNTIES, NEW JERSEY” Drawing No. 25-26-1000/000634-D, Sheet Nos. 1, 3, 5, 9, 10, 11, & 16, of 16 are dated December 1, 2014 and last revised March 5, 2015.

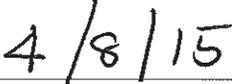
Sheet Nos. 2, 4, 6, 7, 8, 12, of 16 are dated December 1, 2014 and last revised March 19, 2015.

Sheet Nos. 13, 14, 15, & 16A of 16 are dated December 1, 2014 and last revised March 27, 2015.

If you need clarification on any section of this permit or conditions, please contact the Division of Land Use Regulation’s Technical Support Call Center at (609) 777-0454.

Approved By:


Richard C. Reilly, Manager
Bureau of Inland Regulation
Division of Land Use Regulation


Date

Original sent to Agent to record

c: Agent – Michael Gartman

Princeton Township Construction Official

Princeton Township Engineer

Montgomery Township Construction Official

Montgomery Township Construction Official

USFWS, NJ Field Office, Pleasantville, NJ – Jeremy Markuson

USEPA, Region III – Bob Montgomerie

NJDEP, CLUCE, Highlands Office – Armand Perez

NJDEP, CLUCE, Trenton Office – Maurice Nelson

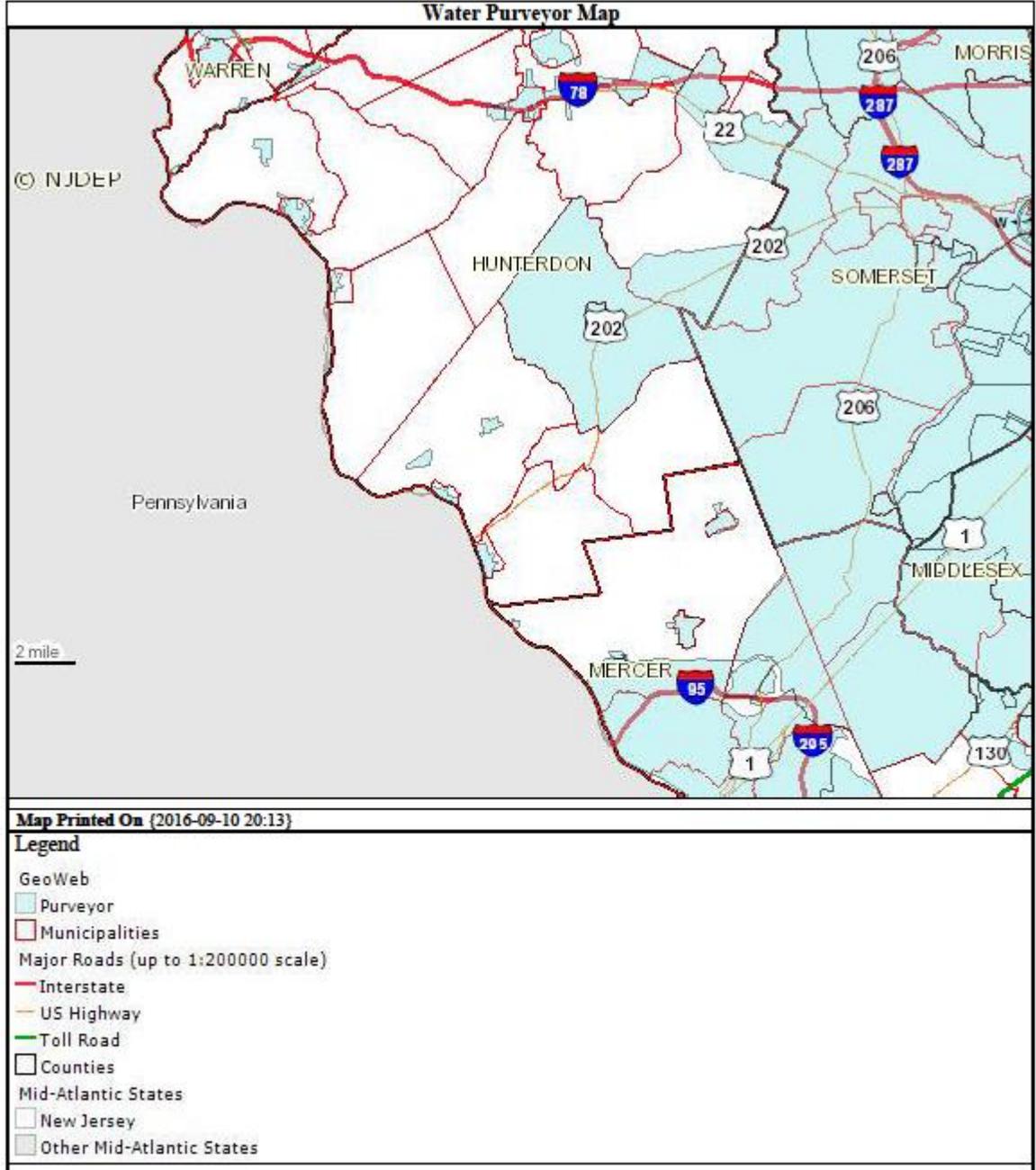


Exhibit B