



LAMBERTVILLE EAST EXPANSION PROJECT

RESOURCE REPORT 2 ***Water Use and Quality***

FERC Docket No. CP18-____-000

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RESOURCE REPORT 2 – WATER USE AND QUALITY	
Filing Requirement	Location in Environmental Report
<input checked="" type="checkbox"/> Identify and describe by milepost perennial waterbodies and municipal water supply or watershed areas, specially designated surface water protection areas and sensitive waterbodies, and wetlands that would be crossed. For each waterbody crossing, identify the approximate width, state water quality classifications, any known potential pollutants present in the water or sediments, and any potable water intake sources within 3 miles downstream.	Sections 2.3 and 2.4
<input type="checkbox"/> Compare proposed mitigation measures with the staff’s current “ <i>Wetland and Waterbody Construction and Mitigation Procedures</i> ,” which are available from the Commission Internet home page or the Commission staff, describe what proposed alternative mitigation would provide equivalent or greater protection to the environment, and provide a description of site-specific construction techniques that would be used at each major waterbody crossing.	Not applicable
<input type="checkbox"/> Describe typical staging area requirements at waterbody and wetland crossings. Also identify and describe waterbodies and wetlands where staging areas are likely to be more extensive.	Not applicable
<input checked="" type="checkbox"/> Include National Wetlands Inventory [“NWI”] maps. If NWI maps are not available, provide the appropriate state wetland maps. Identify for each crossing, the milepost, the wetland classification specified by the U.S. Fish and Wildlife Service, and the length of the crossing. Include two copies of the NWI maps (or the substitutes, if NWI maps are not available) clearly showing the proposed route and mileposts directed to the environmental staff. Describe by milepost, wetland crossings as determined by field delineations using the current federal methodology.	Appendix 2A
<input checked="" type="checkbox"/> Identify aquifers within excavation depth in the project area, including the depth of the aquifer, current and projected use, water quality and average yield, and known or suspected contamination problems.	Sections 2.2.2 and 2.2.3
<input checked="" type="checkbox"/> Describe the specific locations, the quantity required, and the method and rate of withdrawal and discharge of hydrostatic test water. Describe suspended or dissolved material likely to be present in the water as a result of contact with the pipeline, particularly if an existing pipeline is being retested. Describe chemical or physical treatment of the pipeline or hydrostatic test water. Discuss waste products generated and disposal methods.	Section 2.3.4.2
<input type="checkbox"/> If underground storage of natural gas is proposed: <ul style="list-style-type: none"> – Identify how water produced from the storage field will be disposed of, and – For salt caverns, identify the source locations, the quantity required, and the method and rate of withdrawal of water for creating salt cavern(s), as well as the means of disposal of brine resulting from cavern leaching. 	Not applicable
<input checked="" type="checkbox"/> Discuss proposed mitigation measures to reduce the potential for adverse impacts to surface water, wetlands, or groundwater quality to the extent they are not described in response to paragraph (d)(2) of this section. Discuss the potential for blasting to affect water wells, springs, and wetlands, and measures to be taken to detect and remedy such effects.	Sections 2.2.4, 2.3.4, and 2.4.2
<input checked="" type="checkbox"/> Identify the location of known public and private groundwater supply wells or springs within 150 feet of proposed construction areas. Identify locations of U.S. Environmental Protection Agency or state-designated sole-source aquifers and wellhead protection areas crossed by the proposed pipeline facilities.	Section 2.2.2

ACRONYMS AND ABBREVIATIONS

ATWS	additional temporary workspace
CEAs	Classification Exception Areas
E&SCP	Erosion and Sediment Control Plan
EDR	Environmental Data Resources, Inc.
EI	Environmental Inspector
Elizabethtown Gas	Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas
FERC	Federal Energy Regulatory Commission
gpm	gallons per minute
N.J.A.C.	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
Project	Lambertville East Expansion Project
PSEG	PSEG Power LLC
SPCC Plan	Spill Prevention, Control and Countermeasures Plan
SSA	Sole Source Aquifer
SWQS	Surface Water Quality Standards
Texas Eastern	Texas Eastern Transmission, LP
U.S.	United States
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey

2.0 RESOURCE REPORT 2 – WATER USE AND QUALITY

2.1 Introduction

Texas Eastern Transmission, LP (“Texas Eastern”) is seeking a certificate of public convenience and necessity from the Federal Energy Regulatory Commission (“FERC”) pursuant to Sections 7(b) and 7(c) of the Natural Gas Act to construct, install, own, operate, and maintain the proposed Lambertville East Expansion Project (“Project”).

The Project’s purpose is to expand the compression facilities at the Lambertville Compressor Station located in West Amwell Township, Hunterdon County, New Jersey to provide incremental pipeline transportation service to existing city-gates in New Jersey on behalf of two local utility customers, PSEG Power LLC (“PSEG”) and Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas (“Elizabethtown Gas”), as well as to comply with new air emissions regulations under the New Jersey Reasonably Achievable Control Technology program. This new firm transportation capacity will enable PSEG and Elizabethtown Gas to serve their growing residential and commercial demand in their respective service territories. To accomplish this, Texas Eastern will install two new Solar Taurus 70 natural gas-fired turbine compressor units to replace two existing higher emitting Clark DC-990 natural gas-fired turbine compressor units at the station. The replacement of the two existing units will also require removal of a building, coolers and auxiliary equipment associated with the compressor units to be removed and installation of replacement buildings, coolers and auxiliary equipment for the compressor units to be installed.

In addition, Texas Eastern will perform system maintenance activities for certain facilities at Texas Eastern’s existing Lambertville Compressor Station including the removal of four retired reciprocating compressor units and associated building, coolers and auxiliary equipment, and the removal of a warehouse and one other building. Texas Eastern will also perform yard piping modifications as part of this scope.

This Resource Report 2 (Water Use and Quality) describes the existing water resources and water quality at the Project, evaluates the potential impacts of construction and operation of the Project on those resources, and identifies proposed mitigation measures to avoid or minimize potential impacts to groundwater, surface waterbodies, and wetland resources. The information presented in this resource report, was obtained from field surveys, review of available technical literature, and consultation with various federal, state, and local regulatory agencies. A checklist showing the status of the FERC filing requirements for Resource Report 2 is included following the table of contents.

2.2 Groundwater Resources

This section describes the existing groundwater resources including groundwater use and quality in the Project area. This section also discusses the potential impacts to groundwater resources from construction and operation of the Project and methods to avoid, minimize, and mitigate those potential impacts.

2.2.1 Regional Aquifers

The Project will overlie one principal aquifer system; a sandstone aquifer. The hydraulic conductivity of sandstone aquifers is low to moderate, but because they extend over large areas, these aquifers produce high volumes of available water (Miller 1999).

2.2.2 Sensitive Groundwater Resources

Sensitive groundwater resources include the United States (“U.S.”) Environmental Protection Agency (“USEPA”) designated Sole Source Aquifers (“SSAs”), state-designated aquifers that are afforded special protection in each state, consolidated bedrock aquifers, surficial aquifers, public and private water supply wells, springs, and wellhead and aquifer protection areas. Each of these sensitive groundwater resources as they relate to the Project is discussed further below.

2.2.2.1 Sole Source Aquifers

Sole Source Aquifer designations were defined by the USEPA, pursuant to Section 1424(e) of the Safe Drinking Water Act of 1974, for an aquifer that provides a sole or principal source (greater than 50 percent) of drinking water for an area, where contamination of the aquifer could create a significant hazard to public health, and where there are no alternative water sources that could reasonably be expected to replace the water supplied by the aquifer. According to the New Jersey Department of Environmental Protection (“NJDEP”), the Project will not occur within a designated SSA (NJDEP 2017a).

2.2.2.2 State-Designated Aquifers

In addition to the USEPA-designated SSA program, individual states may enact regulations protecting significant aquifer recharge areas used for public water supplies. The NJDEP ranks aquifers in New Jersey according to median well yield in gallons per minute (“gpm”) from A (>500 gpm) to E (<25 gpm). The NJDEP produced a detailed map of various aquifer characterizations, which also indicates their respective rank (NJDEP 1998). The Project will be located within a Brunswick aquifer ranked as “C” for well yield (101-250 gpm) (NJDEP 1998; NJDEP 2017a; NJDEP 2017b). There are no specific state programs that regulate aquifers; however, there are groundwater classifications and wellhead protection area guidelines administered by the NJDEP as described in Section 2.2.2.4.

2.2.2.3 Public and Private Water Supply Wells and Springs

Texas Eastern identified public and private water supply wells and springs within 150 feet of the proposed Project workspace where access and information were available, as required by the FERC (18 Code of Federal Regulations Part 380). Based on this research, one company-owned private well is located on the Lambertville Compressor Station property for use by Texas Eastern and one well with unknown use was identified within 150 feet of the construction work area for the Project. The identified off-site well is located approximately 57 feet from the Project workspace and is on land that is owned by the New Jersey Department of Transportation. There were no other public or private wells or springs identified within 150 feet of the construction work area for the Project.

2.2.2.4 Wellhead and Aquifer Protection Areas

The NJDEP puts forth groundwater classifications through the administration of the Ground Water Quality Standards rules found in New Jersey Administrative Code (“N.J.A.C.”) 7:9C. The classifications consist of Class I – Ground Water of Special Ecological Significance; Class II – Ground Water for Potable Water Supply; and Class III – Ground Water with Uses Other Than Water Supply (NJDEP 2016a). The Wellhead Protection Program of New Jersey is designed to prevent contamination of groundwater resources through pollution source inventories, use of best management practices, land use planning and education (Spayd and Johnson 2003). An additional component under the Source Water Area Protection Program requires delineation of wellhead protection areas surrounding Public Community Water Supply wells in order to

map the horizontal extent of groundwater serving any particular well (NJDEP 2016b). No wellhead protection areas occur within 150 feet of the proposed Project.

2.2.3 Contaminated Groundwater

Within the proposed Project workspace, two areas have been classified as Classification Exception Areas (“CEAs”). CEAs are areas within which the NJDEP constituent standards and designated uses of groundwater are not or will not be met. No excavation is proposed in these areas as part of the Project.

Texas Eastern conducted field and database research to identify, to the extent feasible, facilities with potentially impacted groundwater within one-quarter mile of the Project area. A search completed by Environmental Data Resources, Inc. (“EDR”) identified various types of potential and actual sources of contamination to groundwater resources and/or soils near the Project. Information from EDR is a compilation of a variety of available federal, state, and local government databases. A list of identified sites within one-quarter mile of the Project area is presented in Table 8.4-1 of Resource Report 8. A discussion of contaminated soils is provided in Resource Report 7, and hazardous waste sites are discussed in Resource Report 8.

It is unlikely that any of the sites identified in the EDR report will pose any construction-related issues to the Project based on a review of regulatory status (*i.e.*, all closed, no violations found) and/or media impacted (*i.e.*, soil only). If contaminated media is discovered during construction, Texas Eastern will adhere to its waste management procedures and applicable federal and state regulations.

2.2.4 Groundwater Impacts and Mitigation

Construction activities associated with the Project that have the potential to impact groundwater include shallow excavations, hydrostatic test discharges, and potential spills or leaks of hazardous liquids from the refueling of construction vehicles or storage of fuel, oil, and other fluids. Proposed Project facilities will completely avoid CEA’s at the site identified in Section 2.2.3.

In the unlikely event that contaminated groundwater is encountered, Texas Eastern will implement proper groundwater management procedures at the intersection of the Project-related construction activities with contaminated groundwater sites to avoid or minimize potential impacts to groundwater. Depending on the volume requiring management, groundwater management procedures may include the use of portable treatment systems and/or may include transporting groundwater to a treatment facility, as permitted. Additionally, clay trench breakers or the equivalent may be utilized if necessary to prevent the potential migration of contaminated groundwater.

Short-term and highly localized impacts on groundwater could potentially occur during various construction stages, particularly during clearing, grading, and trench excavation. During construction, local water table elevations could be temporarily affected by trenching and backfilling. In locations where groundwater is near the surface, trench excavation may intersect the water table in low-lying areas. Each of these possible impacts is short-term and temporary. Long-term impacts on groundwater resources are not anticipated as a result of the Project.

Potential spills or leaks of hazardous liquids resulting from refueling construction vehicles or storing fuel, oil, and other fluids during construction could contaminate groundwater. The Spill Prevention, Control and Countermeasures Plan (“SPCC Plan”) for construction addresses preventative measures to be used to minimize the potential impacts of a hazardous material spill on groundwater resources (Appendix 1B of Resource Report 1). Spill reporting requirements will be conducted in accordance with all federal, state, and local regulations.

2.3 Surface Water Resources

2.3.1 Watersheds

The Project will be located within one watershed as defined by the U.S. Geological Survey (“USGS”) at the 12-digit hydrologic unit code or sub-basin level, which is the Alexauken Creek-Delaware River Watershed (hydrologic unit code 020401050907). Watersheds in New Jersey are grouped into 20 different Watershed Management Areas. The Alexauken Creek-Delaware River Watershed is located within the Watershed Management Area 11 (Central Delaware), which includes approximately 272 square miles and is dominated by Assunpink Creek and its tributaries to the south and much smaller streams in the northern portions (NJOEM 2014).

2.3.2 Waterbodies

A waterbody, as defined by the FERC, is “any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing and other permanent waterbodies such as ponds and lakes.” Potential surface water resources at the Project were initially identified using USGS 7.5-minute topographic maps and then field verified during waterbody and wetland delineation surveys completed by Texas Eastern in 2017. Wetland and waterbody surveys encompassed all construction work areas.

Two surface waterbodies are crossed by the proposed Project (*see* Figure 2.3-1). Both waterbodies are unnamed tributaries to Alexauken Creek and flow through existing culverts at the locations where the workspace crosses them. No waterbodies were identified within the proposed additional temporary workspace (“ATWS”) located outside of the compressor station facility, however, an intermittent tributary is located just outside of the ATWS limits to the west.

The first waterbody to be crossed by the Project, identified as SOW-A, is an intermittent waterbody approximately 12 feet wide with a substrate that consists mostly of rip rap. The second waterbody to be crossed by the Project, identified as SOW-B, is an ephemeral waterbody approximately two feet wide with a substrate that consists of rip rap in sections and cobble/gravel in others. As previously mentioned, both waterbodies are contained within culverts at Project workspace crossing locations.

2.3.3 Surface Water Quality Classification

The NJDEP classifies surface waters of New Jersey based on the type and designated use of a waterbody. Freshwaters are classified as FW1 (no man-made wastewater discharges) and FW2 (all other waters except Pinelands waters) (NJDEP 2016c). Further classification is based on the status of trout in the waterbody: trout production (FW2-TP), trout maintenance (FW2-TM), and non-trout (FW2-NT). The full written standards for surface waters in New Jersey are found in the Surface Water Quality Standards (“SWQS”) rules (N.J.A.C. 7:9B). As described above, the two streams crossed by Project are unnamed tributaries to Alexauken Creek. Alexauken Creek is classified as a FW2-TMC1 water pursuant to the NJDEP SWQS at N.J.A.C. 7:9B-1.15, indicating that it is a freshwater trout maintenance Category 1 stream. Category 1 waters have exceptional ecological, recreational, water supply, or fisheries significance. In accordance with the NJDEP SWQS, both unnamed tributaries to Alexauken Creek that occur at the proposed Project site are also classified as FW2-TMC1.

2.3.4 Surface Water Impacts and Mitigation

2.3.4.1 Potential Impacts

Construction activities associated with the Project that have the potential to impact surface waters include clearing and grading activities, hydrostatic test discharges, and spills or leaks of hazardous liquids from refueling construction vehicles or storing fuel, oil, and other fluids.

Construction activities adjacent to surface waters can result in temporary and long-term adverse environmental impacts if not properly completed. However, proper construction techniques and timing can ensure that any such impacts are both temporary and minor. Surface runoff and erosion from cleared land can also increase in-stream sedimentation during construction. Other potentially deleterious impacts include accidental hazardous material spills resulting from refueling/maintaining construction equipment, inappropriate fuel storage in or near a waterbody, or equipment failure in or near a waterbody. Such events could have immediate effects on aquatic resources and could contaminate the waterbody downstream of the release point.

Long-term impacts on water quality can result from alteration of stream banks and removal of riparian vegetation. If not stabilized and revegetated properly, soil erosion associated with surface runoff and stream bank sloughing can result in the deposition of large quantities of sediment into the waterbody. Prolonged periods of exposure to high levels of suspended solids have been linked to fish egg and fry mortality and degradation of spawning habitat from the infiltration of sediments within the interstitial spaces of streambed gravel. The removal of riparian vegetation tends to increase light penetration into the waterbody, possibly increasing water temperature, which can have negative impacts to coldwater fisheries. Potential impacts on fisheries resources from sedimentation are discussed further in Resource Report 3.

2.3.4.2 Hydrostatic Test Water

As major parts of the piping are completed, each will be hydrostatically or pneumatically tested to ensure its integrity prior to being placed in service. Texas Eastern estimates that approximately 43,000 gallons of water will be needed for hydrostatic testing of the Project facilities. This water will be obtained from a local, non-potable water supplier and trucked to the site. Testing of pipeline facilities will be completed by capping installed pipe segments with test manifolds, filling these segments with water, and pressurizing this water to levels beyond the maximum operating pressure of the pipeline. The water will be maintained at that pressure for a minimum of 8 hours. Hydrostatic testing will be conducted in a manner that meets or exceeds the U.S. Department of Transportation's "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards" (49 Code of Federal Regulations Part 192).

Depending on site conditions and constraints at the time of construction, hydrostatic test water may be held in storage tanks and transported to an approved facility, discharged to the site's stormwater management system, or discharged to upland areas onsite. If discharged onsite, environmental impacts from the discharge will be minimized by using the measures prescribed in the E&SCP and will comply with appropriate permits.

The Project facilities to be hydrostatically tested will consist of new pipeline materials; therefore, if discharged to upland areas onsite, hydrostatic test water is not anticipated to impact surface waters once it enters such waters.

2.3.4.3 Mitigation and Restoration Measures

To minimize impacts to waterbodies during construction, operation, and maintenance, the Project will be constructed in accordance with the best management practices outlined in the E&SCP (Appendix 1B, Resource Report 1) and with all federal and state regulations and permit requirements.

Any hazardous materials, chemicals, lubricating oils, solvents, or fuels used during construction will be stored in upland areas at least 100 feet from wetlands and waterbodies as required by the E&SCP. All such materials and spills (if any) will be handled in accordance with the SPCC Plan (Appendix 1B, Resource Report 1). Construction equipment and vehicle refueling and lubricating will occur in upland areas located more than 100 feet from the edge of a waterbody, except under limited, highly controlled circumstances and under direct supervision of the Environmental Inspector (“EI”). Under no circumstances will refuse be discarded in waterbodies, trenches, or within the Project workspace. In accordance with the SPCC Plan, routine inspections of tanks and storage areas will occur to reduce the potential for hazardous materials spills.

Once construction is complete, Project temporary workspaces will be restored to approximate the pre-existing conditions. There will be no long-term impacts on water quality as a result of facility operations and maintenance as there will be no expansion in the amount of cleared land. Any disturbed riparian areas will be revegetated with conservation grasses and legumes in accordance with the recommended Upland Seed Mix in Appendix B of the E&SCP. Where necessary, slope breakers (*i.e.*, interceptor dikes) will be installed adjacent to stream banks to minimize the potential for erosion. Temporary sediment barriers, such as silt fence or straw bales, will be maintained at the facility until permanent vegetative cover is established.

2.4 Wetlands

Wetlands are defined by the U.S. Army Corps of Engineers as areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and bottomlands.

Wetland types were assigned based on the National Wetlands Inventory classifications as described by Cowardin et al., 1979. This classification is a hierarchical system based primarily on the general classification into marine, estuarine, palustrine (freshwater wetland), riverine (stream), or lacustrine (lake) systems, as well as the dominant vegetation layer. No wetlands occur within the Project workspace, however, there were wetlands identified in close proximity to the Project, and are described below.

2.4.1 Wetlands Adjacent to the Project

Five wetlands were delineated adjacent to the proposed Project workspace within the Lambertville Compressor Station property. Wetland extents at the compressor station were verified by the NJDEP through its Letter of Interpretation Line Verification process in March of 2017. One wetland (FW-B) is associated with an unnamed ephemeral tributary to Alexauken Creek, identified as SOW-B (*see* Appendix 2A). Wetland FW-B is a PEM wetland occurring in a low-lying area and is dominated by the invasive reed canary grass (*Phalaris arundinacea*). Four PEM wetlands (FW-C, FW-D, FW-E, and FW-F) are associated with an unnamed intermittent tributary to Alexauken Creek identified as SOW-A (*see* Appendix 2A). These wetlands receive stormwater runoff that collects in depressions in the local topography adjacent to waterbody SOW-A. The dominant vegetation in these wetlands include broad-leaved cattail (*Typha latifolia*), lance-leaved tickseed (*Coreopsis lanceolata*), nut umbrella sedge (*Cyperus esculentus* var. *leptostachyus*), and the invasive purple loosestrife (*Lythrum salicaria*). No wetlands are located within or adjacent to the Project workspace located outside of the Lambertville Compressor Station property.

2.4.2 Wetland Impacts and Mitigation

Construction of the Project will not result in any direct wetland impacts, as there are no wetlands crossed by the Project workspace. Prior to ground disturbing activities, boundaries of wetland located near Project workspaces will be clearly marked in the field and maintained until construction-related ground-disturbing activities are complete. Silt fences and/or straw bales will be installed at the edges of the construction work area adjacent to wetlands.

2.4.2.1 Hazardous Materials Spills

Texas Eastern has prepared a SPCC Plan to address the handling of construction fuel and other materials (*see* Appendix 1B of Resource Report 1). Except in circumstances specified in the SPCC Plan, potential impacts to water quality will be avoided while work is being performed near wetlands and other waterbodies by implementing the following measures:

- Construction materials, fuels, etc. will not be stored within wetlands or within 100 feet of any stream or wetland system, except under limited, highly controlled circumstances;
- Construction equipment will not be refueled within wetlands or within 100 feet of any stream or wetland system, except under limited, highly controlled circumstances and under direct supervision of the EI;
- Construction equipment will not be washed in any wetland or watercourse; and
- Equipment will be well maintained and checked daily for leaks.

2.4.2.2 Mitigation and Restoration Measures

The E&SCP was developed using the FERC's Upland Erosion Control, Revegetation, and Maintenance Plan and the FERC's Wetland and Waterbody Construction and Mitigation Procedures. Reflected in the E&SCP is Texas Eastern's significant experience and practical knowledge of pipeline construction and effective environmental protection measures. Lessons and insights gained from past construction projects have been incorporated into the E&SCP. Applicable recommended practices include, where feasible:

- Expediting construction near wetlands;
- Permanently stabilizing upland areas near wetlands as soon as practicable to reduce sediment runoff;
- Using recommended seed mixes as specified by relevant land management agencies; and
- Periodically inspecting the construction area during and after construction.

2.5 References

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. FWS/OBS-79/31, Washington, D.C.

Miller, James A. 1999. *Ground Water Atlas of the United States*. U.S. Geological Survey Introduction and National Summary. Available online at: [http://pubs.usgs.gov/ha/ha730/ch_a/A-text4.html]. Accessed September 18, 2017.

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