

Texas Eastern Transmission, LP

Docket No. CP19-509-001

Marshall County Mine Panels 19E and 20E Project

Environmental Assessment

Washington, DC20426

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TECHNICAL ACRONYMS AND ABBREVIATIONS

AMSL	above mean sea level
APE	area of potential effects
AQCR	Air Quality Control Region
ATWS	Additional temporary workspace
BMP	Best Management Practices
Certificate	Certificate of Public Convenience and Necessity
CAA	Clean Air Act of 1963
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CO ₂	carbon dioxide
CO2 _e	carbon dioxide equivalents
Commission	Federal Energy Regulatory Commission
CWA	construction work area
dB	decibel
dBA	A-weighted decibel
DOT	U.S. Department of Transportation
E&SCP	Erosion and Sediment Control Plan
EA	environmental assessment
ECD	erosion control device
EI	environmental inspector
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act of 1973
FDCP	Fugitive Dust Control Plan
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FWS	U.S. Fish and Wildlife Service
g	gravity
GHG	greenhouse gas
GWP	global warming potential
HAP	hazardous air pollutants
hp	horsepower
HUC	hydrologic unit code
L _{eq}	equivalent sound level
L _{dn}	day-night sound level
M&R	Meter and Regulator
MAOP	maximum allowable operating pressure
Marshall Coal	Marshall County Coal Company
MBTA	Migratory Bird Treaty Act of 1918

MOU	Memorandum of Understanding
MP	milepost
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NESHAP	National Emission Standards for Hazardous Air Pollutants
NGA	Natural Gas Act
NHPA	National Historic Preservation Act of 1966
NNSR	Nonattainment New Source Review
NO ₂	nitrogen dioxide
NOx	nitrogen oxides
N ₂ O	nitrous oxide
NOI	Notice of Intent to Prepare an Environmental Assessment for the
	Proposed Marshall County Mine Panels 19E and 20E Project and
	Request for Comments on Environmental Issues
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NSA	noise sensitive area
NSPS	New Source Performance Standards
OEP	Office of Energy Projects
Order	FERC's Order Issuing Certificate
Pb	lead
PCB	polychlorinated biphenyl
PADCNR	Pennsylvania Department of Conservation and Natural Resources
PASHPO	Pennsylvania State Historic Preservation Office
PGA	peak ground acceleration
Plan	FERC's Upland Erosion Control, Revegetation, and Maintenance Plan
PM _{2.5}	particulate matter with an aerodynamic diameter less than or equal to 2.5
	microns
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to 10
	microns
PNDI	Pennsylvania Natural Diversity Index
Procedures	FERC's Wetland and Waterbody Construction and Mitigation
	Procedures
Project	Marshall County Mine Panels 19E and 20E Project
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act 1976
Secretary	Secretary of the Commission
SHPO	State Historic Preservation Officer
SO2	sulfur dioxide
SPCC Plan	Spill Prevention, Control, and Countermeasure Plan
Texas Eastern	Texas Eastern Transmission, LP
TAR	temporary access road
tpy	tons per year
	iv

USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
VOC	volatile organic compound
Williams	Williams Pipeline Company
WVDEP	West Virginia Department of Environmental Protection
WVDNR	West Virginia Department of Natural Resources
WVGES	West Virginia Geological and Economic Survey
WVSHPO	West Virginia State Historic Preservation Office

A. PROPOSED ACTION

1.0 Introduction

The staff of the Federal Energy Regulatory Commission (Commission or FERC) has prepared this environmental assessment (EA) to assess the environmental effects of a natural gas pipeline project proposed by Texas Eastern Transmission, LP (Texas Eastern) in Marshall County, West Virginia.

On December 19, 2019 Texas Eastern filed an amendment (Amendment) under the Natural Gas Act, Section 7(c) and Part 157 of the Commission's regulations to its Abbreviated Application for a Certificate of Public Convenience and Necessity and for Related Authorizations for its proposed Marshall County Mine Panel 19E Project, submitted on September 4, 2019 in Docket No. CP19-509-000. By the Amendment filed in Docket No. CP19-509-001, Texas Eastern requests authorization to excavate, elevate, and replace certain segments of its pipelines that traverse the Marshall County Coal Company's (Marshall Coal) Mine Panels 19E and 20E, located in Marshall County, West Virginia, and is referred to as the Marshall County Mine Panel 19E and 20E Project (Project). The Amendment reflects activities related to both Mine Panels 19E and 20E, and the construction activities proposed replace in their entirety the construction activities proposed in the original application.

Marshall Coal informed Texas Eastern that longwall mining activities for Mine Panel 20E may begin as early as August of 2021. As such, Texas Eastern would need to commence activities to protect its pipelines that traverse Mine Panel 20E concurrent with its planned activities to protect its pipelines that traverse Mine Panel 19E (longwall mining activities in Mine Panel 19E are anticipated to begin in October 2020) in order to ensure timely stabilization of the pipeline segments above ground for the duration of the longwall mining activities scheduled to take place at both Mine Panels. Completion of longwall mining activities and potential subsidence is anticipated in December 2020 for Mine Panel 19E and in October 2021 for Mine Panel 20E. As such, Texas Eastern is seeking to amend the timing for completion of Project activities from October 2021 to October 2022, prior to the start of Texas Eastern's winter heating season.

We¹ prepared this EA in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality regulations for implementing NEPA (Title 40 of the Code of Federal Regulations, parts 1500-1508 [40 CFR 1500-1508]), and the Commission's implementing regulations under 18 CFR 380. The assessment of the environmental impacts is an important and integral part of the Commission's decision on whether to issue Texas Eastern a Certificate of Public Convenience and Necessity (Certificate) to construct, operate, and maintain the Project facilities.

¹ "We," "us," and "our" refers to the environmental staff of the Commission's Office of Energy Projects.

2.0 Purpose and Need

Texas Eastern states the Project is needed to ensure the safe and continued operation of the four Texas Eastern pipeline facilities that otherwise could be adversely affected as a result of Marshall Coal's longwall mining activities. Marshall Coal has informed Texas Eastern that, beginning as early as October 2020 for Mine Panel 19E, and as early as August 2021 for Mine Panel 20E, longwall mining activities are expected to take place beneath Texas Eastern's pipelines. The purpose of the Project is to minimize risk to the integrity of the pipelines and the potential interruption of service. Texas Eastern has designed the Project to protect Texas Eastern's facilities that traverse Mine Panels 19E and 20E and to ensure that certificated levels of service are maintained for the duration of the longwall mining activities and until ground subsidence has stabilized. The Project would not result in changes to any of Texas Eastern's currently certificated capacities or maximum allowable operating pressure.

Under section 7(c) of the Natural Gas Act (NGA), the Commission determines whether interstate natural gas transportation facilities are in the public convenience and necessity and, if so, grants a Certificate to construct and operate them. The Commission bases its decisions on both economic issues, including need, and environmental impacts concerning a proposed project.

3.0 Public Review and Comment

On October 1, 2019, the Commission issued a Notice of Intent to Prepare an Environmental Assessment for the Proposed Marshall County Mine Panel 19E Project and Request for Comments on Environmental Issues in Docket No. CP19-509-000. The document was sent to affected landowners; owners of minerals rights; federal, state, and local government agencies; elected officials; Native American tribes; other interested parties; and local libraries and newspapers. One comment letter was filed by Texas Eastern from The Delaware Nation Historic Preservation Department. On December 19, 2019, Texas Eastern filed an amendment to its application in Docket No. CP19-509-001. On January 13, 2020, the Commission issued a Notice of Intent to Prepare an Environmental Assessment for the Proposed Marshall County Mine Panel 19E and 20E Project and Request for Comments on Environmental Issues (NOI) in Docket No. CP19-509-001. The NOI was sent to affected landowners; owners of minerals rights; federal, state, and local government agencies; elected officials; Native American tribes; other interested parties; and local libraries and newspapers. In response to the NOI, a comment letter was received from the Osage Nation Historic Preservation Office requesting that a cultural resource survey be conducted for the Project. In addition, a comment letter was received from the U.S. Army Corps of Engineers (USACE). The primary issues raised by the USACE are impacts to streams and wetlands and permitting requirements. All substantive comments are addressed in this EA.

4.0 **Proposed Facilities**

Texas Eastern's existing Lines 10, 15, 25, and 30 are all located in Marshall County, West Virginia. Specific activities for the Project are detailed below:

- Excavate and replace an approximate 5,811-foot section of 30-inchdiameter Line 10 from milepost (MP) 722.1 to MP 723.2 (Mine Panels 19E from MP 722.1 to MP 722.6 and 20E from MP 722.6 to MP 723.2);²
- Excavate and replace an approximate 5,768-foot section of 30-inchdiameter Line 15 from MP 722.6 to MP 723.7 (Mine Panels 19E from MP 722.6 to MP 723.1 and 20E from MP 723.1 to MP 723.7);²
- Excavate an approximate 5,853-foot section of 36-inch-diameter Line 25 from MP 41.8 to MP 42.9 (Mine Panels 19E from MP 41.8 to MP 42.2 and 20E from MP 42.2 to 42.9); and
- Excavate an approximate 5,724-foot section of 36-inch-diameter Line 30 from MP 722.6 to MP 723.7 (Mine Panels 19E from MP 722.6 to MP 723.0 and 20E from MP 723.0 to MP 723.7).

All excavated pipelines would be elevated (except where noted below), offset from the backfill trench, and hydrostatically tested before placing it back into service for the duration of mining activities. They would also be monitored for stress and strain levels from potential ground subsidence during mining activities. Following mining activities, all pipeline segments would be reinstalled below ground surface, hydrostatically tested, and placed back into service.

At Gosney Hill Road segments of Lines 10, 15, 25, and 30 would not be elevated, but would each be placed inside a 40-foot-long, 84-inch-diameter culvert, which would be installed under Gosney Hill Road by open cut prior to the commencement of longwall mining activities. This would allow Gosney Hill Road to remain open to road traffic during the potential subsidence period.

Additionally, at Route 250, segments of Lines 10, 15, 25, and 30 would not be elevated, but would each be placed inside a 90-foot-long, 132-inch-diameter culvert, which would be installed under Route 250 by a road bore prior to the commencement of mining activities. This would allow Route 250 to remain open to road traffic during the potential subsidence period. The culverts would be installed approximately 10 feet south

² Lines 10 and 15 were installed prior to the enactment of the Natural Gas Pipeline Safety Act and are grandfathered to operate at greater than 72 percent of Specified Minimum Yield Strength (SMYS). The portions of these pipelines included in this Project would be replaced with pipe that meets or exceeds the current Pipeline and Hazardous Materials Safety Administration regulations. *See* 49 CFR § 192.611(a) (2019).

of the existing pipe casings at the Route 250 road crossing. Following completion of mining activities on Mine Panel 20E, the pipeline segments beneath Route 250 would remain in the new culverts and would be permanently offset from their original configuration.

Aboveground Facilities

Texas Eastern confirms that no foreign pipelines other than Williams Pipeline Company's (Williams)' 20-inch-diameter pipeline at approximately survey station number (SSN) 38157+50, are connected to its system in the location of the Project facilities. The Williams pipeline connects to Texas Eastern at the Williams Meter and Regulator (M&R) Station 73656 via interconnecting piping and valves installed from the meter station to each of Texas Eastern's Lines 10, 15, 25, and 30.

At the interconnection between Texas Eastern and Williams' 20-inch-diameter pipeline, the interconnecting piping and valves would be disconnected at Texas Eastern's Lines 10, 15, and 30 and the valves would be replaced with straight pipe for the duration of the mining and potential subsidence period. The existing valves are located belowground, and the temporary straight pipe segments would be elevated during the potential subsidence period. After Line 25 is elevated, Texas Eastern plans to install a temporary valve on Line 25 to enable Texas Eastern to receive gas from Williams' 20inch-diameter pipeline through M&R 73656 during the duration of the construction activities. The temporary tap would be disconnected from M&R 73656 and replaced with straight pipe prior to the longwall mining and potential subsidence period. The timing for the temporary tap installation would be coordinated with Williams as it separately prepares its facilities for longwall mining.

After the mining and potential subsidence period ends, Texas Eastern would reinstall the tap valves and interconnecting piping in their former alignment belowground. Texas Eastern also indicates that the Williams M&R Station 73656 facilities are built on concrete piers with footers. Prior to reinstallation of the tap valves, a third party consultant would inspect and analyze the M&R station facilities to ensure the facilities are fit for service.

Additionally, three existing mainline valves that are no longer required to be located west of Route 250 would be permanently removed and replaced with straight pipe. The valve to be removed on Line 10 is located at MP 722.8, the valve to be removed on Line 15 is located at MP 723.3, and the valve to be removed on Line 30 is located at MP 723.3. Table 1 lists the description of the pipeline facilities. Maps of the Project are shown in figure 1 and 2.



Figure 1: Panel 19E and 20E Construction Workspace

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Figure 2: Bristoria Wareyard

Non-Jurisdictional Facilities

No non-jurisdictional facilities are associated with the Project.

5.0 Construction, Operation, and Maintenance Procedures

Texas Eastern would construct, operate, and maintain the Project in compliance with all applicable federal and state permit requirements, regulations, and environmental guidelines, including the U.S. Department of Transportation (DOT) under 49 CFR 192 - Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards. During all phases of the Project, Texas Eastern would follow the applicable Occupational Safety and Health Administration Requirements.

Texas Eastern would construct the Project in accordance with its Erosion and Sediment Control Plan (E&SCP), which complies with the requirements of FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and FERC's *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures) except as noted in the water resources section of this EA.³ Texas Eastern states that the E&SCP would be submitted to the West Virginia Department of Environmental Protection (WVDEP) for review and approval. Additionally, Texas Eastern would use its Spill Prevention, Control, and Countermeasures Plan (SPCC Plan) during construction. We have reviewed Texas Eastern's E&SCP and believe it is acceptable for the project.

Further, Texas Eastern submitted a Winter Stabilization and Monitoring Plan (WSMP) that supplements Texas Eastern's E&SCP and includes measures how Texas Eastern would stabilize and monitor the right-of-way, manage snow, and respond to any pipeline integrity issues during the winter season. We have reviewed the WSMP and find it is adequate for the Project.

The Project construction activities would follow a general construction sequence of surveying, clearing, grading and trenching for pipe removal. The sequence for Lines 10, 15, 25, and 30 would continue with pipe removal, pipe replacement (for Lines 10 and 15), elevation, trench backfilling, hydrostatic testing, and installation of stabilization structures and temporary restoration for the period of longwall mining and potential subsidence when the pipelines are elevated.

Topsoil segregation would occur along the entire construction work area (CWA). During grading, topsoil would be stripped and placed into spoil piles to prevent the

³ Our Plan and Procedures may be found on the FERC website at: <u>http://www.ferc.gov/industries/gas/enviro/plan.pdf</u> and <u>http://www.ferc.gov/industries/gas/enviro/procedures.pdf</u>.

mixing of topsoil with subsoil. Topsoil piles would be stabilized with seed and mulch. In upland areas segregated topsoil would be stored in piles along the right-of-way and replaced during final restoration after mining activities are completed.

The pipeline trenches would be backfilled and the right-of-way would be temporarily restored during the period when the pipelines are elevated aboveground. Strain gauges would be attached to the aboveground pipelines during the elevation process, and access between the pipelines would be maintained for monitoring and maintenance during the mining and potential ground subsidence period. Texas Eastern would paint all pipelines while they remain in an elevated position to protect the pipelines' epoxy coating. According to the manufacturer's protective specifications, the paint contains titanium dioxide, a pigment which protects the pipe from damage due to ultraviolet rays until it is lowered back into the ground.

The general re-installation sequence would continue with trenching to re-install or reconnect the pipelines; backfilling; hydrostatic testing; tie-in; and final cleanup and restoration. During the re-installation, the sections of Lines 10 and 15 that had been replaced before being elevated aboveground would be placed in the original pipeline alignments, hydrostatically tested, and placed into service. The original segments of Lines 25 and 30 would also be placed within their original alignments, hydrostatically tested.

Ten wetlands and nine waterbodies identified during field surveys conducted in April, July, and October 2019 are located within the CWA and would have proposed impacts. Project construction techniques for features within the CWA would adhere to the E&SCP. Modifications to FERC's Procedures are discussed in the water resources section of this EA.

Wetlands within the CWA would be temporarily impacted during construction. Disturbance would be limited to two discrete activities: initial construction to elevate the pipelines, and reburial of the pipelines following ground subsidence. In accordance with FERC's Procedures, prior to excavating the pipelines, temporary erosion control devices would be installed as necessary to prevent sediment flow into wetlands adjacent to the CWA and topsoil would be segregated from the area that would be disturbed by trenching. Once the pipelines have been elevated, the segregated topsoil would be replaced and restored using an appropriate wetland seed mix. A travel lane constructed of timber mats would be installed across wetlands located within the CWA to prevent rutting and facilitate equipment crossing over the wetland. Prior to pipeline reburial (i.e., after pipe has been assembled and is ready for lowering in), topsoil would be segregated from the area to be disturbed by trenching. Following pipeline reburial and backfilling, Texas Eastern would facilitate wetland reestablishment by immediately replacing segregated topsoil, using an appropriate wetland seed mix, and monitoring for invasive species.

At waterbodies crossed by the pipeline, Texas Eastern would temporarily install the pipeline above these waterbodies with sufficient clearance over the streams to prevent restriction of stream flow during high-flow events. Texas Eastern also plans to install timber mat equipment bridges across all waterbodies located within the CWA to allow access to the site and elevated pipelines. The temporary equipment bridges used during the Project would be removed after mining activity ceases and the pipelines are reinstalled in their original alignments belowground. Further details regarding wetland and waterbody construction techniques are provided in the water resources section of this EA.

Texas Eastern states it may encounter buried utilities throughout the CWA. Before beginning construction activities, Texas Eastern would contact the West Virginia "One Call" system as well as the national "811" call system to identify and mark underground utilities and foreign pipelines. Trenching in the vicinity of these utilities and pipelines would begin only after appropriate notification procedures are complete. The locations of buried utilities would also be confirmed through potholing or other methods prior to construction of the pipeline, and, when possible, the depth and orientation of the buried utility would be determined.

Texas Eastern has verified the configuration of its pipelines and the foreign pipelines that cross, but do not connect to, Texas Eastern's pipelines. The 24-inchdiameter existing Williams' pipeline at SSN 38167+33 and 20-inch-diameter existing Williams' pipeline at SSN 38162+20 cross beneath Texas Eastern's Lines 10, 15, 25, and 30. The UGI pipeline 1758-010 at SSN 38166+55 crosses above Texas Eastern's Lines 10, 15, 25, and 30, and the TC Energy pipeline 10100-0030 at SSN 38167+13 cross above Texas Eastern's Lines 25 and 30, and beneath Lines 10 and 15. Texas Eastern would work cooperatively with foreign pipeline owners and would design and construct the Project to avoid or minimize effects on existing utility lines. In order to ensure that disruption or damage would not occur to foreign pipelines that are located above or below Texas Eastern's pipelines, Texas Eastern would maintain a minimum of 18 inches of separation between its mechanical equipment and any foreign pipeline. If the foreign pipeline has a different required minimum distance of separation, Texas Eastern would maintain the more stringent of the two distances. Texas Eastern would also implement additional protection, such as placing corrugated piping or equivalent around the foreign lines, when additional protection is deemed necessary due to site conditions or proposed construction activities. Texas Eastern plans to utilize equipment bridges over any foreign pipeline ditches in the travel lanes between Texas Eastern's above-grade pipelines, to provide access during Project construction activities as well as for monitoring activities during longwall mining and potential ground subsidence. Texas Eastern would provide each of the foreign pipeline operators with an opportunity to have a representative present during such construction activities in the intersecting and overlapping rights-of-way.

Texas Eastern also indicates that it has been meeting with the operators of the foreign pipelines on a monthly basis to coordinate construction activities, including construction methods, outages, and access to ensure that the Project would not affect the other operators' ability to monitor their infrastructure during mining and subsidence activities, and vice versa. The foreign pipelines are expected to remain in place, but in an excavated trench. Texas Eastern would maintain a safe distance from the foreign pipelines at all times during excavation, elevation, and reburial of the pipelines.

In addition, weekly meetings are planned with these other operators during Project construction to continue coordinating construction activities, in order to ensure that the Project would not affect the other operators' ability to monitor their infrastructure during mining and subsidence activities, and vice versa.

No blasting activities are proposed as part of the Project. In the unlikely event that blasting is necessary, Texas Eastern would obtain all necessary permits and approvals and prepare a detailed blasting plan in accordance with pertinent regulations and the FERC's Plan.

Construction Schedule

Tree clearing and site preparation activities are scheduled to begin in May 2020. Initial construction activities are expected to be completed in October 2020, prior to the start of longwall mining activities on Mine Panel 19E. Texas Eastern's pipelines would be returned to service and would operate aboveground and would be monitored during the period of ground subsidence associated with mining activities. Reburial of the pipelines below grade is planned to begin in April 2021 for Mine Panel 19E, and April 2022 for Mine Panel 20E, after the cessation of ground subsidence and following the winter heating season in 2022. The Project is expected to be completed and all pipeline segments returned to service by October 2022.

6.0 Land Requirements

Land requirements for the Project are provided in table 1. Project activities would occur primarily within and adjacent to Texas Eastern's existing pipeline right-of-way. The total CWA required for the Project right-of-way is approximately 41.2 acres. Texas Eastern plans to use a construction right-of-way approximately 200 feet wide for activities on all four pipelines. Approximately 125 feet of the width of the construction corridor consists of existing maintained right-of-way. An additional 25 feet beyond the existing right-of-way to the north and 50 feet beyond the existing right-of-way to the south is needed to accommodate construction.

The existing and temporary construction rights-of-way would also be used for

removing the existing pipelines, monitoring the aboveground pipeline segments during mining, and re-installing or reconnecting the pipelines belowground in their original alignments following the mining activity and potential ground subsidence. The CWA would also include workspace at road crossings and in steeply sloped areas, which would be used for stockpiling trench spoil and for staging equipment. Texas Eastern also plans to use CWA for equipment and access necessary for maintenance activities to elevate, offset, maintain, and re-bury the exposed pipeline segment. The CWA is expanded at staging areas, stream crossings, at foreign utility line crossings, and in areas where topsoil segregation is proposed.

Texas Eastern has proposed three temporary access roads (TARs) for the Project. The total land required for the TARs is about 4.3 acres. TAR 723.2 is 1,801 feet in length, TAR 723.9 is 861 feet in length, and TAR 723.9a is 1,138 feet in length. The TARs are existing access roads/farm driveways, but may require improvements, including tree trimming, gravel placement, or path widening. All TARs would revert to pre-construction conditions after re-installation of the pipelines.

Table 1 Marshall County Mine Panel 19E Project Land Requirements					
FacilityCounty, StateTemporary Workspace for Construction (acres) aPermanent Easement for Construction and Operation 					
Pipelines	Pipelines				
Lines 10, 15, 25, and 30	Marshall County, WV	41.2	21.3		
Other Facilities					
Temporary access roads	Marshall County, WV	4.3	0		
Bristoria Wareyard	Greene County, PA	6.1	0		
Totals	-	51.7	21.3		
^a Includes the existing permanent easement, temporary workspace outside of the existing permanent easement, and additional temporary workspace (ATWS).					

^b No new permanent easement would be acquired as part of the Project.

WV = West Virginia ; PA = Pennsylvania

Texas Eastern proposes to use the existing and previously certificated Bristoria Wareyard as a pipeyard/contractor wareyard for vehicle parking, equipment staging, and material storage. This 6.1-acre yard is industrial/commercial land located within Greene County, Pennsylvania.

Although Texas Eastern has identified areas where extra workspace would be required, additional or alternative areas could be identified in the future due to changes in

site-specific construction requirements. Texas Eastern would be required to file information on each of those areas for our review and approval prior to use.

7.0 **Permits**

Texas Eastern states that it would obtain all necessary permits, licenses, and approvals related to the construction of the Project. All relevant permits and approvals needed for the Project are listed in table 3 below. Texas Eastern would include copies of all relevant environmental permits and approvals in the construction contracts. Texas Eastern's contractors would be required to be familiar with specific authorizations and conditions of all permits and licenses obtained by Texas Eastern and contractor(s) would be required to comply with all of the requirements related to the restoration of any areas disturbed by construction.

Table 2 Marshall County Mine Panels 19E and 20E Project Required Environmental Permits or Approvals for the Project			
Agency	Permit or Approval	Submittal date	Approval Date
Federal			
Federal Energy Regulatory Commission	Section 7(c) of Natural Gas Act, Certificate of Public Convenience and Necessity and Related Authorizations	September 3, 2019 December 13, 2019 (Amendment)	pending
U.S. Army Corps of Engineers – Pittsburg District	Clean Water Act Section 404 Permit Nationwide Permit 12 – (non-reporting)	November 2019	November 2019
U.S. Fish and Wildlife Service – West Virginia Ecological Field Office	Section 7 Threatened and Endangered Species Consultation and Clearance	July 26, 2019 November 14, 2019 (Amendment)	pending
U.S. Fish and Wildlife Service – Pennsylvania Ecological Field Office	Section 7 Threatened and Endangered Species Consultation and Clearance	Pennsylvania Natural Diversity Index (PNDI) completed July 1, 2019 with no further review required (Bristoria Wareyard)	
U.S. Department of Agriculture – Natural Resources Conservation Services; West Virginia Field Office	Seeding and planting recommendations request	November 20, 2019	December 19, 2019

Table 2 Marshall County Mine Panels 19E and 20E Project Required Environmental Permits or Approvals for the Project			
Agency	Permit or Approval	Submittal date	Approval Date
State – West Virginia			
West Virginia State Historic Preservation Office (Division of Culture and History)	Section 106 of the National Historic Preservation Act Clearance	May 3, 2019, June 21, 2019, November 14, 2019 (Amendment)	June 4, 2019, July 17, 2019, December 3, 2019
	Section 401 Water Quality Certificate	November 2019	November 2019 (already issued with valid use of non- reporting NWP 12)
West Virginia Department of Environmental Protection	General Permit WV0113069 (General Permit Hydrostatic Test Water Discharge)	pending	pending
	General Water Pollution Control Permit, Stormwater Associated with Oil & Gas Construction Activities	pending	pending
West Virginia Division of Natural Resources (WVDNR) - Office of Land and Streams	Stream Activity Permit	pending	pending
WVDNR - Natural Heritage Program	State Threatened and Endangered Species Consultation and Clearance	July 31, 2019 November 2019 (Amendment)	August 14, 2019 November 21, 2019 (Amendment)
State – Pennsylvania			
Pennsylvania State Historic Preservation Office (Historical and Museum Commission)	Section 106 of the National Historic Preservation Act Clearance	April 1, 2016 October 28, 2019	April 5, 2016 November 15, 2019
Pennsylvania Game Commission	State Threatened and Endangered Species Consultation and Clearance	Pennsylvania Natural Diversity Index (PNDI) completed July 1, 2019 with no further review required.	
Pennsylvania Fish and Boat Commission	State Threatened and Endangered Species Consultation and Clearance	Pennsylvania Natural Diversity Index (PNDI) completed July 1, 2019 with no further review required.	
Pennsylvania Department of Conservation and Natural Resources	State Threatened and Endangered Species Consultation and Clearance	Pennsylvania Natural Diversity Index (PNDI) completed July 1, 2019 with no further review required.	

B. ENVIRONMENTAL ANALYSIS

The following sections discuss the Project's potential direct and indirect impacts on environmental resources. When considering the environmental consequences of the Project, the duration and significance of any potential impacts are described below according to the following four levels: temporary, short-term, long-term, and permanent. Temporary impacts generally occur during construction, with the resources returning to pre-construction conditions almost immediately. Short-term impacts could continue for up to three years following construction. Long-term impacts would require more than three years to recover, but eventually would recover to pre-construction conditions. Permanent impacts could occur because of activities that modify resources to the extent that they may not return to pre-construction conditions during the life of the Project, such as with the construction of an aboveground facility. An impact would be considered significant if it would result in a substantial adverse change in the physical environment.

1.0 Geology

1.1 Geologic Setting

The Project is in Marshall County, West Virginia, and Greene County, Pennsylvania within the Appalachian Plateaus physiographic province. The plateau contains an abundance of minable coal. In Marshall County, the Project traverses steep ridges and valleys that are typical of the area (West Virginia Geological and Economic Survey [WVGES], 2017). The underlying bedrock is of Permian or Pennsylvania age (230 to 290 million years ago) and made up of cyclic sequences of sandstone, shale, siltstone, limestone, and coal (WVGES, 2011; Pennsylvania Department of Conservation and Natural Resources [PADCNR], 2019). Elevations within the Project area range from 1,090 to 1,430 feet above mean sea level (AMSL).

1.2 Mineral Resources

The Project is within the high-volatile bituminous coal field of Appalachia and overlies five predominant coal seams: the Washington coal; the Waynesburg A coal; the Waynesburg coal; the Sewickley coal; and the Pittsburgh coal (WVGES, 2019). Elevations of these coal seams range from, on average, 440 feet AMSL to 856 feet AMSL (estimated overburden of approximately 533 feet to 940 feet) (WVGES, 2019). The Project is being proposed because of planned longwall mining of the Pittsburgh coal seam under Mine Panels 19E and 20E in Marshall County, West Virginia. The depth of this coal seam along Texas Eastern's existing right-of-way ranges from approximately 740 feet to 985 feet below the ground surface according to data provided to Texas Eastern by Marshall Coal. Additionally, the Bristoria Wareyard is underlain by an active

coal mine (Consol Energy Bailey Mine 4L) (Pennsylvania Department of Environmental Protection [PADEP], 2019). Because no permanent facilities or ground disturbing activities are proposed at this location, there would be no impacts on or from subsurface coal mining at the Bristoria Wareyard. No surface mines or quarries were identified within 0.25 mile of any Project area (WVDEP, 2019; PADEP, 2019).

Nine oil and gas wells were identified within 0.25 mile of the Project areas; however, none are within the construction work area. Of these identified wells, five (two active and three plugged or not drilled) are mapped within 200 feet of the Project, all nearest to temporary access roads (WVDEP, 2020; PADEP, 2019). Project activities would involve excavations within previously disturbed areas and would not impact oil and gas resources. Similarly, due to the shallow excavations proposed for the Project within existing rights-of-way, no impacts on coal resources are anticipated.

1.3 Geologic Hazards

Seismicity

The shaking during an earthquake can be expressed in terms of the acceleration as a percent of gravity (g), and seismic risk can be quantified by the motions experienced at the ground surface or by structures during a given earthquake expressed in terms of g. For reference, a peak ground acceleration (PGA) of 10 percent g (0.1g) is generally considered the minimum threshold for damage to older structures or structures not constructed to resist earthquakes. U.S. Geological Survey (USGS) National Seismic Hazard Probability Mapping shows that for the Project area, within a 50-year period, there is a 2 percent probability of an earthquake with an effective PGA of 4 to 6 percent g; and a 10 percent probability of an earthquake with an effective PGA of 1 to 3 percent g being exceeded (USGS, 2018). Even under much higher ground vibrations, the main risk to pipelines and aboveground facilities would be a slip fault that displaces laterally during an earthquake. Project facilities are not underlain by this type of feature (USGS, 2019). Given these conditions, we conclude that there is low potential for prolonged ground shaking, ground rupture, or soil liquefaction to occur or significantly impact the Project.

Landslide

The Project is within an area that generally is characterized as susceptible to landslides. Approximately half of the existing easement (0.5 mile) crosses slopes ranging from 15 to 30 percent; 0.1 mile crosses slopes ranging from 30 to 45 percent; and at one location (less than 0.1 mile), slopes exceed 60 percent. On steep slopes, elevated pipe would be secured with clamps and cables connecting the pipe segments to a buried anchor in the ground (Deadman) to prevent the pipe segments from slipping. Texas Eastern would also employ best management practices to manage surface water and groundwater, avoid excess weight on slopes, and would restore slopes and promote long-

term stability. These measures include stockpiling spoil in level areas or grading spoil along the length of the existing rights-of-way; storing construction debris (including timber) along flatter hill tops, ridges, and less severe slopes; clearing snow prior to the commencement of ground disturbing activities; utilizing temporary and permanent trench plugs and slope breakers; and restoring the construction right-of-way to original contours and pre-construction condition. Restoration would include installation of additional erosion control devices, such as jute matting and filter socks, as necessary, and subsurface drainage would also be managed by installing bleeder drains at the bottom of the trench to passively drain water away from potentially unstable areas (slopes are greater than 3:1). During operation, Texas Eastern personnel monitor the entire right-ofway frequently to inspect for slips and areas of slope failure. If a slip or landslide were identified, it would continue to be monitored by Texas Eastern operations personnel, and repaired if necessary, to ensure the safe and efficient operation of the Texas Eastern system.

Flood Hazard

The southern portion of the Bristoria Wareyard would be within a Federal Emergency Management Agency (FEMA) designated 100-year floodplain. No new, impervious cover is proposed at the Bristoria Wareyard; therefore, use of this facility would not affect flood storage capacity. Project areas in Marshall County would not be within any FEMA-designated flood hazard zones (FEMA, 2009; 2015). Therefore, we conclude that the Project would not affect floodplain storage capacity and would not be significantly affected by flood hazards.

Ground Subsidence

Texas Eastern anticipates up to five feet of ground subsidence may occur following mining activities, and stated that the possible unsupported span-width of the pipeline following mining and subsidence would be consistent with the proposed linear distance between pipeline elevation supports (25 feet). Following anticipated subsidence, pipelines would be reinstalled within existing trenchlines. The Project is designed to minimize risks that could result from coal mining activities and potential ground subsidence under Texas Eastern's existing easement; therefore, we conclude that impacts would not be significant.

Acid-Forming Minerals

Acid drainage can form when certain sulfide minerals in rocks or soils are exposed to oxidizing conditions. Acid drainage can occur under natural conditions or where sulfides in geologic materials are encountered in metal mining, construction, and other excavations. Potentially acid-producing soils and bedrock are present within the Project area. However, excavations would be shallow (less than 15 feet) in previously disturbed areas, and Texas Eastern would minimize the amount of water contact with potentially pyritic material by minimizing the length of time that ditches are open and by managing construction area stomwater, including diversion of surface water away from spoil piles. Therefore, we conclude that potential impacts from acid-producing soils and bedrock would not be significant.

Because of the mining mitigation proposed by Texas Eastern and its use of best management practices to minimize landslide development, and formation of acid drainage, we conclude that the impacts from geologic hazards would not be significant. Other geologic hazards (such as seismicity and flood hazards) are not anticipated to be a significant factor for the Project.

2.0 Soils

Construction activities have the potential to affect soil characteristics adversely, thereby limiting the restoration potential of areas disturbed by land-clearing activities and the movement of heavy equipment. Potential soil impacts in the Project area include loss of vegetation and subsequent soil erosion, mixing of topsoil and subsoil, and soil compaction.

Texas Eastern's environmental report provided soil series descriptions compiled from information in the U.S. Department of Agriculture Natural Resources Conservation Service's (NRCS) Web Soil Survey, as well as the NRCS Soils Series. Table 3 provides a summary of overall soil conditions for the Project and discussed below. Soil attributes presented in the table are those with the potential to cause construction limitations or potential hazards. The soils in the project area range from 0 to 70 percent slopes and mostly formed in shale, limestone, siltstones, sandstone, shale, and loess. Most of the areas are used for growing crops or pasture and woodland. Eastern would adhere to measures in the FERC Plan and Procedures (May 2013 Versions) and Texas Eastern's E&SCP, to minimize potential impacts on soils during and after construction.

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses. The limited prime farmland in the CWA would only be temporarily unavailable for agricultural purposes during construction, and permanent land use would not be changed.

Hydric soils that contain a large organic component can be highly susceptible to both wind and water erosion. Texas Eastern indicates that although no hydric soils were mapped along the project right-of-way, several wetlands were identified during field survey where hydric soils would be present. Shallow bedrock is considered to be a minimum distance of 5.0 feet from the soil surface to the top of the bedrock layer. Excavation would be limited to existing pipelines and following the mining subsidence the pipelines would be placed within their original alignments, therefore Texas Eastern does not anticipate encountering shallow bedrock.

Table 3Marshall County Mine Panels 19E and 20E ProjectSummary of Important Soil Attributes of the Facilities Associated with the Project			
Project Soil Attribute Area			
	Panels 19E and 20E (percent of soils)	Bristoria Wareyard (percent of soils)	
Prime Farmland ^a	0.8	0	
Hydric Soils ^b	0	100	
Shallow Bedrock ^c	87.5	0	
Poor/Very Poor Revegetation Potential ^d	95.3	100	
High Erodibility- Water *	99.2	100	
^a Prime Farmland does not include Farmland of Statewide Imp	ortance.		

^b Percent Hydric Soils - Partially hydric soils were included in this category.

 $^{\circ}$ Percent Shallow Bedrock - Shallow bedrock is considered to be a minimum distance of 5.0 feet from the soil surface to the top of the bedrock layer.

^d Poor/Very Poor Revegetation Potential - This interpretation rates soils for their use in establishing and maintaining turf for lawns and golf fairways and ornamental trees and shrubs for residential or commercial landscaping.

^e High Water Erodibility category indicates the hazard of soil loss from off-road and off-trail areas after disturbance activities that expose the soil surface.

Water erosion results from the dislocation of soil material by falling water and the removal by flowing water. It is generally related to ground cover and slope gradient. Table 4 indicates the Project soils also have a high potential for water erosion, which could present construction limitations or hazards. Texas Eastern would employ the use of appropriate erosion control measures (as contained in the Plan and Procedures and the E&SCP) to minimize any potential impacts due to water erosion.

During construction, Texas Eastern would employ erosion control structures, temporary seeding and revegetation, and erosion control blankets. By adhering to the FERC Plan and Procedures and the E&SCP, we do not anticipate the previously discussed soil limitations would represent a concern during, or after, construction of the Project.

Texas Eastern would backfill pipeline trenches after the pipelines are elevated and would temporarily restore the rights-of-way as part of the mining mitigation procedures. Texas Eastern plans to temporarily stabilize soils by seeding and mulching to reduce potential wind and water erosion. Travel lanes would be needed along the rights-of-way for monitoring and maintenance during the period while the pipelines are elevated. Erosion control devices would be installed and maintained as needed until final restoration is completed. In upland areas, segregated topsoil would be stored in piles along the right-of-way and replaced during final restoration after mining activities are completed.

After construction is complete, all disturbed areas would be returned to preexisting contours to the extent practicable and reseeded. If encountered during construction, any active drainage tiles, culverts, and other items impacted during construction would be repaired or replaced and returned to pre-construction condition. Following restoration and clean up, Texas Eastern would monitor disturbed areas to maintain erosion and sediment control structures until final stabilization is achieved. Erosion control devices would be installed and maintained as needed until final restoration is completed.

The use of the Plan and Procedures and the E&SCP and the temporary restoration measures while the pipelines are excavated and elevated would minimize erosion during both the mining mitigation and final restoration of the Project. Therefore, the effects on soils, erosion, and sedimentation would be minor and not significant.

3.0 Water Resources and Wetlands

3.1 Groundwater Resources

The Project overlies the Pennsylvanian and Permian age sedimentary aquifer. Sandstone members of this aquifer are most common and most productive, with well yields ranging from 5 to 400 gallons per minute (Trapp and Horn, 1997). The chemical quality of water in the freshwater parts of the bedrock aquifers of the Appalachian Plateaus province is somewhat variable but is generally satisfactory for municipal supplies and other purposes (Trapp and Horn, 1997).

The U.S. Environmental Protection Agency (EPA) oversees the Sole Source Aquifer Protection Program to protect high production aquifers that supply 50 percent or more of the region's water supply and for which there are no reasonably available alternative drinking water sources, should the aquifer become contaminated. The Project does not overlie EPA-designated sole source aquifers (EPA, 2019). Further, the Project area in West Virginia does not overlie state-designated wellhead protection areas (West Virginia Department of Health and Human Resources, 2020).

One spring at MP 722.6 was identified approximately six feet west of the proposed construction work area and approximately 140 feet north of Line 30. Texas Eastern has confirmed that this spring, while a flowing spring, is not currently used by the landowner as a drinking water supply. Measures to be taken to avoid impacts to this feature include

installing a silt fence and orange safety fencing along the edge of the workspace. One plugged USGS groundwater monitoring well was also identified near the intersection of TAR 723.2 and Waynesburg Pike Road. No other public or private groundwater wells or springs were identified within 150 feet of the construction workspace.

Based on Texas Eastern's experience with the existing pipelines, shallow groundwater is not anticipated to be encountered in the trenches within the Project's footprint. Further, Texas Eastern does not propose to use groundwater as the source for any construction water needs. In forested areas, water infiltration, which is normally enhanced by vegetation, may be reduced until vegetation is reestablished; however, these impacts would be temporary and minor.

During Project activities, groundwater contamination could occur from accidental spills of fuels, solvents, and lubricants. Texas Eastern would comply with its SPCC Plan, which identifies preventative measures to be used during construction to reduce the potential for a spill, as well as spill containment and cleanup procedures. Texas Eastern would additionally restrict refueling and storage of hazardous materials within a 200-foot radius of private wells and a 400-foot radius of community and municipal wells.

Based on these proposed measures, the depth to shallow groundwater, and absence of groundwater resource use in the Project vicinity, we conclude that the Project would not have a significant impact on availability of groundwater resources or groundwater quality.

3.2 Surface Water Resources

The Project is within the Grave Creek and Upper Wheeling Creek watersheds. The Project would not cross any waterbodies designated as wild and scenic rivers. In addition, none of the waterbodies are classified as sensitive or impaired. Based on a review of topographic maps and field surveys, Texas Eastern identified nine waterbodies within the vicinity of the pipeline right-of-way. Of the waterbodies identified, four are perennial, two are intermittent, and three are ephemeral. Table 4 below lists the waterbodies within the Project area.

Six of the waterbodies would be directly affected by the Project activities. Construction in these waterbodies would be completed using a dry-ditch method (flume or dam-and-pump) and nine would be crossed by temporary equipment bridges. If any of the waterbodies are dry at the time of crossing, they may be crossed using standard upland construction techniques. The pipe would be placed on equipment bridges one foot above the water column for the duration of the Project.

Table 4 Waterbodies Impacted by the Project										
Waterbody ID	Milepost	Waterbody Type	Waterbody Name	Area Within the Construction Work Area (square feet)	Crossing Length/OHWM (linear feet)	Proposed Impacts				
Marshall Cou	Marshall County Mine Panels 19E and 20E									
S-19E-001	722.6	Perennial	Straight Run	918.0	4	Bridge				
S-19E-009	722.8	Perennial	UNT North Fork Grave Creek	675.0	3.5	Pipeline, Bridge				
S-19E-009a	N/A	Ephemeral	UNT North Fork Grave Creek	19.0	3.5	Bridge				
S-19E-010	723	Perennial	UNT North Fork Grave Creek	538.0	2	Pipeline, Bridge				
S-19E-012	N/A	Ephemeral	UNT North Fork Grave Creek	48.5	1	Bridge				
S-20E-004	723.4	Intermittent	UNT Wolf Run	280.9	2	Pipeline, Bridge				
S-20E-007	N/A	Ephemeral	UNT Wolf Run	22.7	1	Pipeline, Bridge				
S-20E-008	723.5	Perennial	Wolf Run	574.8	4	Pipeline, Bridge				
S-20E-009	723.6	Intermittent	UNT Wolf Run	459.6	1.5	Pipeline, Bridge				
Bristoria Wa	reyard									
S-BY-001	N/A	Ephemeral	UNT North Fork Dunkard Fork	152.0	1 ^a	None				
S-BY-002	N/A	Intermittent	UNT North Fork Dunkard Fork	814.0	4 ^a	None				
S-BY-003	N/A	Perennial	UNT North Fork Dunkard Fork	3168.3	4 ^a	None				
UNT = unnamed t a = Impacts on wa	tributary, OHWN aterbodies within	I = ordinary high wat the Bristoria Warey struction work area	ter mark vard would be avoided through the pip	ough the use of exclusion	measures					

The Bristoria Wareyard is located within the North Fork Dunkard Fork watershed. Based on field surveys, one perennial, one intermittent, and one ephemeral waterbody were identified within the wareyard. These waterbodies are unnamed tributaries to North Fork Dunkard Fork. Texas Eastern would mark the waterbodies within the wareyard for avoidance and protection from indirect impacts by installing silt fence or other temporary sediment control barriers. Therefore, we do not expect any adverse impacts on the waterbodies within the wareyard.

Texas Eastern would implement the FERC Procedures and its E&SCP to minimize impacts on waterbodies. We conclude that if the Project is constructed in accordance with the construction and restoration methods described in these plans, impacts on waterbodies would be minor and temporary.

Texas Eastern requested several modifications to the FERC Procedures consisting of locations where additional temporary workspace (ATWS) would be within 50 feet of a waterbody or wetland and has also requested to use greater than 75 feet of temporary

workspace within four wetlands crossed by the pipelines. Texas Eastern would install appropriate erosion control devices to prevent off-site sedimentation and an environmental inspector would monitor the locations to ensure waterbodies are adequately protected. These locations and associated site-specific justifications are provided in table 5. We have reviewed these modifications to the FERC Procedures and find them acceptable.

Table 5 Modifications to the FERC Procedures						
Location	Milepost	Affected Feature	Distance of Affected Feature from ATWS	Section of the FERC Procedures	Justification	
19E-ATWS-001	722.6- 722.7	W-19E-003 (outside of construction work area)	3	VI.B.1.a	ATWS required for the transition from aboveground pipe to buried pipe, construction of a safe bell- bole tie-in, and spoil storage for the	
		W-19F-001	47	VIB1a	excavation and large culverts to be	
		S-19E-002	45	V.B.2.a	placed beneath Gosney Hill Road. Steep topography adjacent to the existing right-of-way results in space constraints at the site.	
19E-ATWS-002	722.6	W-19E-002	28	VI.B.1.a	ATWS required for the transition from aboveground pipe to buried pipe, construction of a safe bell- hole tie-in, and spoil storage for the excavation and large culverts to be placed beneath Gosney Hill Road. Steep topography adjacent to the existing right-of-way results in space constraints at the site.	
19E-ATWS-004	722.7	S-19E-009	48	V.B.2.a	ATWS required for the transition from aboveground pipe to buried pipe, construction of a safe bell- hole tie-in and, spoil storage.	
		S-19E-012	0		Steep topography adjacent to the existing right-of-way and the loss of workspace due to foreign pipelines at the site restrict the placement of the additional workspace.	
19E-ATWS-006	723.0- 723.3	S-19E-010	48	V.B.2.a	ATWS required for the transition from aboveground pipe to buried pipe, construction of a safe bell- hole tie-in and, spoil storage. Steep topography adjacent to the existing right-of-way constrains the siting of the additional workspace.	
19E-ATWS-007	722.9- 723.0	S-19E-010	48	V.B.2.a	ATWS required for the transition from aboveground pipe to buried pipe, construction of a safe bell- hole tie-in and, spoil storage. Steep topography adjacent to the existing right-of-way constrains the siting of the additional workspace.	

Table 5Modifications to the FERC Procedures						
Location	Milepost	Affected Feature	Distance of Affected Feature from ATWS	Section of the FERC Procedures	Justification	
20E-ATWS-001	723.3- 723.4	W-20E-005	48	VI.B.1.a	ATWS required for the transition from aboveground pipe to buried pipe, construction of a safe bell- hole tie-in and, spoil storage. Steep topography adjacent to the existing right-of-way constrains the siting of the additional workspace.	
Entire pipeline construction right-of-way	722.0- 723.5	W-19E-001, W-19E-006, W-20E-008, W-20E-010	N/A	VI.A.3	A temporary workspace greater than 75 feet is necessary for the excavation and reburial of four parallel pipelines due to the existing right-of-way width, adjacent steep terrain, and the need for a travel lane adjacent to the right-of-way.	

3.3 Wetlands

Wetlands are areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of wetland vegetation adapted for life in saturated soil conditions. Wetlands can be a source of substantial biodiversity and serve a variety of functions that include providing wildlife habitat, recreational opportunities, flood control, and naturally improving water quality.

Texas Eastern conducted wetland delineations of the Project area in 2019. These surveys identified two wetland types, palustrine emergent and palustrine scrub-shrub. The Project would temporarily impact a total of 0.6 acre of wetlands which is unavoidable because the existing pipelines traverse the wetlands. Within the Bristoria Wareyard, the wetlands would be marked and temporary erosion control devices installed to ensure avoidance during construction. Table 6 lists wetlands impacted by the Project.

We received a comment from the USACE in response to the NOI recommending that Texas Eastern evaluate the Project area for jurisdictional streams and wetlands and contact the USACE for permitting requirements. Texas Eastern conducted wetland delineations and in 2019 and applied for a permit with the USACE in November 2019.

Table 6Wetlands Impacted by the Project								
Marshall County Mine Panels 19E and 20E								
Wetland ID	Milepost	Wetland Type	Crossing Length (feet)	Construction Impact (acres)				
W-19E-001	722.6	PEM	41	0.18				
W-19E-002	South of 722.6	PEM	N/A	0.01				
W-19E-004	South of 722.6	PEM/PSS	N/A	0.01				
W-19E-005	722.8	PEM	29	0.05				
W-19E-006	722.9	PEM	49	0.17				
W-20E-001	South of 723.4	PEM	N/A	0.02				
W-20E-003	South of 723.4	PEM	N/A	0.01				
W-20E-007	723.4	PEM	24	0.03				
W-20E-008	723.5	PEM	13	0.08				
W-20E-010	723.5	PEM	17	0.06				
Subtotal 173 0.6								
Bristoria Wareyard								
W-BY-001	N/A	PEM	N/A	0 ^a				
W-BY-002	N/A	PEM	N/A	0 ^a				
W-BY-003	N/A	PEM	N/A	0 ^a				
W-BY-004	N/A	PEM	N/A	0 ^a				
W-BY-005 N/A PEM N/A 0 ^a								
PEM = palustrine emergent, PSS = palustrine scrub-shrub								

W-19E-003 is located outside of the construction work area but is located within 50 feet of the temporary workspace

a = Impacts on wetlands within the Bristoria Wareyard would be avoided through the use of exclusion measures

N/A = wetland is within the construction work area but does not cross the pipeline

Texas Eastern would construct the Project through wetlands in accordance with the FERC Procedures with some modifications and state and federal permitting requirements. Texas Eastern's proposed modifications include locating ATWS less than 50 feet from wetlands and using a construction right-of-way ranging from 80 to 160 feet wide through wetlands. We have reviewed these modifications and the site-specific justifications for each modification. We approve these modifications and the additional mitigation measures proposed to minimize the impacts on wetland resources. Further discussion of these modifications can be found in section B.3.2 above.

Impacts on wetlands would be greatest during and immediately following construction. Most of these effects would be short term in nature and would diminish as wetland functionality recovers and eventually reaches preconstruction conditions. Wetlands affected within the temporary workspace would be returned to pre-construction contours and allowed to revegetate naturally. Vegetation within emergent wetlands are expected to regenerate quickly (typically within 1 to 3 years). Because these areas are naturally open and herbaceous, there would be little to no permanent impacts on emergent wetlands. Impacts on scrub-shrub wetlands would last slightly longer than those on emergent wetlands. Woody vegetation may take several years to regenerate to its original density. Furthermore, annual mowing and maintenance of a 10-foot-wide herbaceous strip centered over the pipeline would result in a long-term, permanent impact by converting previously scrub-shrub vegetated wetland areas to emergent wetland areas. Revegetation would be monitored and additional measures to promote revegetation would be developed, if necessary. Therefore, we conclude that wetland impacts associated with the construction and operation of the Project would be sufficiently minimized and do not represent a significant impact on these resources.

3.4 Hydrostatic Test Water and Dust Suppression

Hydrostatic testing is a process in which a pipeline is tested for leaks using pressurized water, to ensure the integrity of facilities and the pipeline prior to operation.

Texas Eastern would require approximately 629,600 gallons of water for hydrostatic testing and approximately 30,000-40,000 gallons of water per year for dust suppression during construction which would be obtained from a municipal source. Texas Eastern would obtain all applicable permits prior to hydrostatic testing. Texas Eastern does not anticipate the use of any additives in the hydrostatic test water. Hydrostatic test water would be discharged to uplands with appropriate erosion control measures and adhere to all permit requirements. Therefore, we conclude that any potential impacts on waterbodies or wetlands from hydrostatic testing and dust suppression activities would be adequately minimized.

4.0 Vegetation, Wildlife, and Fisheries

4.1 Vegetation

The Project would primarily impact open uplands consisting of old field, pasture and maintained right-of-way (37.8 acres). Other vegetation types impacted include agricultural land (11.5 acres) and secondary growth forest (2.5 acres). The Project also impacts other land use types such as residential land, roads, and industrial land which generally lack vegetation or are sparsely vegetated. Open uplands include all nonforested uplands, including previously disturbed areas such as maintained utility rightsof-way, active open pasture, and old fields. Typical upland forest species include shagbark hickory, white oak, sugar maple, and multiflora rose. No rare, unique, or sensitive natural communities or vegetation species were identified within the Project area. Vegetation impacts are summarized in table 7.

Invasive plant species can outcompete native vegetation and change the composition of native vegetation communities. Texas Eastern obtained a list of invasive species potentially present in the Project area from the WVDNR Natural Heritage Program, the Pennsylvania Department of Natural Resources, and the NRCS. Invasive species could potentially spread as a result of soil disturbances associated with construction activities. Texas Eastern identified invasive plant species during field surveys, including reed canary grass, common reed, multiflora rose, and Japanese stiltgrass. In addition, Texas Eastern prepared an Invasive Plant Species and Noxious

Table 7Vegetation Impacted by the Project								
	Agricultural (acres)	Forested (acres)	Open Upland (acres)	Residential (acres)	Industrial (acres)	Roads (acres)	Wetland (acres) Waterbody	Total (acres)*
Panels 19E a	nd 20E						(acres)	
Temporary Workspace	2.73	0.09	7.75	0.09	0.23	0.29	0.07	11.3
Existing Easement	4.28	0.0	15.75	0.08	0.33	0.29	0.51 0.07	21.4
ATWS	2.17	1.99	2.43	0.21	0.86	0.31	0.00 <0.0	8.0
Staging	0.66	0.00	0.00	0.00	0.00	0.0	0.0 0.0	0.7
Temporary Access Roads	1.55	0.00	155	0.28	0.00	0.95	0.00	4.3*
Subtotal	11.5	2.1	27.6	0.7	1.4	1.9	0.6	45.9
Bristoria War	reyard							
Bristoria Wareyard	0.00	0.44	5.20	0.00	0.00	0.00	0.40ª 0.09ª	6.1
Project Total	11.5	2.5	32.8	0.7	1.4	1.9	1.2	51.7

a: Impacts on wetlands and waterbodies within the Bristoria Wareyard would be avoided through the use of exclusion measures

* The numbers in this table have been rounded for presentation purposes. Thus, the totals may not reflect the exact sum of the addends in all cases.

Weeds Management Plan for the Project. This plan includes measures such as ensuring that equipment mats and all construction equipment are clean and free of excess dirt, using certified weed free seed mixes and mulch, and monitoring the construction workspaces for invasive species during restoration and revegetation.

After construction is complete, the construction right-of-way and all temporary work areas would be revegetated according to measures contained in the FERC Plan and the E&SCP. Land outside the permanent easement would be reseeded using seed mixes recommended by local and state agencies and allowed to revert to pre-construction condition, which would be a short-term impact (3 to 12 months to reach preconstruction densities) for open land, and would be a long-term impact (30 to 50 years to reach preconstruction densities) for forested areas. Because the forested areas are located adjacent to the existing right-of-way, the effects of forest fragmentation would be minimized as much as possible. The majority of the vegetation impacts would be minor and temporary. Therefore, we conclude that the Project would not have a significant impact on vegetation in the Project area.

4.2 Wildlife

The habitat types affected by the Project include open uplands, upland forest, agricultural land, wetlands, and open water. Common wildlife found in the Project area

include raccoon, gray squirrel, black ratsnake, eastern box turtle, common mudpuppy, eastern American toad, turkey vulture, and American robin. Common fish species in the waterbodies impacted by the Project are discussed in section 4.3.

Potential impacts on wildlife include habitat removal and construction-related ground disturbance and noise. Some individuals could be inadvertently injured or killed by construction equipment; however, more mobile species such as birds and mammals would likely relocate to other nearby suitable habitat to avoid the project area once construction activities commence. The temporary disturbance of local habitat is not expected to have population-level effects on wildlife because the amount of habitat crossed represents only a small portion of the habitat available to wildlife throughout the proposed project area, and much of the project area would return to preconstruction use. However, long-term impacts from habitat alteration would be further minimized by the implementation of mitigation measures contained in the FERC Plan and E&SCP, which would ensure revegetation of the areas disturbed by construction. Therefore, we conclude that the Project area.

4.2.1 Migratory Birds

Migratory birds are species that nest in the United States and Canada during the summer and then migrate to and from the tropical regions of Mexico, Central and South America, and the Caribbean for the non-breeding season. Migratory birds are protected under the Migratory Bird Treaty Act ([MBTA]-16 U.S. Code [USC] 703-711), and Bald and Golden Eagles are additionally protected under the Bald and Golden Eagle Act (16 USC 668-668d). The MBTA, as amended, prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. Executive Order 13186 (66 Federal Register 3853) was enacted in 2001 to, among other things, ensure that environmental analyses of federal actions evaluate the impacts of federal actions on migratory birds. Executive Order 13186 directs federal agencies to identify where unintentional take is likely to have a measurable negative effect on migratory bird populations; avoid or minimize adverse impacts on migratory birds through enhanced collaboration with the U.S. Fish and Wildlife Service (FWS); emphasize species of concern, priority habitats, and key risk factors, and give particular focus to populationlevel impacts. On March 30, 2011, FWS and the Commission entered into a Memorandum of Understanding that focuses on avoiding, minimizing, or mitigating adverse impacts on migratory birds and strengthening migratory bird conservation through enhanced collaboration between the Commission and the FWS.

Minimal tree clearing or trimming would be required along the existing right-ofway, temporary access roads, and at the Bristoria Wareyard. The total tree clearing would be 2.1 acres for the construction work area and 0.4 acre for the Bristoria Wareyard. Because tree clearing would occur along the existing right-of-way, the Project would not result in habitat fragmentation. Trees along the right-of-way are considered edge habitat which is less desirable habitat for most wildlife. This EA also discusses several plans (e.g., Plan and Procedures, E&SCP, SPCC Plan) that contain project-specific mitigation measures that would reduce the extent and duration of impacts on migratory bird habitat, actively and naturally allow a great majority of the construction right-of-way to return to preconstruction condition, and limit the potential effects from spills or environmental contamination.

Bald Eagle

Bald eagles are protected under the MBTA and the Bald and Golden Eagle Protection Act. Based on consultation with state and federal agencies, bald eagles may occur in the Project area. Most of the Project area contains suitable foraging and wintering habitat. Bald eagles nest in tall trees near large bodies of water. Because the Project area mainly consists of open land, maintained fields, rights-of-way, and secondary growth forest, there is low potential for bald eagle nesting in the area. In addition, none of the agencies consulted identified any known bald eagle nests in the vicinity of the Project. In the event that a bald eagle nest is discovered in the Project area, Texas Eastern has committed to utilizing the FWS' *National Bald Eagle Management Guidelines* to mitigate impacts on nesting bald eagles.

Birds in the area would likely avoid the Project area during construction due to the human presence and noise. We conclude that adult birds relocating to avoid construction is an impact of limited duration that would not result in a substantial or long-term change in migration patterns through the area nor constitute a population-level impact. Due to the minimal amount of tree clearing and co-location of construction with existing rightsof-way, the Project would not significantly impact migratory birds or migratory bird habitat in the Project area.

4.3 Fisheries

The Project would impact nine waterbodies from the removal and reburial of the pipeline and the installation of bridges. There are three waterbodies within the Bristoria Wareyard. All of the waterbodies crossed by the pipeline are classified by the WVDEP as warmwater fisheries. The waterbodies within the Bristoria Wareyard are classified as Trout Stocked Fisheries by Pennsylvania Code. Representative fish species in the waterbodies within the Project area include smallmouth bass, logperch, and common carp. Based on our analysis, we determined that there are no threatened or endangered species present in any of the waterbodies crossed by the Project, as further discussed in

section B.4.4 below. Additionally, the Project area does not contain Essential Fish Habitat.

Impacts on fisheries would be minimized by using dry crossing methods and temporary equipment bridges. Texas Eastern would also implement temporary erosion control devices to minimize the potential for erosion and sedimentation to impact waterbodies in accordance with the FERC Procedures. Additionally, the SPCC Plan would prevent impacts of accidental spills during construction and ensure proper cleanup in the event of an accidental release of fuels, lubricants, and other hazardous materials during construction. Impacts from construction-related sedimentation and turbidity would be limited to short-term, temporary disturbances. Therefore, we conclude the Project would not result in long-term or significant impacts to fisheries or fish habitat.

4.4 Special Status Species

Special status species are those species for which state or federal agencies provide an additional level of protection by law, regulation, or policy. Included in this category are federally listed species that are protected under the Endangered Species Act (ESA) or are considered as candidates for such listing by the FWS, those species that are statelisted as threatened or endangered, and state species of special concern.

4.4.1 Federally Listed Species

In accordance with section 7 of the ESA, FERC, as the lead federal agency, must consult with the FWS to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of a federally listed threatened or endangered species, or result in the destruction or adverse modification of the designated critical habitat of a federally listed species. Texas Eastern, acting as the project nonfederal representative to FERC, reviewed the FWS' Information for Planning and Conservation (IPaC) database for the project area in West Virginia. In addition, Texas Eastern contacted the FWS on July 26, 2019 for the Panel 19E and on November 14, 2019 for Panel 20E. For Pennsylvania, Texas Eastern conducted a search of the Pennsylvania Natural Diversity Inventory which indicated that no further FWS consultation is necessary for the Project in Pennsylvania. We have determined that the Project may affect the federally listed Indiana bat and northern long-eared bat in West Virginia. No critical habitat was identified for any federally listed species. We request that the FWS consider this EA as our Biological Assessment for the Project and we request concurrence with our determinations of effect for the Indiana bat and the northern long-eared bat. These federally listed species are further discussed below.

Indiana Bat and Northern Long-Eared Bat

Both Indiana bats and northern long-eared bats hibernate in caves or mines beginning in the late summer/early fall. In the spring, the bats emerge and travel to summer roosting habitat. Summer roosting habitat, including maternity roosts, includes tree cavities, exfoliating bark, snags of dead or dying trees, and man-made structures (e.g., barns). Indiana Bats roost in trees in riparian, bottomland, and upland forests in a wide range of habitats, from highly altered landscapes to intact forests. Northern longeared bats occur in widespread, but uncommon, patterns in forest habitats. Individuals may travel up to 35 miles from their summer habitat to their winter hibernacula.

Potential impacts on bats could result from construction in or near mines that area used as hibernacula during the winter months. During the summer months, removal of trees that are occupied roost/maternity trees could also result in impacts on bats.

The FWS has determined that small projects more than 10 miles from a known priority 1 or 2 Indiana bat hibernaculum, more than 5 miles from a known priority 3 or 4 Indiana bat hibernaculum, more than 2.5 miles from any known maternity roost, or more than 5 miles from summer detection sites where no roosts were identified, that affect less than 17 acres of forested habitat, and will not affect any potential hibernacula would have a small chance of resulting in direct or indirect effects on the Indiana bat, and therefore these effects are considered discountable. The Project would not affect any caves or mines that could be used as hibernacula for the Indiana bat and the Project area is not within an Indiana bat buffer zone. In addition, the effects on aquatic features used as foraging habitat would be insignificant.

The proposed Project is not located within 0.25 mile of known northern long-eared bat hibernacula or within a 150-foot radius around known, occupied maternity roost trees, and would not affect known northern long-eared bat hibernacula. Therefore, any take of northern long-eared bat would be exempted under the 4(d) rule and no conservation measures are required.

We conclude that the Project *may affect, but is not likely to adversely affect* the Indiana bat and northern long-eared bat. This conclusion is based on the absence of known maternity habitat or hibernacula in the Project area and the limited tree clearing proposed by Texas Eastern. The FWS stated in letters dated August 13 and November 25, 2019 that it does not anticipate that the Project would adversely affect the Indiana bat and northern long-eared bat. However, these letters state that they only serve as technical assistance and do not constitute completed ESA consultation. Therefore, **we recommend that**:
Texas Eastern should <u>not begin</u> construction of the Project <u>until</u>:

- a. FERC staff receives comments from the FWS regarding the proposed action;
- b. FERC staff completes formal ESA consultation with the FWS, if required; and
- c. Texas Eastern has received written notification from the Director of the Office of Energy Projects (OEP) that construction or use of mitigation may begin.

4.4.2 State-listed Species

Texas Eastern contacted the WVDNR Natural Heritage Program regarding state threatened, endangered, or rare species in the state. In a response dated August 14, 2019, the WVDNR stated that there are no known records of state-listed species in the Project area. In Pennsylvania, Texas Eastern's search of the Pennsylvania Natural Diversity Inventory database did not identify any state-listed species for the Bristoria Wareyard. Therefore, we conclude that the Project would not affect state-listed species.

5.0 Land Use, Recreation, and Visual Resources

The Project would affect 51.7 acres of a variety of land types. The majority of land use within the CWA of Panel 19E and 20E, or 89 percent, is designated as open land (approximately 27.6 acres) and agricultural land (approximately 11.5 acres). Woodland is limited to the edges of the maintained right-of-way and certain CWA. Clearing of woody shrubs and trees would have a longer-term impact on vegetation and land use than temporary use of open areas, because shrubs and trees take longer to re-establish than herbaceous vegetation. However, following construction, a shrub- and tree-dominated community is expected to progress through several successional stages, until the original profile is restored.

The CWA would include the existing pipeline right-of way as well as a temporary construction right-of-way. The CWA would also include workspace at road crossings and in steeply sloped areas, which would be used for stockpiling trench spoil and for staging equipment. No new permanent easement and no new aboveground facilities are proposed for the Project.

Texas Eastern would utilize three TARs as part of the Project: TAR 723.2 is 1,801 feet in length, TAR 723-9 is 861 feet in length, and TAR 723.9a is 1,138 feet in length.

All access roads are situated off US Route 250 (Waynesburg Pike). TAR 723.2 is accessed via a residential driveway to a two-track farm road which turns into a field. TARs 723.9 and 723.9a are the north and south sections of an existing gravel road to an active well area. Although the TARs are existing roads, they may require improvements, including tree clearing and trimming, gravel placement, or path widening. Following completion of construction activities, the TARs used for construction would be restored to previously existing conditions and in accordance with landowner agreements. No permanent change in land use would occur.

The Bristoria Wareyard (6.1 acres) would be used for a contractor wareyard. The majority of the land use at the Bristoria Wareyard, or 84 percent, is open land consisting of old field and maintained areas (approximately 5.2 acres).

Minimal tree clearing or trimming would be required along the existing right-ofway, TARs and the Bristoria Wareyard; however, about 2.1 acres of tree clearing would be required along the edge of the temporary construction right-of-way, TARS, and some areas of CWA. Minimal tree trimming within the Bristoria Wareyard would be limited to 0.4 acre. Table 8 identifies the land use within the construction works areas of the Project.

Typical land use categories include:

- Agricultural Land Active cropland or hay fields;
- Forest and Woodland Tracts of upland or wetland forest or woodland that would be removed for the construction right-of-way or extra work or staging areas;
- Open Land Non-forested lands used for open space or pasture;
- Residential Land Residential yards;
- Industrial Electric power or gas utility stations and roads; and
- Wetland or Waterbody Any wetland or waterbody identified during field investigations.

The segments of Lines 10, 15, 25, and 30 would be placed inside large culverts at two road crossings. The culverts would be installed prior to the commencement of mining activities to allow the roads to remain open to traffic during the periods of potential subsidence. The open-cut method would be used for installing the culverts at Gosney Hill Road, while a road bore would be employed beneath US Route 250.

Table 9 identifies a list of residences and/or structures located within 50 feet of the CWA for the Project. There is one residence within 25 feet of the CWA, immediately

adjacent to TAR 723.2, and one residence located about 29 feet from the Bristoria Wareyard.

Texas Eastern plans to maintain mature trees and landscaping, unless removal is necessary for personnel safety or for the safe operation of construction equipment. Texas Eastern also proposes to restore all lawn areas and landscaping within the CWA consistent with the requirements of FERC's Plan. Restoration would take place immediately after backfilling the trench after the pipelines are reinstalled, weather and site conditions permitting.

Texas Eastern has notified all affected landowners through direct mailings regarding initial survey activity and has had verbal communications with individual landowners to discuss the proposed activity. Landowners have also been notified of the Project in accordance with 18 CFR Section 157.203(d) (2019). Texas Eastern would provide landowners a pre-construction notice a week prior to the start of activity on their property.

Table 8										
Marshall County Mine Panels 19E and 20E Project Impacts per Land Use Category										
	Agricultural (acres)	Forest/ Woodland (acres)	Open Land (acres)	Residential (acres)	Industrial/ Commercial (acres)	Road (acres)	Wetland/ Waterbody (acres)	Total ^a		
Construction Impacts per Land Use Category										
Panels 19E and 20E Construction Work Area										
CWA	9.84	2.08	25.93	0.38	1.42	0.89	0.59/0.08	41.3		
TAR	1.55	0.00	1.55	0.28	0.00	1.00	0.00	4.3		
Bristoria Wareyard										
Bristoria Wareyard	0.00	044	5.20	0.00	0.00	0.00	0.40 / 09	6.1		
Total Construction Impacts	11.5	2.5	32.8	0.7	1.4	1.9	1.2	51.7		
Operational Impacts per Land	Use Category						•			
Panels 19E and 20E Operation	nal Area									
Operational Easement ^b	4.28	0.00	15.75	0.0	0.33	0.29	0.51 / 0.10	21.3		
Total Operational Impacts	4.3	0.00	15.8	0.1	0.3	0.3	0.5/0.1	21.3		
^a The numbers in this table have been rounded for presentation purposes. Thus, the totals may not reflect the exact sum of the addends in all cases. ^b The operational easement is equal to the existing easement because no new easements would be required to continue operation of the pipelines in the CWA. Note: all units are in acres. TARs = temporary access roads										

Table 9 Marshall County Mine Panel 19E Project Residences and/or Structure within 50 feet of the Construction Workspace						
Residence/Structure	Milepost* or Access Road	Distance from Workspace (feet)				
Panels 19E and 20E Construction Work	Areas	-				
Shed	722.7	0				
M&R Station 73656	722.7	20				
Residence	722.7	46				
Barn	722.7	38				
Detached garage	722.7	12				
Equipment and hay storage area	723.2	14				
Barn	723.3	0				
Garage	723.3	14				
Storage building	723.6	37				
Access Roads						
Residence	TAR-723.2	15				
Barn	TAR-723.2	42				
Garage	TAR-723.2	3				
Storage tanks	7TAR23.6	33				
Bristoria Wareyard						
Residence	N/A	29				
Barn	N/A	0				
Construction trailer	N/A	0				
TAR = temporary access road, N/A = not applica * Based on Line 30 milepost.	ble					

Mitigation measures Texas Eastern would use to limit fugitive dust during construction include applying water, calcium chloride or other commercially-available dust control agents, when needed, controlling and removing any track-out to roads, covering loads, and maintaining appropriate low vehicle speeds in unpaved areas.

There is a residence located 46 feet from at MP 722.7 and a residence located 29 feet from the Bristoria Wareyard, Texas Eastern would fence the edge of the CWA adjacent to these residences for a distance of 100 feet on either side

of these residences to ensure that construction equipment and materials, including the spoil pile, remain within the construction work area.

For the residence located immediately adjacent to TAR 723.2, Texas Eastern anticipates use of this portion of the access road to be limited to the infrequent need to access water supplies. As such, a fence would be constructed to ensure that construction equipment and materials, including the spoil pile, remain within the construction work area and to ensure that the landowners at this residence have easy access to their home and garage during construction activities for the Project. Texas Eastern developed a sitespecific plan to ensure access and safe conditions for the residence adjacent to TAR 723.2 and it was provided in its application (see appendix A). Access restrictions to residents would not occur during construction. Loading and unloading activities would be conducted in accordance with the West Virginia Department of Highway policies, and all access roads would be maintained in a condition as good as or better than conditions existing prior to mobilization. Texas Eastern would implement the site-specific plan and ensure that construction equipment, materials, and spoil piles, remain within the access road boundary. We have reviewed Texas Eastern's site specific plan for this residence and find it is acceptable.

Texas Eastern states it is not aware of any proposed residential or commercial developments within 0.25 miles of the Project area.

5.1 Public Lands, Recreation and other Designated Areas

The Project is not located within any public or conservation land, or within natural, recreational, scenic, or other special land uses, nor is it near any registered natural landmarks. The Project is not located within 0.25 mile of any state designated park, forest, wildlife management area, or wild and scenic river. The Project also is not located within 0.25 mile of any river designated, or included for study in, the National Wild and Scenic Rivers System, a wilderness area as designated under the Wilderness Act, or a national park, national historical landmark, or National Register of Historic Places. Therefore, construction and operation of the Project would not have a significant impact on public lands and recreational resources.

5.2 Hazardous Sites

A search of federal and state databases and other sources was conducted to identify known hazardous waste sites within the Project area. The nearest contaminated site identified is the Fort Beeler Cryogenic Plant approximately 0.5 mile northwest of the Project; and the nearest contaminated site to the Bristoria Wareyard is the Vantage Energy Appalachia II, LLC facility located approximately 2 miles southeast. The closest Resource Conservation and Recovery Act (RCRA) facility to the Project area is the Fort Beeler Gas Processing Plant, approximately 0.5 mile north, and the closest RCRA facility to the Bristoria Wareyard is Texas Eastern's Holbrook Compressor Station, approximately 2.5 miles northwest.

Texas Eastern does not anticipate encountering any contaminated soils or sediment. However, any contaminated soils or sediment, if encountered during construction of the facilities for this Project, would be managed in accordance with applicable federal and state regulations.

5.3 Visual Resources

Visual impacts would occur during construction and for the duration of mining activity. There are no new aboveground facilities associated with the Project. At the existing Williams M&R Station 73656, the existing tap valves on Lines 10, 15, 25, and 30 would be replaced with straight pipe when the pipes are elevated for the subsidence period. The existing valves are located belowground, and the temporary straight pipe segments would be elevated during the subsidence period. Following completion of mining activities and potential ground subsidence, the tap valves would be reinstalled in their former alignment belowground. Therefore, no permanent effects on the viewshed are anticipated from the Project.

5.4 Coastal Zone Management Areas

The Project is not within a coastal zone management area.

No new permanent impacts on land use would result from construction and operation of the Project as there are no proposed changes in land use. No new permanent easements would be required. Impacts associated with the operation of the pipeline would be limited to continued routine vegetation maintenance along the existing pipeline right-of-way and pipeline maintenance activities, as needed.

We conclude that the Project would not have a significant impact on land use, visual resources, or recreational uses. Those areas temporarily affected would be allowed to revert to prior use once the mining mitigation is concluded.

6.0 Cultural Resources

In addition to accounting for impacts on cultural resources under NEPA, Section 106 of the NHPA, as amended, requires FERC to take into account the effects of its undertakings on historic properties listed, or eligible for listing on the National Register

of Historic Places (NRHP),⁴ and to afford the Advisory Council on Historic Preservation an opportunity to comment. Texas Eastern, as a non-federal party, is assisting FERC in meeting our obligations under Section 106 and its implementing regulations at 36 CFR 800.

6.1 Area of Potential Effects

The area of potential effects (APE) is the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR 800.16(d)). For the Marshall County Mine Panel 19E and 20E Project, the total acreage of the APE is approximately 83.2 acres, including 6.1 acres in Pennsylvania at the Bristoria Ware Yard and 77.1 acres in West Virginia. Due to the Project's location within an existing right-of-way, the APE is sufficient to account for all the potential direct and indirect effects to historic properties by the proposed Project.

6.2 Cultural Resources Investigations

In an effort to identify historic properties within the APE and to account for any effects to those properties by the Project, Texas Eastern conducted a cultural resources investigation which included background research, and a Phase I archaeological identification level survey in the portion of the APE that falls outside of the existing right-of-way. No artifacts were recovered and no archeological sites were identified as a result of the surveys. Because no above ground structures would be removed and no permanent above ground structures constructed, Texas Eastern commended that the Project would not have any potential for direct or indirect (visual) effects on historic architectural properties (Hornum 2019).

On June 4, 2019 the West Virginia State Historic Preservation Officer (WVSHPO) concurred with Texas Eastern's recommendation that no further investigation is necessary for archaeological resources. On July 17, 2019, WVSHPO concurred with Texas Eastern's architectural recommendations, writing that "there would be no permanent changes to the visible environment. As a result, we recommend no above ground resource investigations." We concur with the WVSHPO's opinion that no adverse effects to historic properties would occur from the Project.

On August 1, 2013, Texas Eastern submitted the cultural resources investigation report titled *Supplemental Negative Survey Form, Bristoria Ware Yard, Texas Eastern*

 $^{^4}$ In accordance with 36 CFR 800.16(l)(1), a historic property is any prehistoric or historic district, site, building, structure, object, or property of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization, included in, or eligible for inclusion in, the NRHP. This term includes artifacts, records, and remains that are related to and located within such properties.

Pipeline: Bailey East Longwall Mining Panel 1L Subsistence Mitigation Project, Richhill Township, Greene County to the Pennsylvania Historical and Museum Commission, Bureau for Historic Preservation which serves as the Pennsylvania State Historic Preservation Office (SHPO), requesting review and concurrence with their recommendations that implementation would have no adverse effect on historic properties (Hornum 2013). In a letter dated August 19, 2013, the Pennsylvania SHPO agreed, writing that "[w]e agree with the recommendations of this report and in our opinion no further archaeological work is necessary for this project." We concur with the Pennsylvania SHPO's assessment that no adverse effects to historic properties would occur from the Project.

6.3 Tribal Consultation

Texas Eastern contacted the following Native American tribes regarding the proposed Project Absentee-Shawnee Tribe of Oklahoma; Catawba Indian Nation; Cayuga Nation; Cherokee Nation; Delaware Nation; Delaware Tribe of Indians; Eastern Band of the Cherokee Indians; Eastern Shawnee Tribe of Oklahoma; Oneida Nation of Wisconsin; Oneida Indian Nation; Onondaga Nation; Seneca-Cayuga Tribe of Oklahoma; Seneca Nation of Indians; Shawnee Tribe of Oklahoma; St. Regis Mohawk Tribe; Tonawanda Seneca Nation; Tuscarora Nation; and the United Keetoowah Band of Cherokee Indians. On April 16, 2019, Texas Eastern provided an information packet, including a description Project, an overview map and Texas Eastern's Unanticipated Discoveries and Emergency Procedures plan. This outreach offered the Tribes an opportunity to identify any concerns related to properties of traditional religious or cultural significance that may be affected by the Project. On May 21, 2019, the Catawba Indian Nation responded by letter, informing Texas Eastern that they have "no immediate concern" about Project implementation. Similarly, on November 15, 2019 the Osage Nation wrote the tribe "has no further concern with this project." Later, on February 10, 2020, the Osage Nation requested "a cultural resources survey for this [amended] project." In June 2019, Texas Eastern conducted a cultural resources survey of all lands not covered by the company's categorical exclusion with WVSPHO, reporting the results in Supplemental Phase I Archaeological Survey in Support of the Marshall County Mine Panels 19E and 20E Project. Texas Eastern submitted electronic and hard copies of the supplemental report to the Osage Nation on February 26, 2020. There have been no additional comments received to date.

6.4 Unanticipated Discoveries Plan

Texas Eastern developed a Project-specific plan titled: *Unanticipated Discoveries* and *Emergency Procedures*, which outlines the procedures to follow, in accordance with state and federal laws, in the event that unanticipated cultural resources or human remains are discovered during construction of the Project, including consultation with FERC, the

SHPO, and tribes regarding discoveries. The plan was submitted to FERC and the Pennsylvania and West Virginia SHPOs. FERC requested minor revisions to the plan. Texas Eastern provided a revised plan which we find acceptable.

6.5 Compliance with the National Historic Preservation Act

FERC has completed its compliance requirements with Section 106 of the NHPA for the Project.

7.0 Air Quality and Noise

7.1 Air Quality

Air quality would be affected by construction and operation of the Project. During construction, short-term emissions would be generated from the usage of equipment, land disturbance, and increased traffic from worker and delivery vehicles for all locations. No operational emissions would be associated with the Project.

Ambient air quality is protected by federal and state regulations. Under the Clean Air Act (CAA) and its amendments, the EPA has established National Ambient Air Quality Standards (NAAQS)⁵ for carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂) ozone, particulate matter less than 10 microns (PM₁₀), particulate matter less than 2.5 microns (PM_{2.5}), and sulfur dioxide (SO₂). The WVDEP have the authority to implement permit programs under the CAA for the proposed Project facilities.

These standards incorporate short-term (hourly or daily) levels and long-term (annual) levels to address acute and chronic exposures to the pollutants, as appropriate. The NAAQS include primary standards, which are designed to protect human health, including the health of sensitive subpopulations such as children and those with chronic respiratory problems. The NAAQS also include secondary standards designed to protect public welfare, including economic interests, visibility, vegetation, animal species, and other concerns not related to human health. Table 10 presents the NAAQS.

Air quality control regions (AQCRs) are areas established by the EPA and local agencies for air quality planning purposes, in which State Implementation Plans describe how the NAAQS would be achieved and maintained. The AQCRs are intra- and interstate regions such as large metropolitan areas where improvement of the air quality in one portion of the AQCR requires emission reductions throughout the AQCR. Each AQCR, or smaller portion within an AQCR (such as a county), is designated, based on

⁵ The current NAAQS are listed on EPA's website at https://www.epa.gov/criteria-air-pollutants/naaqs-table.

	Та	ble 10				
	National Ambient	Air Quality Standards				
	-	Standards				
Pollutant	Averaging Period	Primary	Secondary			
Sulfur dioxide (SO ₂)	1-hour ^{l,m}	75 ppb				
	2 have b	196 μg/m ³	0.5 ppm			
	5-nour °		$1300 \mu g/m^3$			
	Annual a,m	0.03 ppm				
	2 Annuur -	$80 \ \mu g/m^3$				
	24-hour ^b ,m	0.14 ppm				
		$365 \ \mu g/m^3$				
PM ₁₀	24-hour ^d	$150 \ \mu g/m^3$	$150 \ \mu g/m^3$			
PM _{2.5} (2012 Standard)	Annual ^e	12.0 μ g/m ³	15.0 μg/m ³			
PM _{2.5} (2006 Standard)	24-hour ^f	$35 \ \mu g/m^3$	$35 \ \mu g/m^3$			
Nitrogen Dioxide (NO ₂)	Annual ^a	0.053 ppm (53 ppb)	0.053 ppm (53 ppb)			
		$100 \ \mu g/m^3$	$100 \ \mu g/m^3$			
	1-hour ^c	100 ppb 188 μg/m ³				
Carbon Monoxide (CO)	8-hour ^b	9 ppm 10,000μg/m ³				
	1-hour b	35 ppm				
		40,000 $\mu g/m^3$				
Ozone (2008 Standard)	8-hour g,h	0.075 ppm	0.075 ppm			
Ozone (2015 Standard)	8-Hour ⁱ	0.070 ppm	0.070 ppm			
Ozone (O3)	1-hour j,k	0.12 ppm	0.12 ppm			
Lead (Pb)	Rolling 3-month ^a	$0.15 \ \mu g/m^3$	$0.15 \ \mu g/m^3$			

a. Not to be exceeded

b. Not to be exceeded more than once per year

c. Compliance based on 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area
 d. Not to be exceeded more than once per year on average over 3 years

e. Compliance based on 3-year average of weighted annual mean PM2.5 concentrations at community-oriented monitors

f. Compliance based on 3-year average of 98th percentile of 24-hour concentrations at each population-oriented monitor within an area g. Compliance based on 3-year average of fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area

k. The 1-hour ozone standard has been revoked in all areas in which Project activities would occur

I. Compliance based on 3-year average of 99th percentile of the daily maximum 1-hour average at each monitor within an area

m. The 24-hour and annual average primary standards for SO2 have been revoked.

ppm = parts per million by volume; ppb = parts per billion by volume.

 $\mu g/m^3 =$ micrograms per cubic meter.

The 2008 8-hour ozone standard would remain in effect until one year after an area is designated for the 2015 8-hour ozone standard, which corresponds h. with January 16, 2019 based upon attainment designations for the 2015 ozone standard issued on January 16, 2018

Permit applications that have not met EPA's grandfathering criteria would have to demonstrate that the proposed project does not cause or contribute to a violation of any revised ozone standards that are in effect when the permit is issued, including the 2015 revised standards

j. Maximum 1-hour daily average not to be exceeded more than one day per calendar year on average

compliance with the NAAQS, as attainment, unclassifiable, maintenance, or nonattainment, on a pollutant by-pollutant basis. Areas in compliance or below the NAAQS are designated as attainment, while areas not in compliance or above the NAAQS are designated as nonattainment. Areas previously designated as nonattainment that have since demonstrated compliance with the NAAQS are designated as maintenance for that pollutant. Maintenance areas may be subject to more stringent regulatory requirements to ensure continued attainment of the NAAQS. Areas that lack sufficient data to determine attainment status are designated unclassifiable and treated as attainment areas. The Project is located in the Steubenville-Weirton-Wheeling AQCR The Project would be located in Marshall County, West Virginia, which is designated as attainment for all criteria pollutants.

Permitting/Regulatory Requirements

Prevention of Significant Deterioration and Nonattainment New Source Review

The Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR) air permit programs are designed to protect air quality when air pollutant emissions are increased either through the construction of new major stationary sources or major modifications to existing stationary sources. The WVDEP administer the PSD and NNSR permitting programs in their state. These programs do not apply to the Project.

Title V Permitting

Title V is an operating air permit program run by each state for each facility that is considered a "major source." Emissions associated with the Project would result from construction activities and would not result in any new sources, therefore, this program does not apply to the Project.

New Source Performance Standards (NSPS)

The EPA promulgates NSPS to establish emission limits and fuel, monitoring, notification, reporting, and recordkeeping requirements for stationary source types or categories that cause or contribute significantly to air pollution. Emissions associated with the Project are from construction activities and would not result in any new sources, therefore this program does not apply to the Project.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The 1990 CAA Amendments established a list of 189 hazardous air pollutants (HAPs), resulting in the promulgation of NESHAP. The NESHAP regulates HAP emissions from specific source types located at major or area sources of HAPs by setting

emission limits, monitoring, testing, record keeping, and notification requirements. Emissions associated with the Project are from construction activities, no new sources of emissions are proposed, and therefore this program does not apply to the Project.

State and Local Regulations

There are so additional regulations that apply to the Project.

General Conformity

The EPA promulgated the General Conformity Rule to implement the conformity provision of Title I, Section 176(c)(1) of CAA. Section 176(c)(1) requires that the federal government not engage, support, or provide financial assistance for licensing or permitting, or approve any activity not conforming to, an approved CAA implementation plan.

The General Conformity Rule is codified in Title 40 CFR Part 51, Subpart W and Part 93, Subpart B, Determining Conformity of General Federal Actions to State or Federal Implementation Plans. A conformity determination must be conducted by the lead federal agency if a federal action's construction and operational activities is likely to result in generating direct and indirect emissions that would exceed the conformity threshold (*de minimis*) levels of the pollutant(s) for which an air basin is in nonattainment or maintenance. According to the conformity regulations, emissions from sources that are subject to any NNSR or PSD permitting/licensing (major or minor) are exempt and are deemed to have conformed.

The General Conformity Rule was developed to ensure that federal actions in nonattainment and maintenance areas do not impede states' attainment of the NAAQS. The lead federal agency must conduct a conformity determination if a federal action's construction and operational activities is likely to result in generating direct and indirect emissions that would exceed the General Conformity Applicability threshold levels of the pollutant(s) for which an air basin is designated nonattainment or maintenance. Section 176(c)(1) states that a federal agency cannot approve or support any activity that does not conform to an approved State Implementation Plan. Conforming activities or actions should not, through additional air pollutant emissions:

- cause or contribute to new violations of the NAAQS in any area;
- increase the frequency or severity of any existing violation of any NAAQS; or
- delay timely attainment of any NAAQS or interim emission reductions.

The General Conformity Rule entails both an applicability analysis and a subsequent conformity determination, if deemed necessary. A General Conformity Determination must be completed when the total direct and indirect emissions of a project would equal or exceed the specified pollutant thresholds on a calendar year basis for each nonattainment or maintenance area.

As noted earlier, the Project facilities would be constructed and operated within counties in attainment for all criteria pollutants, therefore, a General Conformity Determination would not be required.

Greenhouse Gases

Greenhouse gases (GHGs) occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. GHGs are gases that absorb infrared radiation in the atmosphere, and an increase in emissions of these gasses has been determined by the EPA to endanger public health and welfare by contributing to global climate change. The most common GHGs emitted during fossil fuel combustion and natural gas transportation are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Emissions of GHGs are typically expressed in terms of CO₂ equivalents (CO₂e), where the potential of each gas to increase heating in the atmosphere is expressed as a multiple of the heating potential of CO₂ over a specific timeframe, or its global warming potential (GWP).⁶. The 100-year GWP of CO₂ is 1, CH₄ is 25, and N₂O is 298. During construction and operation of the Project, these GHGs would be emitted from non-electrical construction and operational equipment, as well as from fugitive CH₄ leaks from the pipeline and aboveground facilities.

On November 8, 2010, the EPA signed a rule that finalizes reporting requirements for the petroleum and natural gas industry under 40 CFR 98. Subpart W of 40 CFR 98 requires petroleum and natural gas facilities that emit 25,000 metric tons or more of CO₂e per year to report annual emissions of specified GHGs from various processes within the facility. Construction emissions are not covered under the GHG Reporting Rule, but those related to the proposed Project are expected to be well below the 25,000 metric tons reporting threshold. Operational emissions from the proposed facilities are likewise not expected to exceed this threshold and be reported to the EPA. The EPA has expanded its regulations to include the emission of GHGs from major stationary sources under the PSD program. The EPA's current rules require that a stationary source that is major for a non-GHG-regulated New Source Review pollutant must also obtain a PSD permit prior to beginning construction of a new or modified major source with mass-based GHG emissions equal to or greater than 100,000 tons per year (tpy) and significant net

⁶ These GWPs are based on a 100-year time period. We have selected their use over other published GWPs for other timeframes because these are the GWPs the EPA has established for reporting of GHG emissions and air permitting requirements. This allows for a consistent comparison with these regulatory requirements.

emission increases in units of CO_2 e equal to or greater than 75,000 tpy. There are no NAAQS or other significance thresholds for GHGs.

Construction Emissions

Construction of the Project would result in short-term increases in emissions of some pollutants from the use of fossil fuel-fired equipment and the generation of fugitive dust due to earthmoving activities. Some temporary indirect emissions, attributable to construction workers commuting to and from work sites during construction and from on-road and off-road construction vehicle traffic, could also occur. Large earth-moving equipment and other mobile equipment are sources of combustion-related emissions, including criteria pollutants (i.e., NO_x, CO, VOC, SO₂, and PM₁₀).

Texas Eastern would mitigate exhaust emissions from construction equipment by requiring contractors to meet all air quality regulations and emission standards associated with each piece of equipment, and limit idling of diesel and gasoline powered on-road vehicles and non-road construction equipment operating at, or visiting, the construction site. In order to minimize fugitive dust emissions, Texas Eastern would mitigate by utilizing water, calcium chloride, or other commercially available dust control agents to dampen areas during dry conditions, controlling and removing any soil deposited on roads by construction vehicles, covering haul loads and maintaining appropriate low vehicle speeds on unpaved roads.

Construction of the Project is estimated to occur between April and October 2020, prior to the start of the winter heating season. Reburial of the pipelines below grade is planned to begin in April 2021 for Mine Panel 19E, and April 2022 for Mine Panel 20E, after the cessation of ground subsidence and following the winter heating season in 2022. The Project is expected to be completed and all pipeline segments returned to service by October 2022. These emissions present the combined emissions for each facility, construction equipment combustion, on-road vehicle travel, off-road vehicle travel, and earthmoving fugitives. Construction related emission estimates were based on a typical construction equipment list, hours of operation, and vehicle miles traveled by the construction equipment and supporting vehicles for each area of the Project. These emission-generating activities would include earthmoving, construction equipment exhaust, on-road vehicle traffic, and off-road vehicle traffic. Texas Eastern conservatively utilized emission factors from EPA's NONROAD2008a and MOVES2014 emission modeling software.

Construction of the Project would cause a temporary reduction in local ambient air quality due to fugitive dust and emissions generated by construction equipment. This temporary impact would occur only in the immediate vicinity of the construction activity. Once the construction activity in an area is completed, the fugitive dust and emissions would subside and revert to pre-construction conditions. Estimates of construction air emissions are shown in table 11 below.

Table 11Marshall County Mine Panels 19E and 20E ProjectConstruction Estimated Criteria Emissions Summary

						•		
Excavation (Calendar Year 2020)			C-it		A D D - U	ta (ta a a)		
			Crite	eria and HA	AP Pollutan	ts (tons)	1	
	NOx	SO ₂	CO	PM10	PM _{2.5}	VOC	CO2e	Total HAPs
Worker Commute Exhaust	0.297	0.003	4.11	0.070	0.016	0.071	422.35	0.005
Delivery Truck Exhaust	0.694	0.001	0.405	0.057	0.037	0.044	139.47	0.006
Construction Equipment Exhaust	9.67	0.023	8.09	0.466	0.451	0.861	3,301	0.238
Fugitive Dust from Travel on Unpaved Roads								
				7.49	0.745			
Fugitive Dust from Travel on Paved Roads				1.17	0.287			
Fugitive Emissions and Blowdowns				11.60	1.97		82,632	1.211
Operational Activities ^a						0.0004	1.20	
Total	10.66	0.027	12.61	20.85	3.50	0.976	86,496	1.46
Reinstallation (Calendar Year 2021)			~ •					
	Criteria and HAP Pollutants (tons)						1	
	NOx	SO ₂	СО	PM10	PM _{2.5}	VOC	CO2e	Total HAPs
Worker Commute Exhaust	0.123	0.001	1.90	0.034	0.008	0.029	204.18	0.002
Delivery Truck Exhaust	0.625	0.001	0.375	0.053	0.034	0.039	138.13	0.005
Construction Equipment Exhaust	8.76	0.023	7.64	0.402	0.388	0.789	3,301	0.238
Fugitive Dust from Travel on Unpaved Roads								
				4.36	0.434			
Fugitive Dust from Travel on Paved Roads				0.783	0.192			
Fugitive Emissions and Blowdowns				5.40	0.900		51,927	0.606
Operational Activities ^a						0.0006	1.79	
Total	9.51	0.026	9.92	11.04	1.96	0.858	55,572	0.851
Reinstallation (Calendar Year 2022)			~ •					
			Crite	eria and H	AP Pollutan	ts (tons)		
	NOx	SO ₂	СО	PM10	PM _{2.5}	VOC	CO2e	Total HAPs
Worker Commute Exhaust	0.123	0.001	1.90	0.034	0.008	0.029	204.18	0.002
Delivery Truck Exhaust	0.625	0.001	0.375	0.053	0.034	0.039	138.13	0.005
Construction Equipment Exhaust	8.76	0.023	7.64	0.402	0.388	0.789	3,301	0.238
Fugitive Dust from Travel on Unpaved Roads				4.36	0.434			
Fugitive Dust from Travel on Paved Roads				0.783	0.192			
Fugitive Emissions and Blowdowns				5.08	0.834		43,554	0.606
Operational Activities ^a						0.0005	1.49	
Total	0.51	0.026	0.02	10 72	4 00	0.050	47 100	0.95

a . Operational Activities relates to fugitive emissions during the time pipelines are operating above ground.

Given the temporary and intermittent nature of construction and limited length of

pipeline disturbance, we find that emissions from construction-related activities for the Project would not be expected to cause or significantly contribute to a violation of any applicable ambient air quality standard, or significantly affect local or regional air quality.

Operational Emissions

Minor amounts of emissions would be released due to fugitives, but as those are minimal, and there are no new permanent sources of operational emissions proposed as part of the Project, we conclude that operational emissions would not have a significant impact on air quality in the area.

7.2 Noise

Construction and operation of the Project would affect the local noise environment in the Project area. The ambient sound level of a region, which is defined by the total noise generated within the specific environment, is usually comprised of sounds emanating from both natural and artificial sources. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of the day and throughout the week, in part due to changing weather conditions and the impacts of seasonal vegetative cover.

The EPA published its Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Two measurements used by some federal agencies to relate the time-varying quality of environmental noise to its known effects on people are the equivalent sound level (L_{eq}) and the day-night sound level (L_{dn}). The L_{eq} is an A-weighted sound level containing the same sound energy as the instantaneous sound levels measured over a specific time period. Noise levels are perceived differently, depending on length of exposure and time of day. The L_{dn} takes into account the duration and time the noise is encountered. Specifically, in the calculation of the L_{dn} , late night to early morning (10:00 PM to 7:00 AM) noise exposures are penalized +10 decibels (dB), to account for people's greater sensitivity to sound during the nighttime hours. The A-weighted scale (dBA) is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. For an essentially steady sound source that operates continuously over a 24hour period and controls the environmental sound level, the L_{dn} is approximately 6.4 dB above the measured L_{eq} .

The EPA has indicated that an L_{dn} of 55 dBA protects the public from indoor and outdoor activity interference. We have adopted this criterion and use it to evaluate the potential noise impacts from the proposed Project at noise sensitive areas (NSAs), such as residences, schools, or hospitals. Also, in general, a person's threshold of perception for a perceivable change in loudness on the A-weighted sound level is about 3 dBA, whereas a 6 dBA change is clearly noticeable, and a 10 dBA change is perceived as either twice or

half as loud.

There are no state or local noise ordinances applicable to the project.

Construction Noise

Construction of the facilities would involve operation of general construction equipment and noise would be generated during the installation of the Project components. The construction activities would cause a temporary increase in the ambient noise in the immediate vicinity of the construction site; however, because of the temporary nature of the construction activities, there would be no significant noise impact from construction. Construction noise would be highly variable because the types of equipment in use at a construction site changes with the construction phase and the types of activities. Noise from construction activities may be noticeable at nearby NSAs. However, construction equipment would be operated on an as-needed basis during the short-term construction period. Texas Eastern construction activities would occur between 7:00 AM and 9:00 PM, except when required for activities such as hydrostatic testing, operation of pumps at waterbody crossings, or tie-in activities that require continuous work. FERC staff considers daytime hours to be 7:00 AM to 7:00 PM. Advanced notice of nighttime construction would be provided to the residents informing them of the planned activities. Additionally, temporary relocation or compensation would be available to affected residents.

Measures to mitigate construction noise would include compliance with federal regulations limiting noise from trucks, proper maintenance of equipment, and ensuring that sound muffling devices provided by the manufacturer are kept in good working condition.

Construction of the Project would be short-term and intermittent, with proposed mitigation for nighttime construction. Based on this, we conclude that construction noise would not have a significant impact on the surrounding environment.

Operation

There are no noise-emitting facilities that would increase the ambient noise environment during operation of the project. We conclude that the Project would not result in continuing noise impacts on residents and the surrounding communities.

8.0 Reliability and Safety

The transportation of natural gas by pipeline involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a major pipeline rupture. Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death.

The pipelines associated with the project must be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR Part 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures.

The DOT pipeline standards are published in Parts 190-199 of Title 49 of the CFR. For example, Part 192 of 49 CFR specifically addresses natural gas pipeline safety issues, prescribes the minimum standards for operating and maintaining pipeline facilities, and incorporates compressor station design, including emergency shutdowns and safety equipment. Part 192 also requires a pipeline operator to establish a written emergency plan that includes procedures to minimize the hazards in a natural gas pipeline emergency.

The operator must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to appropriate public officials.

Facilities associated with the Project must be designed, constructed, operated, and maintained in accordance with DOT standards, including the provisions for written emergency plans and emergency shutdowns. Texas Eastern would provide the appropriate training to local emergency service personnel before the facilities are placed in service.

The Project purpose is to decrease the risk of damage from subsidence. The pipeline would be monitored for damage when placed on the surface and would be tested to ensure compliance with DOT pipeline standards. We conclude that the Project would not represent an increase in risk to the nearby public.

Polychlorinated Biphenyls

When any existing station piping or pipeline is cut, the contractor would follow the EPA issued Polychlorinated Biphenyls (PCB) rules and regulations contained in 40 CFR Part 761. Lines 10, 15, 25, and 30 are PCB-regulated as PCB's have historically been detected at concentrations greater than 50 parts per million in pipeline liquids. The removed pipe would be sampled, and, if present, free flowing liquids would be removed and sampled in accordance with 40 CFR Part 761.

9.0 Cumulative Impacts

In accordance with NEPA, we identified other actions located in the vicinity of the Project facilities and evaluated the potential for a cumulative impact on the environment. As defined by the Council on Environmental Quality (CEQ), a cumulative effect is the 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 or person undertakes such other actions. CEQ guidance states that an adequate cumulative effects analysis may be conducted by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions. In this analysis, we consider the impacts of past projects within defined geographic scopes as part of the affected environment (environmental baseline) which were described and evaluated in the preceding environmental analysis. However, present effects of past actions that are relevant and useful are also considered.

Our cumulative effects analysis focuses on potential impacts from the proposed Project on resource areas or issues where the incremental contribution could result in cumulative impacts when added to the potential impacts of other actions. To avoid unnecessary discussions of insignificant impacts and projects and to adequately address and accomplish the purposes of this analysis, an action must first meet the following three criteria to be included in the cumulative analysis:

- affects a resource also potentially affected by the Project;
- causes this impact within all, or part of, the Project area defined by the resource-specific geographic scope; and
- causes this impact within all, or part of, the time span of the Project's estimated impacts.

As described in the environmental analysis section B of this is EA, constructing and operating the Project would temporarily and permanently impact the environment. The Project would affect geology, soils, water resources, vegetation, wetlands, wildlife, visual resources, air quality, noise, and some land use. However, we conclude that these impacts would not be significant. We also conclude that many of the Project-related impacts would be minimal, localized, and/or temporary and are not expected to contribute to regional cumulative impacts. For example, land use impacts are negligible as impacts would primarily occur within existing pipeline corridors, no new permanent easements are proposed, and once the longwall mining activities are completed, the land would revert to pre-construction conditions. Additionally, we determined that visual impacts would be temporary and minimal at any discrete location along the Project route, and there would be no permanent changes to the visual environment. Further, based on surveys and consultation, the Project is not anticipated to result in any impacts on cultural resources. Air quality would not be affected by operation of the Project; once construction activities have finished, there would be no new sources of operational emissions. Additionally, we determined that there would be no significant noise impacts during construction of the Project due to the length of the construction timeline and localized nature of the activities. Once completed, there would not be a source of operational noise levels. Therefore, cumulative impacts have not been assessed further for land use, visual impacts, cultural resources, operational air quality, and operational and construction noise for the Project.

Resources that could be affected outside the immediate Project area and are subject to our cumulative impacts review include: soils, geology, groundwater, surface water, wetlands, wildlife, vegetation, and construction air quality. Based on the impacts of the Project as identified and described in this EA and consistent with CEQ guidance, we have determined that the resource-specific geographic scopes described table 12 below are appropriate to assess cumulative impacts.

Table 12Geographic Scope for Cumulative Impact Analysis					
Environmental Resource	Area of Impact				
Soils and Geology	Construction workspaces				
Groundwater, Surface Water, Wetlands, Vegetation, Wildlife	Hydrologic Unit Code (HUC) 12 Watershed				
Air Quality – Construction	0.25 mile from pipeline or aboveground facilities				

In addition to the geographic relationship between the Project and other projects in the area, we also consider the temporal relationship between the Project and other projects in the area. As discussed throughout the EA, the majority of impacts associated with the Project would occur during construction and most resources would return to preconstruction conditions shortly after or within 3 years of construction. Thus, construction related cumulative impacts could occur if other projects in the defined geographic scope would affect the same resources within these timeframes.

Based on the geographic and temporal scopes described above, we identified multiple projects as possible contributors to cumulative impacts in the area, listed in table 13. The projects considered in our cumulative impact analysis may vary from the Project in nature, magnitude, and duration. They include a nearby Texas Eastern mine mitigation project (previously approved by the Commission), longwall coal mining by Marshall Coal, an electric utility project, and a road widening project. We also included five existing pipelines in the Project area, as we expect they may need to conduct subsidence mitigation similar to the proposed Project. Texas Eastern states it is not aware of the methods other companies would use to mitigate potential subsidence impacts. No publicly available information regarding permits or federal actions for these pipelines was located. If foreign pipeline companies excavate their pipelines as part of longwall mining activities, impacts to resources would be short-term during construction in a similar footprint to the Project.

Table 13 Marshall County Mine Panels 19E and 20E Project Projects Considered in the Cumulative Impacts Analysis									
Project Name, Sponsor/Prop onent, and Location (county)	Approximate Distance and Direction from the Project	Type and Description	Footprint/ Layout and Anticipated Impacts	Permits or Authorizations Required for the Project	Current Status	Anticipated Impacts – Wetlands and Forested Lands	Surface Waters Crossed	Protected Species	Air Quality Impacts
Bailey East Panel 11J Project, Texas Eastern, Marshall County, West Virginia	0.7 mile east of the Project	Approximately 0.5 mile of natural gas pipeline elevation and replacement	Project would Impact approximately 25 acres during construction	FERC Certificate, application submitted August 2019	Construction in 2020 and expected to be completed in 2021	Wetlands 0.71 acre <u>Forested</u> Land 4.89 acres	11	Indiana Bat Northern Long- eared Bat	Outside of the 0.25- mile geographic scope
Marshall County Mine Panels 19E and 20E, Marshall Coal, Marshall County, West Virginia	Directly beneath the Project	Longwall coal mining	Limited surface impacts. estimated <0.5 acre.	West Virginia state permitting	Mine Panels 19E and 20E expected to be mined in 2020 and 2021	Wetlands 0 acres	0	Bird Species 25 Birds of Conservat ion Concern <u>T&E</u> Indiana Bat Northern Long- eared Bat	Temporary and minorconstr uction emissions
AEP Moundsville Area Transmission Rebuild Project	Approximate ly 7.3 miles west	Rebuild 11 miles of transmission line and upgrades to multiple substations along the project route	Linear footprint on mostly existing ROW estimated at 130 acres total project size	West Virginia state permitting	Construction began mid- 2019 and concluded at the end of August 2019.	Not listed	Not listed	Not listed	Outside of the 0.25- mile geographic scope

		Manakall	C 4 M	Table 13	10E	10E D	• • • •		
	Projects Considered in the Cumulative Impacts Analysis								
Project Name, Sponsor/Prop onent, and Location (county)	Approximate Distance and Direction from the Project	Type and Description	Footprint/ Layout and Anticipated Impacts	Permits or Authorizations Required for the Project	Current Status	Anticipated Impacts – Wetlands and Forested Lands	Surface Waters Crossed	Protected Species	Air Quality Impacts
WV Route 2 Widening Project in Moundsville	Approximate ly 8.3 miles west	Widening Project and Bridge Replacement in Moundsville from the intersection of 5 th Street to the intersection with US 250 Extension	1,780 acres (acreage of ROW and temporary easements)	West Virginia state permitting	Majority of project complete.	Wetlands 3.03 acres <u>Forested</u> <u>Land</u> 174.61 acres	1,993 linear feet	0	Outside of the 0.25- mile geographic scope.
24-inch- diameter existing Williams Line Marshall County, WV	0 Miles (crosses project)	Existing foreign pipeline crossing at approximate survey station No. (SSN) 38167+73	Linear footprint	Unknown	Unknown	Unknown Approx. 0.19 acre <u>Forested</u> Lands 0 acres	2	Indiana Bat Northern Long- eared Bat	Potential temporary construction emissions
UGI Pipeline 1758-010 Marshall County, WV	0 Miles (crosses project)	Existing foreign pipeline crossing at approximate survey station No. 38166+55	Linear footprint	Unknown	Unknown	Unknown <u>Wetlands</u> Approx. 0.19 acre <u>Forested</u> <u>Lands</u> 0 acres	2	Indiana Bat Northern Long- eared Bat	Potential temporary construction emissions No known operational air impacts
Existing TC Energy Pipeline 10100-0030 Marshall County, WV	0 Miles (crosses project)	Existing foreign pipeline crossing at approximate survey station no. 38167+13	Linear footprint	Unknown	Unknown	Unknown	2	Indiana Bat Northern Long- eared Bat	Potential temporary construction emissions
20-inch- diameter existing Williams Line Marshall County, WV	0 Miles (crosses project)	Existing foreign pipeline crossing at approximate survey station no. 38162+20	Linear footprint	Unknown	Unknown	Unknown	0	Indiana Bat Northern Long- eared Bat	Potential temporary construction emissions

Table 13Marshall County Mine Panels 19E and 20E ProjectProjects Considered in the Cumulative Impacts Analysis									
Project Name, Sponsor/Prop onent, and Location (county)	Approximate Distance and Direction from the Project	Type and Description	Footprint/ Layout and Anticipated Impacts	Permits or Authorizations Required for the Project	Current Status	Anticipated Impacts – Wetlands and Forested Lands	Surface Waters Crossed	Protected Species	Air Quality Impacts
12-inch- diameter existing Williams Line Marshall County, WV	0 Miles (parallels project)	Parallels the north side of Texas Eastern's existing right of way from SSN 38166+20 and 38184+00	Linear footprint	Unknown	Unknown	Unknown	2	Indiana Bat Northern Long- eared Bat	Potential temporary construction emissions No known operational air impacts

Geology

The geographic scope of the cumulative impact evaluation for geologic resources is the construction workspace. Several projects identified in table 13 overlap with the Project's construction workspace, including the Marshall Coal mining activity for Mine Panels 19E and 20E, and four existing foreign pipelines that cross the construction work area. The mining activity for Mine Panels 19E and 20E would be taking place directly under the Project footprint. The existing foreign pipelines are already installed but could be exposed for monitoring during longwall mining activities.

No permanent impacts on near-surface geological resources, mineral resources, or geological processes are expected to occur as a result of the Project, or potential subsidence mitigation activities for the existing pipelines. Temporary effects are also unlikely. Marshall Coal's mining activities would affect the geologic resources from coal extraction and subsequent subsidence. Texas Eastern would mitigate surface settling after mining in an effort to protect the pipelines. The Project and any activities completed by the four existing foreign pipelines would have minimal impact on geology due to mitigation of the surface settling within existing easements.

Additionally, Texas Eastern's Bailey East Mine Panel 11J Project would also utilize the Bristoria Wareyard during the construction of the Project, but the projects would not impact near-surface geological resources, mineral resources, or geological processes at the Bristoria Wareyard; and therefore, would not result in a cumulative impact on geological resources. For these reasons, we conclude that cumulative impacts on geologic resources would be negligible.

Soils

The geographic area considered in the cumulative impact evaluation is comprised of the construction workspaces for the Project. Potential cumulative effects resulting from construction activities and operations and maintenance have been considered as part of this analysis. Projects identified in table 13 overlap with the Project's construction workspaces, including Marshall Coal's mining activity for Mine Panels 19E and 20E, and four existing foreign pipelines that cross the CWA. Marshall Coal's longwall mining activities are not expected to affect soils or contribute to additional erosion or sedimentation where it overlaps with the Project. The existing foreign pipelines may require temporary soil disturbance during excavation to expose the pipelines so that they can be monitored during longwall mining activities and potential ground subsidence. However, if the foreign pipeline companies excavate their pipelines, the impacts would be temporary since they would also be required to implement erosion and sediment controls and undertake vegetative restoration. The temporary and minor impacts of the Project on soils, would be unlikely to result in a significant cumulative effect at the construction workspace in Marshall County, West Virginia. The Project would implement erosion and sediment controls, undertake vegetative restoration, and implement other measures of the E&SCP.

Texas Eastern's Bailey East Mine Panel 11J Project would also utilize the Bristoria Wareyard. Erosion controls would be used at the site to minimize any potential impacts due to water erosion. The project could contribute to additional soil compaction at the yard, however, Texas Eastern would follow the soil compaction mitigation measures outlined in the FERC Plan during construction of the Project to minimize this impact. The impacts from Projects would be temporary and minimal at the Bristoria Wareyard, and effectively mitigated. Therefore, we conclude there would be no significant cumulative impact on soil resources.

Surface Waters and Wetlands

The geographic scope for cumulative impacts on waterbodies and wetlands is the HUC 12 watershed, and the projects identified in table 13 are located within the same watershed as the Project. However, two of the projects (the electrical transmission project and road project) were anticipated to be complete in 2019, thus reducing the extent and temporal duration of overlapping impacts, since construction activities would not overlap with the Project. This geographic scope and timing concerns are identical for vegetation and wildlife and groundwater in this section. There is potential for cumulative impacts on surface water and wetlands due to the remaining projects. The Project's temporary impacts on surface waters as a result of in-stream work could increase sedimentation and turbidity downstream, but the impacts would be minor and minimized by adherence to Texas Eastern's E&SCP, and FERC's Procedures. Similarly, the other projects listed in table 13 would be required to complete the work in compliance with federal and state permitting requirements, and therefore would implement similar best management practices to minimize impacts when conducting in-water work. The temporary and minor impacts of the Project on waterbodies, when combined with the other temporary and minor impacts anticipated from nearby projects, would be unlikely to result in significant cumulative impacts.

Because the Project impacts mostly palustrine emergent wetlands and a small amount of palustrine scrub-shrub wetlands, no permanent impacts on wetlands are expected to occur. Texas Eastern would follow its E&SCP and the FERC Procedures during all construction and restoration activities in wetlands. Due to the minor and temporary impacts of the Project in combination with other projects that are several miles away or completed at different times, it would not be expected to result in significant cumulative impacts.

Vegetation and Wildlife

The geographic scope and timing concerns for cumulative impacts on vegetation and wildlife is identical to surface waters and wetlands. While the projects identified in table 13 are located within the same watershed as the Project, two of the projects (the electrical transmission project and road project) were anticipated to be completed in 2019, thus reducing the extent and temporal duration of overlapping impacts since construction activities would not overlap with the proposed Project.

Vegetation clearing would be located within and adjacent to the existing pipeline right-of-way, to the extent practicable, to minimize impacts on forested habitat. The effects on vegetation would be largely temporary and restoration to preconstruction conditions would be completed following construction and temporary workspaces are expected to be fully revegetated within several growing seasons, with the exception of forested areas. Clearing of forested land has been limited to only that needed to safely construct the Project. Overall impacts on wildlife and habitat as a result of the Project are expected to be minor and temporary. Wildlife may be disrupted by construction, causing temporary displacement away from the area to other suitable habitats nearby during active construction. The potential effects on vegetation and wildlife from the other projects listed in table 13 would likely be similar to the Project. These other projects would also be subject to similar permitting requirements, including consultation with the FWS regarding protected bat species, and would be restored upon completion of construction. Based on the temporary and minor impacts that the Project would have on vegetation and wildlife, we do not expect significant cumulative impacts on these resources

Groundwater

The geographic scope and timing concerns of the cumulative impact evaluation for groundwater is identical to surface waters and wetlands. Construction associated with the Project in combination with construction associated with the other projects identified could result in temporary cumulative impacts if construction activities occur concurrently or within several days of one another. While the projects identified in table 13 are within the same watershed as the Project, two of the projects (the electrical transmission project and road project) were anticipated to be completed in 2019, thus reducing the extent and temporal duration of overlapping impacts.

Impacts on groundwater resources from Project activities would be minimal because construction activities would involve shallow excavation (less than 15 feet); excavation is not anticipated to intercept shallow aquifers; the Project would not use groundwater as a source of construction water needs; and given an absence of potable groundwater use in the immediate Project vicinity. Temporary impacts, if they occur, would be limited to short-term turbidity visible in groundwater or reduced infiltration in areas of clearing until reestablishment of vegetation. Further, Texas Eastern's SPCC Plan would prevent or minimize the opportunity for and necessitate immediate control and clean-up of spills of fuels, lubricants, or other hazardous material, and would therefore minimize the opportunity for cumulative impacts that could result if other projects were to also result in spills. We have similar expectations for groundwater impacts as a result of Texas Eastern's Bailey East Mine Panel 11J Project, as that project would involve similar construction methods and mitigation measures, as required by FERC. We also expect the foreign pipelines in the Project area would involve only shallow excavation to potentially mitigate subsidence, and would result in minor and temporary impacts on groundwater. For these reasons, we conclude that cumulative impacts on groundwater would be negligible.

Air Quality

The Marshall Coal Mine Panels 19E and 20E longwall mining activities, the West Virginia Route 2 Widening project and the Bailey East Mine Panel 11J project were identified within the vicinity of the Project with the potential contribute to cumulative impacts to air quality during construction. Any construction activities to mitigate subsidence for the five foreign pipelines that would be crossed or are parallel to the Project may also contribute to construction emissions, although the extent of such

activities is unknown. Construction of these projects would involve the use of heavy equipment that would generate emissions of air pollutants and fugitive dust. Fugitive dust emissions would settle quickly, and dust suppression measures would be implemented at the Project site as necessary to ensure the Project-related effects from fugitive dust are intermittent and temporary and would occur within or very near the construction area. The potential cumulative impacts from the Project and the reasonably foreseeable projects in the vicinity would be temporary and minor. Primary factors that would minimize the contribution to cumulative impacts are that the proposed construction activities have short timelines or would not overlap the temporal scope. In the case of Marshall Coal longwall mining activities, construction would not start until the excavation and elevation of the Project pipelines is complete.

Due to the timing of construction, minimization of fugitive dust as a result of the dust suppression measures, and the highly localized nature of construction emissions, there would be no significant cumulative impacts on air quality during construction.

Conclusion

The longwall mining activities would affect geology by the removal of coal followed by the collapse of the bedrock above the coal seam after mining which could affect soil, water resources, and wildlife temporarily. The proposed Project's contributions to impacts on these resources would be mostly temporary and minor and would be minimized by adherence to Texas Eastern's E&SCP and FERC's Plan and Procedures, as modified. The Project would have minimal impact on geology due to mitigation of the surface settling performed by Texas Eastern. Likewise, soil, water resources, and wildlife habitat would be restored after the temporary impact. Therefore, we have not identified a discernable cumulative impact on soil, geology, water resources, or wildlife.

Project pipeline construction would primarily cause temporary disturbance to vegetation during clearing. The Project is located within the existing pipeline right-of-way, to the extent practicable, to minimize impacts on forested habitat. Temporary effects would either be short-term, where restoration to preconstruction conditions would be completed following construction, or long-term associated with clearing of forested land, where restoration to preconstruction conditions would take place over several growing seasons. Clearing of forested land has been limited to only that needed to safely construct the Project. No new permanent easement and no new permanent structures are required for the Project.

Overall, we conclude that the cumulative impacts on soils, geology, water resources surface waters, wetlands, groundwater, vegetation, wildlife, and air quality

during construction would not be significant. We find that cumulative impacts attributable to the Project would not be significant.

C. ALTERNATIVES

As required by NEPA and the Commission's implementing regulations, we considered alternatives to the proposed action. Specifically, we considered the no-action alternative and alternative pipeline routes. The following evaluation criteria were used to determine whether an alternative would be environmentally preferable:

- ability to meet the project's stated objective;
- technical feasibility and practicality; and
- significant environmental advantage over the proposed action

Texas Eastern's primary objective is to develop a project that would accomplish the purpose and need while avoiding or minimizing potential adverse impacts on the environment to the greatest extent practicable. Texas Eastern states the Project is needed to ensure the safe and continued operation of the four Texas Eastern pipeline facilities that otherwise could be adversely affected as a result of Marshall Coal's longwall mining activities.

No action Alternative

The no action alternative would avoid the temporary environmental impacts associated with the Project but would not accomplish the purpose and need of protecting Texas Eastern's pipelines during longwall mining activities in Mine Panels 19E and 20E. The Project has been designed to ensure the safe operation of Texas Eastern's pipelines at their certificated capacities for the duration of the longwall mining activities. The no action alternative would place the integrity of the pipelines at risk due to possible buckling of the pipeline caused by ground subsidence associated with longwall mining activities. Public safety could be affected if mining were to occur under the pipelines without the proposed mitigation. Mining could be curtailed if the pipeline mitigation is not implemented, disrupting the coal mining operations. Given that protecting the pipelines, and allow Texas Eastern to continue to provide the existing natural gas transportation service to markets in a safe, reliable, and environmentally sound manner, the no action alternative is not considered a viable alternative to the Project.

Routing Alternatives

A potential pipeline routing alternative would be pipeline looping to route the natural gas that is being transported by the Texas Eastern pipelines around the area that

would be impacted by the longwall mining activities and potential ground subsidence. However, there is no existing system infrastructure in place to route the natural gas around the subsidence area, so this alternative would require the development of a new pipeline looping system. This alternative would necessitate the development of a permanent, new greenfield corridor at least 300 to 400 feet wide to accommodate all of the existing pipeline facilities. The pipeline loop required to route around the subsidence area would directly affect wooded habitat, residential properties, and agricultural lands and would require continued operation of the looping on a new pipeline easement (permanent impacts). These impacts would be significantly greater than the temporary disturbances that would be associated with the proposed activities, and a pipeline reroute may not be able to avoid areas that could be mined in the future. For these reasons, we do not recommend pipeline looping as a viable alternative to the proposed action.

We were not able to identify any alternatives to the Project that could reduce impacts. Further, we received no requests to consider other alternatives. We did not identify any alternatives that would meet all three evaluation criteria to be considered a preferred alternative to the proposed Project. In summary, we have determined that the proposed action, as modified by our recommended mitigation measures, is the preferred alternative that can meet the Project's objectives.

D. CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis in this EA, we have determined that if Texas Eastern constructs, and operates the proposed facilities in accordance with its application and supplements, and the staff's recommended mitigation measures, approval of the proposal would not constitute a major federal action significantly affecting the quality of the human environment. We recommend that the Commission's Order contain a finding of no significant impact and include the mitigation measures listed below as conditions to any Certificate the Commission may issue.

- 1. Texas Eastern shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the Order. Texas Eastern must:
 - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary of the Commission (Secretary);
 - b. justify each modification relative to site-specific conditions;
 - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
 - d. receive approval in writing from the Director of OEP **before using that modification**.

- 2. The Director of the OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation of the Project. This authority shall allow:
 - a. the modification of conditions of the Order;
 - b. stop-work authority; and
 - c. the imposition of any additional measures deemed to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from Project construction and operation.
- 3. **Prior to any construction**, Texas Eastern shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors (EIs), and contractor personnel would be informed of the EI's authority and have been or would be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.
- 4. The authorized facility locations shall be as shown in the EA. As soon as they are available, and before the start of construction, Texas Eastern shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for the facility approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

Texas Eastern's exercise of eminent domain authority granted under NGA section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. Texas Eastern's right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas pipeline to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other that natural gas.

5. Texas Eastern shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas

must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP before construction in or near that area.

This requirement does not apply to extra workspaces allowed by the Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan,* and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

- a. implementation of cultural resources mitigation measures;
- b. implementation of endangered, threatened, or special concern species mitigation measures;
- c. recommendations by state regulatory authorities; and
- d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.
- 6. Within 60 days of the acceptance of the Certificate and before construction begins, Texas Eastern shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP. Texas Eastern must file revisions to the plan as schedules change. The plan shall identify:
 - a. how Texas Eastern would implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the Order;
 - b. how Texas Eastern would incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
 - c. the number of EIs assigned, and how the company would ensure that sufficient personnel are available to implement the environmental mitigation;
 - d. company personnel, including EIs and contractors, who would receive copies of the appropriate material;

- e. the location and dates of the environmental compliance training and instructions Texas Eastern would give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel change);
- f. the company personnel (if known) and specific portion of Texas Eastern's organization having responsibility for compliance;
- g. the procedures (including use of contract penalties) Texas Eastern would follow if noncompliance occurs; and
- h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
 - (1) the completion of all required surveys and reports;
 - (2) the environmental compliance training of onsite personnel;
 - (3) the start of construction; and
 - (4) the start and completion of restoration.
- 7. Texas Eastern shall employ at least one EI for the Project. The EI shall be:
 - a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;
 - b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
 - c. empowered to order the correction of acts that violate the environmental conditions of the Order, and any other authorizing document;
 - d. responsible for documenting compliance with the environmental conditions of that Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
 - e. responsible for maintaining status reports.
- 8. Beginning with the filing of its Implementation Plan, Texas Eastern shall file updated status reports with the Secretary **on a bi-weekly basis during active construction and monthly during the elevation period until all construction and restoration activities are complete**. On request, these status reports would also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
 - a. an update on Texas Eastern's efforts to obtain the necessary federal authorizations;
 - b. the construction status of the Project, work planned for the following reporting period, and any schedule changes for stream crossings or work in

other environmentally-sensitive areas;

- c. a listing of all problems encountered and each instance of noncompliance observed by the EIs during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
- d. a description of the corrective actions implemented in response to all instances of noncompliance, and their cost;
- e. the effectiveness of all corrective actions implemented;
- f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
- g. copies of any correspondence received by Texas Eastern from other federal, state, or local permitting agencies concerning instances of noncompliance, and Texas Eastern's response.
- 9. Texas Eastern must receive written authorization from the Director of OEP **before commencing construction of any project facilities.** To obtain such authorization, Texas Eastern must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).
- 10. Within 30 days of completing the subsidence activities mitigation and final hydrotest, Texas Eastern shall file an affirmative statement with the Secretary, certified by a senior company official:
 - a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities would be consistent with all applicable conditions; or
 - b. identifying which of the conditions in the Order Texas Eastern has complied with or would comply with. This statement shall also identify any areas affected by the project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
- 11. Texas Eastern shall **not begin** construction of the Project **until**:
 - a. FERC staff receives comments from the FWS regarding the proposed action;
 - b. FERC staff completes formal ESA consultation with the FWS, if required; and
 - c. Texas Eastern has received written notification from the Director of OEP that construction or use of mitigation may begin.

E. **REFERENCES**

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Appendix A

Residential Site Specific Plan

