Office of
Energy Projects

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Texas Gas Transmission, LLC

Docket No. CP18-116-000

North Lake Pagie and Bay Junop – Bay Round Pipeline Abandonment Project

Environmental Assessment

Washington, DC 20426

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TECHNICAL ABBREVIATIONS AND ACRONYMS

BCC	Birds of Conservation Concern
BCR	Bird Conservation Region
BJB	Bay Junop – Bay Round
CAA	Clean Air Act
Certificate	Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CO_{2e}	carbon dioxide equivalents
Commission	Federal Energy Regulatory Commission
CWA	Clean Water Act
EA	environmental assessment
EFH	essential fish habitat
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
GHG	greenhouse gases
GWP	global warming potential
HAP	hazardous air pollutants
LDNR	Louisiana Department of Natural Resources
LDWF	Louisiana Department of Wildlife and Fisheries
LNHP	Louisiana Natural Heritage Program
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGA	Natural Gas Act
NMFS	National Marine Fisheries Service
NLP	North Lake Pagie
OCM	LDNR Office of Coastal Management
OEP	Office of Energy Projects
PCB	polychlorinated biphenyls
Plan	FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan*
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to 10 microns
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to 2.5 microns
Procedures	FERC's *Wetland and Waterbody Construction and Mitigation Procedures*
SHPO	State Historic Preservation Office
SO_2	sulfur dioxide
SPCC Plan	Spill Prevention Control and Countermeasure Plan
Texas Gas	Texas Gas Transmission, LLC
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compounds

A. PROPOSED ACTION

1.0 Introduction

The Federal Energy Regulatory Commission (Commission or FERC) is the lead federal agency responsible for evaluating applications filed for authorization to construct and operate interstate natural gas pipeline facilities. The FERC staff has prepared this environmental assessment (EA) to analyze the environmental effects of the natural gas pipeline facilities proposed for abandonment by Texas Gas Transmission, LLC (Texas Gas). We[1] prepared this EA in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA) (Title 40 of the Code of Federal Regulations, Parts 1500-1508 [40 CFR 1500-1508]), and with the Commission's implementing regulations under 18 CFR 380.

The EA is an important and integral part of the Commission's decision on whether to issue Texas Gas a Certificate of Public Convenience and Necessity (Certificate) to abandon the proposed facilities. Our principal purposes in preparing this EA are to:

- identify and assess potential impacts on the natural and human environment that could result from implementation of the proposed action;
- assess reasonable alternatives to the proposed action that would avoid or minimize adverse effects to the environment;
- identify and recommend specific mitigation measures, as necessary, to minimize environmental impacts; and
- facilitate public involvement.

On March 14, 2018, Texas Gas filed an application with the Commission in Docket No. CP18-116-000 under section 7(b) of the Natural Gas Act (NGA) to abandon approximately 11.0 miles of the 16-inch-diameter North Lake Pagie (NLP) Pipeline and approximately 5.7 miles of the 16-inch-diameter Bay Junop – Bay Round (BJB) Pipeline, including all appurtenant and auxiliary facilities in Terrebonne Parish, Louisiana. Texas Gas' proposed project is referred to as the North Lake Pagie and Bay Junop – Bay Round Pipeline Abandonment Project (NLP-BJB Pipeline Abandonment Project).

2.0 Project Purpose and Need

Texas Gas states the purpose of the project is to abandon facilities that are no longer needed to provide interstate natural gas transportation service. The NLP and BJB Pipelines have been idled since 2012. There have been no recent transportation service requests for these pipelines and they are not expected to be used in the future.

Section 7(b) of the NGA specifies that no natural gas company shall abandon any portion of its facilities subject to the Commission's jurisdiction without the Commission first finding that the abandonment will not negatively affect the present or future public convenience and necessity. The Commission bases its decisions on technical competence, financing, rates, market

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

demand, gas supply, environmental impact, long-term feasibility, and other issues concerning a proposed project.

3.0 Proposed Facilities

Texas Gas proposes to abandon in-place approximately 11.0 miles of its 16-inch-diameter NLP Pipeline and approximately 5.7 miles of its 16-inch-diameter BJB Pipeline. Texas Gas would conduct pipeline abandonment activities at 5 locations and also remove rock, concrete, timber bulkheads, and signs along the pipeline right-of-way at 33 locations.

Project activities start at the existing Texas Gas LPP-3 Platform, continue southward to the NLP 1+1.5 Platform, Energy Properties Platform, and end at the existing BJB 1+5.4 Platform. The BJB 1+5.4 Platform and the NLP 1+1.5 Platform and all associated risers, piping, and appurtenances would be removed. Texas Gas would not remove the LPP-3 Platform or the Energy Properties Platform, as they would continue to be connected to active pipelines following the abandonment of project facilities. However, one riser, and associated piping and appurtenances at the LPP-3 Platform and two risers and associated Texas Gas-owned piping at the Energy Properties Platform would be removed. See table 2 for a description of proposed activities at each facility location. All project activities would occur within the deltaic coastal marshes of Terrebonne Parish, Louisiana (see figure 1).

4.0 Non-jurisdictional Facilities

Under section 7 of the NGA, the FERC is required to consider, as part of its decision to approve facilities under Commission jurisdiction, all factors bearing on the public convenience and necessity. Occasionally, proposed projects have associated facilities that do not come under the jurisdiction of the Commission. These "non-jurisdictional" facilities may be integral to the need for the proposed facilities. However, there are no non-jurisdictional facilities associated with this project.

5.0 Construction and Restoration Procedures

Project activities are anticipated to begin in the 4th Quarter of 2018 and last approximately 8 weeks. Texas Gas anticipates utilizing 10 to 12 support vessels and approximately 25 to 30 crew members to perform project activities. Project access would be provided by boat on existing waterways, located southwest of Dulac, Louisiana or would otherwise be accessed via airboat.

Prior to abandonment, the pipelines would be flushed of hydrocarbons and filled with filtered seawater per Louisiana Department of Natural Resources (LDNR) requirements. All materials generated during proposed activities would be captured and disposed of at a state approved onshore disposal facility. In 2012, a portion of the NLP Pipeline was damaged and isolated. At the time the damage occurred, approximately 90 feet of the pipeline was cut out, the ends were capped, and the pipeline was buried. Texas Gas would temporarily reconnect the NLP Pipeline to flush the line in accordance with state permitting requirements. Thereafter, the line would be capped, reburied, and abandoned in-place.

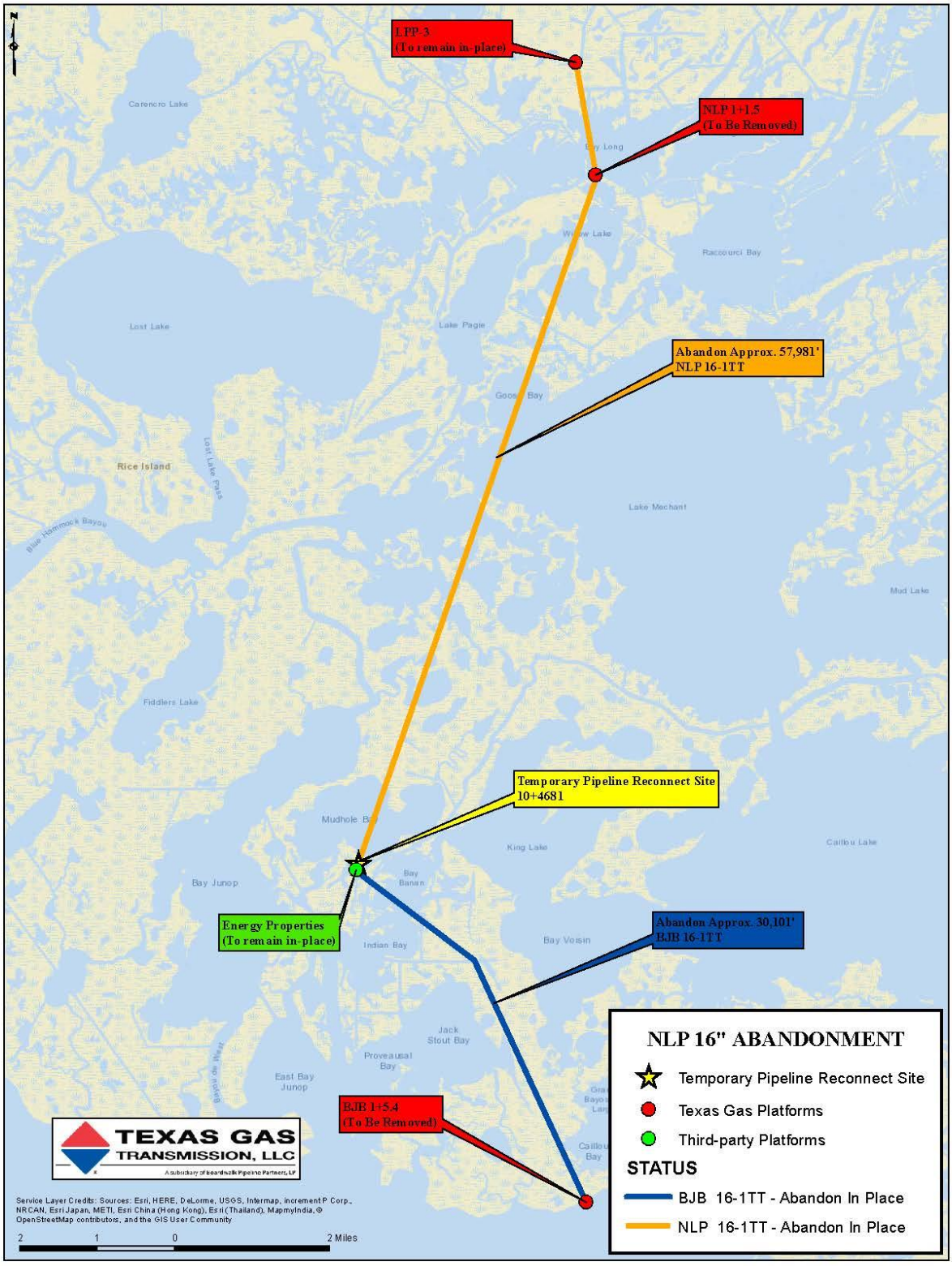

Figure 1: NLP – BJB Abandonment Project General Location Map

At each platform where the pipelines would be disconnected (BJB Pipeline departing from the BJB 1+5.4 Platform, BJB Pipeline incoming to the Energy Properties Platform, NLP Pipeline departing from the Energy Properties Platform, NLP Pipeline incoming to the NLP 1+1.5 Platform, NLP Pipeline departing from the NLP 1+1.5 Platform, and NLP Pipeline incoming to the LPP-3 Platform) the following activities would occur:

1. Follow the riser down and jet out the riser tube turn.
2. Cut out the tube turn including approximately 20 feet of pipe.
3. Install a foreman's plug in the end of the pipe.
4. Jet the end of the pipeline, and install a layer of sandbags over the pipeline to confirm 3 feet of cover.
5. Remove the riser and tube turn.

Texas Gas proposes to remove the BJB 1+5.4 Platform and NLP 1+1.5 Platform, including all associated appurtenances. Texas Gas would use a barge-mounted crane to pull out the platform pilings. If the removal of the pilings via crane is unsuccessful, Texas Gas would jet down 10 feet below the mudline to cut the piling for removal.

To remove timber and concrete bulkheads, Texas Gas would pull all whalers (horizontal steel beam), pilings, and sheets with vessel-mounted cranes/excavators. Rock bulkheads would be removed via an excavator bucket until it is flush with the existing mudline. Should Texas Gas be unable to pull the bulkhead piles, they would be removed to a point at least 5 feet below the mudline with an excavator bucket. All pipeline signs would be pulled with excavators. Should Texas Gas be unable to pull the pipeline signs, they would be removed to a point at least 5 feet below the mudline with an excavator bucket. All materials removed would be disposed of at an approved onshore disposal facility.

Texas Gas would adhere to the measures outlined in the FERC *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures). Texas Gas would deviate from section IV.A.1.e of the FERC Procedures, as all activities, including storing fuel, would be required to occur within open water. See section B.3 for additional information on this requested modification from our Procedures.

The entire project is within open water and wetlands; therefore, the FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) is not applicable for this project.

The Louisiana Department of Wildlife and Fisheries (LDWF) commented on the project on April 18, 2018. The LDWF stated it does not have information on the condition (specifically burial depth) of the pipelines as they cross navigable waterways, thus the pipelines may pose a hazard to navigation. The LDWF recommended that Texas Gas monitor the abandoned pipelines no less than annually to ensure it does not become exposed in or along the bank line of any navigable waterway, and should the pipeline become exposed Texas Gas should take measures to ensure the pipelines have appropriate cover. Texas Gas responded to this comment in its May 2, 2018 data response that it would perform baseline surveys in 2018 to identify depth of cover within navigable waterways (e.g., major canals and lake entrances). Texas Gas would perform the first follow-up survey five years following the baseline surveys to determine change in depth

of cover. Texas Gas would determine subsequent survey intervals, if necessary, by analyzing the change in depth of cover.

6.0 Land Requirements

Abandonment of the project would temporarily disturb a total of about 0.2 acre of land spread across 38 sites, the majority of which would occur within the existing permanent easement (40 feet wide for the NLP pipeline and 50 feet wide for the BJB pipeline). However, removal of the bulkheads may extend outside of the permanent right-of-way up to 75 feet in some locations. There are no permanent impacts proposed with this project. Table 1 summarizes the land requirements for the project.

Staging areas would be required for the project; however, these areas would only be used for barges, occur over water, and would not result in any land or water bottom disturbance.

Table 1: Land Requirements for the NLP-BJB Abandonment Project

Facility	Site ID	Total Land Affected During Construction (acres)
Pipeline Abandonment		
LPP-3 Platform (to remain in place)	Site 1	0.005
NLP 1+1.5 Platform (to be removed)	Site 6	0.011
NLP Pipeline – Temporary Pipeline Reconnect Site (90 feet)	Site 38	0.010
Energy Properties Platform (to remain in place)	Site 26	0.010
BJB 1+5.4 Platform (to be removed)	Site 37	0.008
Subtotal		*0.044*
Bulkheads and Sign Removal		
Sign and Concrete Bulkhead	Site 2	0.003[a]
Sign and Concrete Bulkhead	Site 3	0.003[a]
Wood Bulkhead	Site 4	0.001
Sign	Site 5	<0.001[a]
Concrete Bulkhead	Site 7	0.007
Concrete Bulkhead	Site 8	0.003
Concrete Bulkhead	Site 9	0.003
Concrete Bulkhead	Site 10	0.003
Concrete Bulkhead	Site 11	0.005
Concrete Bulkhead	Site 12	0.006
Concrete Bulkhead	Site 13	0.003
Rock Bulkhead	Site 14	0.006
Sign	Site 15	<0.001[a]

Table 1: Land Requirements for the NLP-BJB Abandonment Project		
Facility	**Site ID**	**Total Land Affected During Construction (acres)**
Concrete Bulkhead	Site 16	0.003
Concrete Bulkhead	Site 17	0.003
Sign	Site 18	<0.001 [a]
Concrete Bulkhead	Site 19	0.003
Concrete Bulkhead	Site 20	0.003
Concrete Bulkhead	Site 21	0.003
Concrete Bulkhead	Site 22	0.003
Concrete Bulkhead	Site 23	0.003
Concrete Bulkhead	Site 24	0.003
Concrete Bulkhead	Site 25	0.003
Concrete Bulkhead	Site 27	0.003
Sign	Site 28	<0.001 [a]
Sign	Site 29	<0.001 [a]
Concrete Bulkhead	Site 30	0.003
Concrete Bulkhead	Site 31	0.010
Concrete Bulkhead	Site 32	0.003
Concrete Bulkhead	Site 33	0.015
Concrete Bulkhead	Site 34	0.003
Concrete Bulkhead	Site 35	0.003
Sign	Site 36	<0.001 [a]
Subtotal		*0.112*
Access and Staging		
Access Paths	N/A	0.000[b]
Staging Areas	N/A	0.000[c]
Subtotal		*0.000*
Project Total		**0.156**

N/A = Not Applicable
[a] Removal of each pipeline sign would temporarily disturb 8 square feet (0.0002 acre) of water bottoms.
[b] Access paths would be on water and accessed via barge or airboat with sufficient depth to prevent scour; therefore, no disturbance is anticipated.
[c] All staging areas would be on barges; therefore, the only disturbance would be associated with the 6- to 18-inch-diameter spud that would hold the barge in place.

7.0 Permits and Approvals

Texas Gas would need to obtain all necessary permits, licenses, clearances, and approvals related to abandonment of the proposed project. Table 2 lists the federal, state, and local permits and approvals Texas Gas would obtain for this project. Texas Gas would be responsible for

obtaining and abiding by all permits and approvals required for construction and operation of the project regardless if they appear in this table.

Table 2: Permits and Approvals for the NLP-BJB Abandonment Project		
Administrating Agency	**Permit/Approval/Review**	**Status**
Federal		
Federal Energy Regulatory Commission	Certificate of Public Convenience and Necessity - Section 7(b) of the NGA	Application submitted in March 2018
National Oceanic and Atmospheric Administration, National Marine Fisheries Service	Section 7 of the Endangered Species Act, Threatened and Endangered Species Consultation	Request for concurrence submitted March 5, 2018. Concurrence received May 7, 2018.
	Essential Fish Habitat Consultation	Request for concurrence of no significant adverse effects on Essential Fish Habitat submitted March 5, 2018. Concurrence received April 16, 2018.
U.S. Fish and Wildlife Service	Section 7 of the Endangered Species Act, Threatened and Endangered Species Consultation Migratory Bird Treaty Act Consultation	Request for concurrence submitted March 5, 2018
U.S. Army Corps of Engineers	Clean Water Act, Section 404 Permit	Joint Permit Application submitted March 2, 2018
State		
Louisiana Office of Coastal Management	Coastal Use Permit	Joint Permit Application submitted March 2, 2018. Consistency Determination received April 11, 2018.
Louisiana Office of Cultural Development	Section 106 of the National Historic Preservation Act Consultation	Concurrence issued March 7, 2018
Louisiana Department of Wildlife and Fisheries	State Threatened and Endangered Species Consultation	Request for comment submitted March 5, 2018

B. ENVIRONMENTAL ANALYSIS

1.0 Geology

Subsurface activities are limited to localized excavation areas in open water and marsh for pipe capping, platform removal, and removal of bulkheads and signs. No impacts on or from geological resources are expected as a result of this project.

2.0 Soils

The project is in Terrebonne Parish, Louisiana and covers various soil map units and areas mapped by the Natural Resources Conservation Service as "Water." Historically, bulkheads were placed along the shoreline of each soil type to reduce the rate of erosion. However, due to rising sea levels, subsidence, hurricanes, and other natural processes, the majority of the shorelines where the bulkheads were placed are now submerged. Therefore, the majority of project activities would occur within open water with unvegetated soft bottoms (mud) and hard bottoms (rock), with 12 sites within estuarine emergent marsh.

All project activities would be performed from the water and no tracked equipment would be utilized. Texas Gas would use shallow draft vessels and airboats to prevent scour and minimize impacts from vessel access. Disturbance at each of the 38 project sites would be minor and primarily contained to the footprint of the bulkheads, signs, and platforms. Due to the short-term disturbances in localized, previously disturbed areas, we conclude project activities would have only minor impacts on soils. In addition, Texas Gas would restore all disturbed areas in accordance with our Procedures following the completion of project activities.

No sources of potential soil contamination have been identified within 0.5 mile of the project area. The closest source of potential soil contamination is the Bay Junop Facility, a crude petroleum and natural gas facility, approximately 0.76 mile northeast of Site 25. This facility operates under the National Pollutant Discharge Elimination System permit program as a point source pollution discharge facility. Due to the distance, the project is not anticipated to disturb this facility or any potential contamination.

During construction, contamination from accidental spills or leaks of fuels, lubricants, and coolant from construction equipment could adversely impact soils. Texas Gas would implement its *Spill Prevention, Containment, and Countermeasures* (SPCC) *Plan* that specifies cleanup procedures in the event of soil contamination from spills or leaks of fuel, lubricants, coolants, or solvents. It is also possible that localized pre-existing evidence of contamination may be encountered during construction of the project. As such, Texas Gas would adhere to its *Plan for the Unanticipated Discovery of Contaminated Environmental Media*. This plan identifies the steps Texas Gas would follow in the event that contaminated sediments or soils, as identified by evidence of subsoil discoloration, odor, sheen, or other such indicators, are encountered during construction. Given Texas Gas' proposed construction and mitigation measures, including the FERC Procedures and Texas Gas' SPCC Plan, we conclude that impacts on soils would be temporary and not significant.

3.0 Water Resources

The proposed project area is within the deltaic coastal marshes of southern Louisiana beginning approximately 4.3 miles west of Lake De Cade and extends south across Lake Mechant towards the Gulf of Mexico, between Bayou Charbon and Fish Bayou. The project area is characterized by open water consisting of pipeline canals and marshes with depths ranging from less than 1 foot in marsh areas to more than 20 feet in pipeline canals. A total of 0.16 acre of soft and hard bottoms of waterbodies and estuarine emergent marsh would be affected by project activities. The project would not affect groundwater resources.

Project activities could result in increased turbidity and sedimentation throughout the water column. Project activities that may contribute to increased turbidity include removal of platforms, signs, and bulkheads via pulling, jetting, or through use of excavators. Jetting and mechanical excavation techniques result in greater disturbance of sediments, and thus greater turbidity, when compared to pulling because sediments are physically moved from the area. Minor disturbances would occur when a structure is removed by pulling, as sediments fill in the void left by the removed structure.

Project activities would be localized and of short duration; therefore, impacts are anticipated to be minor and temporary. Water quality would quickly return to pre-construction conditions following the completion of project activities. The impact of increased turbidity would depend on several factors including the ambient turbidity in the project area at the time project activities are conducted, which is influenced by several factors such as wind speed and direction, sediment type, precipitation, coastal erosion, and anthropogenic activities such as oyster dredging and boating. The deltaic coastal marshes of southern Louisiana are characterized by naturally turbid waters as a result of high winds, storm events, and tides which cause the clay sediments to easily become suspended, resulting in the muddy waters characteristic of the region. In addition, frequent dredging for oyster leases and commercial and recreational boaters in the area contribute to the high turbidity.

Sediment characteristics are also an important factor in assessing the extent to which turbidity would occur. The project area is characterized by clays, with some sand. Clays are fine grained, cohesive sediments that tend to stay suspended in the water column longer than non-cohesive, large-grained sediments such as sands, which quickly resettle.

The exact distance that turbidity plumes created during project activities would travel are not known. Based on guidance developed by the LDNR for assessing impacts on oyster leases, turbidity plumes could extend anywhere from 150 feet to 1,500 feet from the area of disturbance depending on sediment characteristics. LDNR estimates that large-grained sediments, such as sand would resettle within 150 feet; however, finer-grained clays and silts may stay suspended for up to 500 feet before settling or dissipating to ambient conditions. LDNR also estimates that the maximum distance that suspended sediments could be reasonably expected to travel is 1,500 feet. Based on the localized and minor extent of the project activities, turbidity would not likely extend beyond 500 feet. Suspended sediment caused by project activities would likely either settle within the immediate area of disturbance or be diluted to ambient conditions within 500 feet of the disturbance. Due to the minor amount and short duration of disturbance proposed for the project, as well as the naturally turbid waters typical of the region, we conclude that turbidity

associated with the project would not result in a significant long-term change in ambient conditions.

In order to minimize impacts on coastal resources, Texas Gas would minimize the jetting required to remove the platforms and other structures and use shallow draft barges with small mounted excavators/cranes to pull and remove bulkheads and signs, where feasible. Furthermore, access routes were selected to avoid dredging or prop washing. Therefore, we conclude impacts on water bottoms would be minor and temporary.

Texas Gas does not plan on refueling on the water. However, if refueling on the water is necessary, all refueling of equipment would take place using U.S. Coast Guard-approved fuel hoses. Refueling construction equipment and heavy machinery during construction on the water could result in a spill. Hazardous materials such as fuels, lubricants, or solvents could adversely impact surface waters if large volumes are released. All permanently mounted equipment on the vessels would have drip pans under the fuel fill and spill kits would be readily available should a spill occur. In the event of a spill, Texas Gas would implement its SPCC Plan.

Texas Gas requested a modification from section IV.A.1.e of our Procedures, as all activities, including storing fuel would occur within open water. Given the location of the project and Texas Gas' commitment to minimize/mitigate any potential impacts, we conclude Texas Gas has provided adequate justification for this modification to our Procedures.

Impaired Waterbodies

Under Section 303(d) of the Clean Water Act (CWA), states are required to identify waterbodies that are not attaining their designated use(s) and develop total maximum daily loads, which represent the maximum amount of a given pollutant that a waterbody can assimilate and still meet its designated use(s). Project activities at the BJB 1+5.4 Platform and the associated access route are in the Terrebonne Basin Coastal Bays and Gulf Waters to the State 3 Mile Limit which is 303(d) listed for dissolved oxygen and mercury in fish tissue. This waterbody is not meeting its designated use for Fish and Wildlife Propagation. In addition, the access route utilized to access the Energy Properties Platform (Site 26) is in the Bayou Du Large – North of St. Andrews Mission to Caillou Bay which is 303(d) listed for non-native aquatic plants.

The only potential for the project to further contribute to the impairment of waterbodies that are 303(d) listed for insufficient levels of dissolved oxygen would be through improper disposal of wastewater and decreased photosynthesis due to increased turbidity in the water column. Wastewater would be managed through self-contained U.S. Coast Guard-approved wastewater treatment systems and would be discharged in accordance with applicable permits issued for the project. Because turbidity would only linger for a short period of time, photosynthesis would only be reduced for a brief period of time which should not cause dissolved oxygen levels to increase significantly. In addition, project activities are not anticipated to contribute to the further impairment of waterbodies that are impaired for non-native aquatic plants. All vessels and equipment used for the project are anticipated to originate from the region and are not anticipated to further impair Bayou du Large – North of St. Andrews Mission to Caillou Bay through introduction or further spread of non-native aquatic plant

species. Equipment that is terrestrially transported to the project launch site would be cleaned via freshwater on land prior to use on the project. Vessels that are used for the project are not anticipated to require ballast water discharges, which can be an additional vector for non-native species spread or introduction. Following the completion of project activities, it is anticipated that equipment would continue to be used in the project region or would be cleaned prior to use in a different region. Through the implementation of the measures outlined above, including proper wastewater management and equipment cleaning, the project is not anticipated to contribute to additional impairment of the 303(d) listed waters.

Fisheries

Fish species common in this area include speckled trout, gulf flounder, striped mullet, and Atlantic croaker, as well as multiple types of cobia, mackerel, and drum. Coastal Louisiana is popular for commercial and recreational fisheries, including drum species, striped mullet, eastern oysters, blue crab, white shrimp, and brown shrimp. No adverse impacts on fisheries are anticipated due to the fish species being highly mobile and the minor, temporary, and localized nature of the project activities.

Oyster Leases

Oyster leases are present within the project area; therefore, Texas Gas would conduct a Biological Oyster Assessment for the project, as required by the LDWF. The results of the Biological Oyster Assessment and any related correspondence with the LDWF would be filed with FERC upon receipt. The purpose of this assessment is to evaluate the productivity of oyster leases in the area to assist in the determination of appropriate compensation for oyster lease holders. For the purposes of negotiations with oyster lease holders, LDWF requires that oyster lease holders within 1,500 feet of the project area be notified of project activities. Texas Gas would coordinate with any potentially affected lease holders as necessary to ensure they are compensated for any short-term impacts resulting from project activities.

In general, impacts on oyster leases are not anticipated to extend beyond 500 feet from project activities (expected distance that turbidity would dissipate). The project activities are not anticipated to increase turbidity above what typically occurs during high wind events, normal oyster dredging operations, and recreational and commercial boating activities. The minimal amount of sediment that could be deposited as a result of project activities would have a negligible effect on oyster leases. Impacts would be minimized through limiting the workspace to the minimum amount necessary to safely and efficiently perform the project activities. Further, Texas Gas would utilize shallow draft vessels and air boats to prevent disturbing the water bottom and all structures that are removed from the water column would be cut at least 5 feet below the waterbody bed to eliminate any impacts on oyster dredging operations. Due to the short duration and localized extent of project activities, impacts on oyster leases would be negligible and lease holders would be compensated for potential impacts.

Essential Fish Habitat

An amendment to Magnuson-Stevens Act of 1966 strengthened the ability of the National Marine Fisheries Service (NMFS) and associated councils to protect and conserve the habitat of certain marine, estuarine, and anadromous finfish, mollusks, and crustaceans. These specific habitats have been deemed as Essential Fish Habitat (EFH). EFH can be broadly defined as "those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity." Texas Gas used the National Oceanic and Atmospheric Administration's EFH mapper to identify areas of EFH within the project area. The mapper indicates that the entire coast of Louisiana is EFH for many species, including various sharks, red drum, various reef fish, and shrimp.

The project is in areas considered EFH for several species and life stages that use estuarine soft bottom, estuarine hard bottom, estuarine emergent marsh, estuarine mangroves, and estuarine pelagic habitats. Texas Gas did not identify any NMFS designated Habitat Areas of Particular Concern or EFH Areas Protected from fishing in the project area.

Impacts on EFH as a result of project activities would be short-term and negligible. Following the completion of project activities, any disturbed sediment would settle or dissipate and the area would continue to serve as EFH. Impacts on the water column would similarly be short-term and negligible. Boat traffic for the project would not likely affect EFH. Access routes for the project area have been assessed and only shallow draft vessels with sufficient clearance from the water bottom and/or air boats would be used in order to prevent prop washing. Because project activities would not result in a change in habitat type, EFH species and/or other species, including displaced invertebrates, would be able to return to the area shortly following the completion of project activities. Due to these factors and because the footprint of the project is minor, we conclude that effects on EFH would be indiscernible and the project would not adversely impact EFH.

Texas Gas submitted a letter to NMFS describing the proposed project and identifying potential impacts on EFH on March 5, 2018. In an email dated April 16, 2018, NMFS concurred that impacts on EFH would be temporary and recommended that the area be assessed following a one-year growing season to determine if any mitigation is required (NMFS 2018). This condition is consistent with the Coastal Use Permit and Texas Gas would adhere to this recommendation.

Wetlands

Based on field surveys conducted in 2017, 12 sites proposed for construction (a total of 0.06 acre) are characterized by estuarine emergent marsh. Vegetation in the project area associated with estuarine emergent marsh consists of smooth cordgrass, black mangrove, saltgrass, Jesuit's bark, giant cutgrass, dollarweed, and saltbush. Soil characteristics could be altered during excavation activities due to the inadvertent mixing of topsoil and subsoils. In accordance with our Procedures, due to the saturated/inundated conditions of estuarine emergent marsh in the project area, topsoil would not be conserved (segregated) to prevent mixing of the soil layers. These impacts resulting from project excavation are expected to be highly localized.

In addition, all disturbed areas would be allowed to revegetate and revert to pre-existing conditions following completion of project activities.

Based on field surveys, black mangroves are present at Sites 26, 29, and 34. Impacts within these three sites would total 0.01 acre or approximately 610 square feet. There is potential for mangroves to occur in the areas that would be disturbed by project activities. All wetland impacts, including black mangroves would be short-term and expected to restore within 1 (for emergent vegetation) to 10 (for mangroves) years; therefore, compensatory mitigation is not anticipated to be required. Any required mitigation would be determined by the LDNR Office of Coastal Management (OCM) in accordance with the Coastal Use Permit and the U.S. Army Corps of Engineers (USACE).

Inadvertent spills of fluids used during project activities, such as fuels, lubricants, and solvents, could contaminate wetland soils and vegetation. As discussed, all refueling of equipment would take place using U.S. Coast Guard-approved fuel hoses. Further, all permanently mounted equipment on the vessels have drip pans under the fuel fill and spill kits are readily available should a spill occur. In the event of a spill, Texas Gas would implement measures outlined in the Project's SPCC Plan and the FERC Procedures to avoid impacts from hazardous materials on wetlands. Given the limited disturbance and all wetlands impacted by construction would be expected to revegetate, we conclude that impacts on wetlands would not be significant.

4.0 Wildlife

The majority of project areas are unvegetated characterized by soft bottom (mud) and hard bottom (rock) substrates, except for 12 sites which occur within vegetated estuarine emergent marsh (described above). Wildlife associated with existing pipeline easements in the deltaic coastal marshes of southern Louisiana include fish species discussed above, muskrat, nutria, various turtle species, and bottlenose dolphin. In addition to aquatic wildlife, birds such as brown pelican, various gulls, terns, egrets, herons, and ibises also occur in the project vicinity.

Potential impacts on wildlife and the surrounding aquatic environment include increases in turbidity and disturbance of the water bottom (benthic habitat). Large, more mobile invertebrates such as crabs would likely be temporarily displaced during project activities. Direct mortality of less mobile invertebrates such as mollusks could occur as a result of benthic floor disturbance.

Vessels that utilize anchors can also impact water bottoms and thus benthic habitats. The location in which an anchor drops, and any sweeping of the anchor cable that occurs as the vessel moves, could disturb the water bottom. Texas Gas does not anticipate utilizing anchor vessels for the proposed project. Rather, crews would use air boats and barges equipped with spuds (a rigid pole that pins the vessel in place). The footprint of a spud ranges from 6 inches to 18 inches in diameter. Impacts on aquatic resources from spuds would be similar to that described for other project activities that would result in a disturbance of water bottoms, although on a smaller scale.

Wildlife in the area may also be affected by construction noise. Construction activities proposed for the project including use of vessels, excavators, and cranes would produce low-frequency noise. While these low frequency noise sources can result in behavioral changes, they are not anticipated to cause physical injury or mortality typically associated with high-intensity sound such as pile driving and large-scale dredging operations, which are not proposed.

Due to the minor and localized nature of the project activities, we conclude impacts on wildlife would be negligible. Further, all impacts would be temporary to short-term, with the disturbed area quickly returning to pre-construction conditions following the completion of project activities.

Migratory Birds

On March 30, 2011, the FERC and the U.S. Fish and Wildlife Service (USFWS) entered into a Memorandum of Understanding that focuses on migratory birds and strengthening conservation through enhanced collaboration between the agencies. The proposed project is within USFWS designated Bird Conservation Region (BCR) 37 – Gulf Coastal Prairie. The list of USFWS Birds of Conservation Concern (BCC) 2008 was used to identify BCCs with potential to occur in the project area. Of the 43 BCCs species listed for BCR 37, four do not have ranges that extend into the project area, 24 species only occur in the project area as occasional migrants or during the winter, eight occur in the project area year-round, and the remaining seven have breeding ranges that extend into the project area. The project is within coastal deltaic marsh and no tree clearing would occur for project activities. In addition, Texas Gas anticipates commencing project activities in the 4th Quarter 2018, outside of the primary nesting season for migratory birds.

In correspondence dated January 3, 2018, Texas Gas requested occurrence data for rookeries of colonial nesting birds from the Louisiana Natural Heritage Program (LNHP). The data provided by LNHP on January 29, 2018, indicate that the closest rookery is about 3 miles north of the project area. Nesting colonies may move each year and data may not represent the current locations of colonies. In accordance with LNHP guidance, Texas Gas has committed to implementing the following measures to minimize potential impacts on colonial nesting birds as a result of the project activities, if necessary:

- For colonies containing nesting wading birds (i.e. herons, egrets, night-herons, ibises, roseate spoonbills, anhingas, and/or cormorants), all project activity occurring within 300 meters of an active nesting colony should be restricted to the non-nesting period (i.e. September 1 through February 15).
- For colonies containing nesting gulls, terns, and/or black skimmers, all project activity occurring within 400 meters (700 meters for brown pelicans) of an active nesting colony should be restricted to the non-nesting period (i.e. September 1 through February 15).

Given the limited disturbance and Texas Gas' commitment to these mitigation measures to minimize impacts on colonial nesting birds as a result of project activities, we conclude that the project would have minimal impacts on transient migratory and colonial nesting birds.

Threatened and Endangered Species

Special status species are those species for which federal or state agencies afford 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) of 1973. Under Section 7 of the ESA, federal agencies are required to ensure that any actions authorized, funded, or carried out by the agency would not jeopardize the continued existence of a federally listed or candidate threatened or endangered species, or result in the destruction or adverse modification of designated critical habitat of a federally listed or candidate species. As the federal lead agency authorizing the project, FERC is responsible for consulting with the USFWS and NMFS to determine whether federally listed threatened or endangered species or designated critical habitat are found in the vicinity of the project, and determining the proposed action's potential effects on those species or critical habitats. In accordance with the Commission's regulations contained in 18 CFR 380.13(b), Texas Gas was designated as the Commission's non-federal representative for purposes of informal consultation with the USFWS and NMFS.

Texas Gas used the USFWS and NMFS websites to obtain information on federally listed threatened and endangered species, candidate species considered for listing, and critical habitat potentially occurring within the project area. There are nine federally listed species that could potentially inhabit the project area, including one marine mammal, two birds, one fish, and five sea turtles. Listed species include West Indian manatee (*Trichechus manatus*), piping plover (*Charadrius melodus*), rufa red knot (*Calidris canutus rufa*), gulf sturgeon (*Acipenser oxyrinchus desotoi*), green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricate*), Kemp's ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*), and loggerhead sea turtle (*Caretta caretta*).

Texas Gas also used LDWF resources to identify state-listed threatened and endangered species in the project area. There are six state-listed species in Terrebonne Parish, Louisiana, including one marine mammal, four birds, and one fish. Listed species include West Indian manatee, piping plover, peregrine falcon (*Falco peregrinus*), bald eagle (*Haliaeetus leucocephalus*), brown pelican (*Pelecanus occidentalis*), and pallid sturgeon (*Scaphirhynchus albus*).

Species information, habitat description, impact assessment, and determination of effect for each federally and state-listed species are provided in appendix A. To minimize impacts on threatened and endangered species potentially occurring within the project area, Texas Gas would ensure that all vessel operators implement the *Wildlife and Vessel Strike Avoidance Plan*, which was developed based on recommendations from the USFWS as well as published NMFS guidance.

Species under USFWS Jurisdiction

There is potential for the West Indian manatee to occur in the project area. In accordance with USFWS recommendations, Texas Gas would implement the following measures to minimize potential impacts on West Indian manatees as a result of project activities.

- All work, equipment, and vessel operation would cease if a manatee is spotted within a 50-foot radius (buffer zone) of the active work area. Once the manatee has left the buffer zone on its own accord (manatees must not be herded or harassed into leaving), or after 30 minutes have passed without additional sightings of manatee(s) in the buffer zone, in-water work would resume under careful observation for manatee(s).

- If a manatee(s) is sighted in or near the project area, all vessels associated with the project would operate at "no wake/idle" speeds within the construction area and at all times while in waters where the draft of the vessel provides less than a four foot clearance from the bottom. Vessels would follow routes of deep water whenever possible.

- If used, siltation or turbidity barriers would be properly secured, made of material in which manatees cannot become entangled, and be monitored to avoid manatee entrapment or impeding their movement.

- Texas Gas would post temporary signs concerning manatees prior to and during all in-water project activities. Each vessel involved in construction activities would display at the vessel control station or in a prominent location, visible to all employees operating the vessel, a temporary sign at least 8½" X 11" reading language similar to the following: "CAUTION BOATERS: MANATEE AREA/ IDLE SPEED IS REQUIRED IN CONSTRUCTION AREA AND WHERE THERE IS LESS THAN FOUR FOOT BOTTOM CLEARANCE WHEN MANATEE IS PRESENT." A second temporary sign measuring 8½" X 11" would be posted at a location prominently visible to all personnel engaged in water-related activities and would include language similar to the following: "CAUTION: MANATEE AREA/ EQUPIMENT MUST BE SHUTDOWN IMMEDIATELY IF A MANATEE COMES WITHIN 50 FEET OF OPERATION".

- Texas Gas would report collisions with, injury to, or sightings of manatees to the USFWS Louisiana Ecological Services Office (337/291-3100) and the Louisiana Department of Wildlife and Fisheries, Natural Heritage Program (225/765-2821). Texas Gas would provide the nature of the call (i.e., report of an incident, manatee sightings, etc.); time of incident/sighting; and the approximate location, including the latitude and longitude coordinates, if possible.

The project would utilize approximately 11 vessels consisting of two tug boats, one U.S. Coast Guard-approved tank barge, one spudded crane barge, one spudded material barge, three field boats, one outboard equipped airboat, one shallow draft deck boat, and one quarters barge. Most work vessels are anticipated to make one trip to the project area and one trip returning from the project area. Texas Gas would operate all vessels, with the exception of airboats, at "no wake/idle" speeds if a manatee is sighted in the project area and while in water depths where the draft of the vessel provides less than 4 feet of clearance from the water bottom. However, airboats are necessary to maneuver in areas of shallow water and cannot be operated at "no

wake/idle" speeds. Manatee occurrences in the shallow waters in which airboats would be operating are rare. Further, airboats operate with extremely shallow drafts with no propellers or other moving parts extending into the water column that are more likely to injure manatees. Therefore, airboats utilized for the project are not anticipated to strike or injure manatees. Implementation of the measures outlined above, would minimize potential impacts on the West Indian manatee. Therefore, we conclude that, due to the minor, short-term, and localized disturbance associated with the project, as well as implementation of USFWS-recommended measures, the project *is not likely to adversely* affect the West Indian Manatee.

In addition to the West Indian manatee, suitable habitat for the rufa red knot and piping plover is also present in the project area. Due to the mobility of these species, the limited disturbance area, and the likelihood that only transient birds would be in the project area during construction, we conclude that the project *is not likely to adversely affect* these species.

Texas Gas submitted a request for concurrence with the determination that the project is not likely to adversely affect threatened and endangered species to the USFWS on March 5, 2018. Concurrence with these determinations was issued as a stamp of approval by the USFWS on March 12, 2018 (USFWS 2018).

Species under NMFS Jurisdiction

Threatened and endangered species under NMFS jurisdiction that could occur in the project area are the hawksbill sea turtle, Kemp's Ridley sea turtle, leatherback sea turtle, loggerhead sea turtle, green sea turtle, and gulf sturgeon. The gulf sturgeon does not occur west of the Mississippi River, and therefore, would not be affected by the project. Only foraging adult sea turtles are anticipated to occur, as no nesting habitat is present within the vicinity of the project. Based on field surveys, habitat present in the project area consists of soft (mud) bottom habitat in open water. No submerged aquatic vegetation or marsh would be affected by project activities. Sea turtles are mobile and would most likely leave the area during project activities.

Increases in turbidity associated with project activities could cause sea turtles to relocate to nearby suitable habitat or avoid the project area. Texas Gas would ensure that all project personnel are trained in the identification of threatened and endangered species potentially occurring in the project area, including sea turtles. In accordance with the NMFS' *Vessel Strike Avoidance Measures and Reporting for Mariners* (2008), vessel operators and crews would maintain vigilant watch for sea turtles. If sea turtles are sighted, vessel operators would attempt to maintain at least 50 yards distance from the sea turtle. In addition, Texas Gas would adhere to the NMFS (2006) *Sea Turtle and Smalltooth Sawfish Construction Conditions* to minimize impacts on sea turtles in the area.

Texas Gas would also operate vessels at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than 4 feet of clearance from the water bottom, where practicable. However, airboats are necessary to maneuver in areas of shallow water and cannot be operated at "no wake/idle" speeds. Based on correspondence with NMFS, sea turtle occurrence in the shallow waters in which airboats would operate are rare. Further, airboats operate with extremely shallow drafts with no propellers or

other moving parts extending into the water column that could strike or injure sea turtles. Therefore, airboats utilized on the project are not anticipated to injure sea turtles. No turbidity curtains or other materials in which sea turtles could potentially become entangled are proposed for use on the project.

Indirect effects on sea turtles could include reduction of prey species abundance. The primary prey species for sea turtles include aquatic plants/algae, jellyfish, mollusks, crustaceans, and fish. Many species of sea turtles primarily feed along reefs or within submerged aquatic vegetation, which are not present in the project area. Further, jellyfish and fish are generally mobile and expected to temporarily relocate from the project area during pipeline abandonment and removal activities. Direct mortality of less mobile species, such as benthic invertebrates, could occur as a result of project activities. The entire project would be completed in approximately eight weeks, but the duration of disturbance would be much less at each location. Due to the small and localized areas of disturbance associated with project activities, as well as the short duration of disturbance, significant impacts on sea turtles or other marine species as a result of prey abundance would not likely occur.

Per the NMFS Endangered Species Act Section 7 Effects Determination Guidance (2014), if habitat is present, but it is predicted that individuals would avoid the area due to construction activities, then a "may affect, not likely to adversely affect" determination is appropriate. Based on this guidance as well as the mobility of sea turtles and the likelihood that they would temporarily avoid the area during project activities, we conclude that the project *is not likely to adversely affec*t threatened and endangered turtles.

As our non-federal representative for the purpose of consultation under Section 7 of the ESA, Texas Gas submitted a letter to NMFS on March 5, 2018 requesting concurrence with the determination that the project would not likely adversely affect hawksbill sea turtle, Kemp's Ridley sea turtle, leatherback sea turtle, green sea turtle, and loggerhead sea turtle. On April 16, 2018, NMFS indicated that the project is under final review. Therefore, because consultation is not yet complete, **we recommend that:**

- **Texas Gas should not begin construction activities <u>until</u>:**
  - **a. the staff completes ESA consultation with the NMFS; and**
  - **b. Texas Gas has received written notification from the Director of the Office of Energy Projects (OEP) that construction or use of mitigation may begin.**

State-listed Species

There are six state-listed threatened and endangered species, four of which are not otherwise federally listed in the project area, including the bald eagle, brown pelican, peregrine falcon, and pallid sturgeon. Suitable habitat for the pallid sturgeon and bald eagle is not present in the project area; therefore, the project would have no impact on these species. Potentially suitable habitat is present for the peregrine falcon and brown pelican; however, these species are highly mobile and are anticipated to avoid the area during project activities. Therefore, the project would not significantly impact these species. Texas Gas submitted a letter to LDWF

requesting concurrence with these determinations on March 5, 2018. LDWF provided comments regarding the project as part of the Coastal Use Permit process, one of which stated no impacts on rare, threatened or endangered species, or critical habitats are anticipated from the proposed project. All LDWF comments are addressed as conditions in the Coastal Use Permit. Texas Gas would adhere to the recommendations from LDWF documented in the Coastal Use Permit filed on May 2, 2018.

5.0 Land Use, Recreation, and Visual Resources

The proposed project is entirely within the deltaic coastal marshes of southern Louisiana. No changes in land use would occur as a result of the project; however, the area surrounding the BJB 1+5.4 Platform and the NLP 1+1.5 Platform and the bulkhead and sign removal sites would be allowed to revert to open water and/or estuarine emergent marsh after their removal.

There are no known businesses or residences within at least 1 mile of the project aside from other oil and gas gathering and transmission facilities. The project is not within 0.25 mile of any National Park Service units, Indian reservations, National Forests, National Wildlife Refuges, National Wilderness Areas, or registered National Landmarks. Additionally, the project is not within 0.25 mile of any state parks, forests, or wildlife management areas. The project would not impact any natural, recreational, or scenic areas.

The project is within the Louisiana Coastal Zone. Texas Gas submitted an application for a Coastal Use Permit for the project on March 2, 2018, and received its coastal zone consistency determination under the Coastal Zone Consistency Act on April 11, 2018 from the Louisiana OCM.

The project does not include new aboveground facilities; therefore, the project would not create any new visual impacts. However, Texas Gas would remove two platforms, which would return the project area more to its natural visual landscape. Therefore, we conclude that the project would not create any significant impacts on land use, recreation, or visual resources.

6.0 Cultural Resources

Texas Gas contacted the Louisiana State Historic Preservation Office (SHPO) regarding the project, providing a project description, mapping, and a summary of background research. The research determined that there were no archaeological sites mapped within or adjacent to the project area. On March 7, 2018, the SHPO indicated no known historic properties would be affected by the project. In addition, Texas Gas provided a "Blanket Environmental Clearance" with the SHPO, specifying certain minor construction activities not requiring review, to be used as applicable. We agree with the SHPO and have determined the project would not affect historic properties.

Texas Gas contacted the following Native American tribes regarding the project: Alabama-Coushatta Tribe of Texas; Alabama Quassarte Tribal Town; Apache Tribe of Oklahoma; Chitimacha Tribe of Louisiana; Choctaw Nation of Oklahoma; Coushatta Tribe of Louisiana; Jena Band of Choctaw Indians; Kialegee Tribal Town; Mississippi Band of Choctaw

Indians; Muscogee (Creek) Nation; Poarch Band of Creek Indians; Seminole Nation of Oklahoma; Thlopthlocco Tribal Town; and Tunica-Biloxi Indian Tribe of Louisiana. In a February 27, 2018 email, the Muscogee (Creek) Nation indicated that the project was not within the Nation's area of interest. No other responses have been received to date.

Texas Gas provided a plan to address the unanticipated discovery of historic properties and human remains during construction. We requested minor revisions to the plan. Texas Gas provided a revised plan which we find acceptable.

7.0 Air Quality, Noise, and Polychlorinated Biphenyl Contamination

Air Quality

The term air quality refers to relative concentrations of pollutants in the ambient air. Project construction would impact air quality in the project area during the duration of construction activities. However, the project would not result in any new sources of operational air emissions and would therefore not impact air quality during project operation.

Existing Environment

Ambient air quality is protected by the Clean Air Act (CAA) of 1970, as amended in 1977 and 1990. The EPA oversees the implementation of the CAA and establishes National Ambient Air Quality Standards (NAAQS) to protect human health and welfare.[2] NAAQS have been developed for seven "criteria air pollutants", including nitrogen dioxide, carbon monoxide (CO), ozone, sulfur dioxide (SO_2), particulate matter less than or equal to 2.5 microns in aerodynamic diameter ($PM_{2.5}$), particulate matter less than or equal to 10 microns in aerodynamic diameter (PM_{10}), and lead, and include levels for short-term (acute) and long-term (chronic) exposures. The NAAQS include two standards, primary and secondary. Primary standards establish limits that are considered to be protective of human health and welfare, including sensitive populations such as children, the elderly, and asthmatics. Secondary standards set limits to protect public welfare, including protection against reduced visibility and damage to crops, vegetation, animals, and buildings (EPA 2017). Additional pollutants, such as volatile organic compounds (VOC) and hazardous air pollutants (HAP), are emitted during fossil fuel combustion. These pollutants are regulated through various components of the CAA that are discussed further below. At the state level, the Louisiana Department of Environmental Quality has adopted the NAAQs, as promulgated by the EPA, and does not have any additional standards.

The EPA, and state and local agencies have established a network of ambient air quality monitoring stations to measure concentrations of criteria pollutants across the U.S. The data are then averaged over a specific time period and used by regulatory agencies to determine compliance with the NAAQS and to determine if an area is in attainment (criteria pollutant concentrations are below the NAAQS), nonattainment (criteria pollutant concentrations exceed the NAAQS) or maintenance (area was formerly nonattainment and is currently in attainment).

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

The project area is within Terrebonne Parish, Louisiana, which is designated as attainment or unclassified, and thus treated as attainment, for all criteria pollutants.

Greenhouse gases (GHG) occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. Carbon dioxide, methane, and nitrous oxide are GHGs that are emitted during fossil-fuel combustion. GHGs are non-toxic and non-hazardous at normal ambient concentrations, and there are no applicable ambient standards or emission limits for GHGs under the CAA. GHG emissions due to human activity are the primary cause of increased atmospheric concentration of GHGs since the industrial age and are the primary contributor to climate change. The primary GHG that would be emitted during project construction is carbon dioxide (CO_2), which would be emitted due to the operation of construction equipment and support vessels.

Emissions of GHGs are typically quantified and regulated in units of carbon dioxide equivalents (CO_2e). The CO_2e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO_2. Thus, CO_2 has a GWP of 1, methane has a GWP of 25, and nitrous oxide has a GWP of 298.[3]

Regulatory Requirements

Due to the temporary nature of project activities in an area classified as attainment, there are no applicable federal or state air quality permits that are necessary for the project.

Construction Emissions Impacts and Mitigation

Project construction would result in temporary, localized emissions that would last the duration of construction activities (i.e., about 8 weeks). Texas Gas anticipates utilizing 10 to 12 support vessels, including tug boats, tank barge, crane barge, material barge, three field boats, draft deck boat, quarters barge, and airboat. Additionally, Texas Gas would utilize the following equipment onboard the vessels, including an excavator, crane, air compressor, jet pump, hydraulic power unit, and generators. Support vessels and equipment would generate exhaust emissions through the use of diesel or gasoline engines in order to complete the field work and support the field crew onboard the vessels. Because all project activities would occur offshore and work would primarily be completed under water, fugitive dust emissions would not be generated.

Texas Gas estimated construction emissions based on the fuel type and anticipated frequency, duration, capacity, and levels of use of various types of construction equipment and vessel engines. Construction emissions were estimated using emission factors in the EPA's Tier 3 Off-Road Standards, AP-42 Compilation of Air Emissions Factors, and 40 CFR 98. Table 3

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3 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.

below provides the total project construction emissions, including exhaust emissions from all construction equipment and support vessels.

Table 3: Construction Emissions for Project Construction (tons per construction duration)

	NO_x	CO	SO_2	PM_{10}	VOC	Formaldehyde	HAPs	CO_2e
Total Construction Emissions	**5.96**	**4.25**	**0.01**	**0.27**	**0.60**	**0.01**	**0.02**	**775.86**

NO_x = Nitrogen Oxides

Construction emissions shown in table 3 are not expected to result in a violation or degradation of ambient air quality standards. Texas Gas would minimize construction exhaust emissions through the use of federal design standards imposed at the time of manufacture and would comply with the EPA's marine vessel emission regulations. Texas Gas would also minimize emissions through the purchase of commercial gasoline and diesel fuel products, specifications of which are controlled by federal and state air pollution control regulations.

Construction emissions would occur over the duration of construction activity and would be emitted at different times throughout the project area. Construction emissions would be relatively minor and would result in short-term, localized impacts in the immediate vicinity of construction work areas. Given the temporary nature of the project, and with the mitigation measures proposed by Texas Gas, we conclude air quality impacts from the project would not result in significant impacts on local or regional air quality.

Noise

Noise is generally defined as sound with intensity greater than the ambient or background sound pressure level. Project construction would affect overall noise levels in the project area; however, due to the project's offshore location, the nearest residences are several miles away. Seasonally-occupied fishing camps may be occupied near the project site during construction. The nearest fishing camp is 1,000 feet from Site 6. Construction activities may result in temporary noise impacts on occupants within this fishing camp. With the exception of pigging activities, all project activities would occur during daylight hours. Pigging activities would be conducted 24 hours a day for 4 days, and would generate minimal noise and require minimal lighting on existing platforms. Due to the temporary and short-term nature of construction activities, distance to the nearest permanently occupied residences, and the fact that the majority of construction activities would occur during daylight hours only, we conclude noise impacts from construction would not result in significant impacts on nearby fishing camps or residents. No project noise would occur after completion of the abandonment.

Polychlorinated Biphenyls

Texas Gas states that polychlorinated biphenyls (PCB) contamination greater than 50 parts per million is not present at existing project facilities. However, if piping with PCB concentrations greater than 50 parts per million is encountered during the abandonment work,

Texas Gas would dispose of all piping and all related media in accordance with the EPA Toxic Substance Control Act pursuant to the Commission's regulations. Therefore, the project would not impact any PCB contamination.

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 Department of Transportation pipeline standards are published in 49 CFR 190-199. Part 192 of 49 CFR specifically addresses natural gas pipeline safety issues and prescribes the minimum standards for operating and maintaining pipeline facilities. 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.

Project activities would represent a minimum increase in risk to the public during construction; however, we are confident that project facilities would be abandoned safely and in compliance with applicable Department of Transportation and Occupational Safety and Health Administration requirements.

9.0 Cumulative Impacts

In accordance with NEPA, we considered the cumulative impacts of the project and other projects or actions in the area. Cumulative impacts represent the incremental effects of the proposed action when added to other past, present, or reasonably foreseeable future actions. Cumulative impacts can result in individually minor actions becoming collectively significant impacts on environmental resources if they take place in the same general area over a given period of time.

The purpose of this analysis is to identify and describe cumulative impacts that would potentially result from implementation of the project. The cumulative impact analysis generally follows the methodology set forth in relevant guidance from the Council on Environmental Quality and the EPA. Under these guidelines, inclusion of other actions within the analysis is based on identifying commonalities of impacts from other actions to potential impacts that would result from the project. An action must meet the following criteria to be included in the cumulative impacts analysis:

- impact a resource area potentially affected by the project;
- cause this impact within all, or part, of the project area; and
- cause this impact within all, or part, of the time span for the potential impact of the project.

The EA analyzed the project impacts on geology and soils; water resources; wildlife; cultural resources; land use and visual resources; and air quality and noise. As described in section B of this EA, the project-related construction and operational impacts would not impact groundwater and geological resources or be impacted by geologic hazards; therefore, cumulative impacts on geology and groundwater would not be realized and are not evaluated for cumulative impacts. Additionally, the project would not affect land use or historical properties or have socioeconomic or visual impacts, would have negligible impacts to soils and no impact on upland vegetation given the primarily open-water environment, and as such cumulative impacts on these resources were not considered in the cumulative impact analysis.

Below, we assess the potential for cumulative impacts on surface water, wetlands, wildlife and fisheries, air quality, and noise. The geographic scope used to assess cumulative impacts for each resource are discussed below in table 4.

Table 4: Geographic Scope for Cumulative Impacts

Environmental Resources	Geographic Scope	Rationale
Surface Water, Wetlands, Fish, and Wildlife	Hydrologic Unit Code 12 Watershed	Watersheds are natural, well-defined boundaries for surface water flow. Wildlife possess an interconnected relationship to surface water resources; therefore, these resources are also considered during the watershed evaluation process.
Noise – Construction	0.25 mile	Construction noise is limited and is commonly associated with the utilization of large equipment.
Air Quality – Construction	0.25 mile	Construction equipment is the primary source of emissions during construction; however, these emissions will be minimal and will quickly dissipate to ambient levels as distance increases from the site.

Texas Gas identified major projects within the vicinity of the project by reviewing publicly available resources, including FERC's eLibrary, USACE Public Notice Records, and the LDNR SONRIS database. The projects identified as occurring within the resource-specific geographic scopes and within current and/or reasonably foreseeable timeframes are identified based on resource type below in table 5.

Table 5: Past, Present, and Reasonably Foreseeable Projects Considered in the Cumulative Impacts Analysis for the NLP-BJB Abandonment Project					
Project (Project Proponent)	**Project Description**	**Estimated Construction Timeframe**	**Project Size (acres)**	**Closest Distance from Project (miles)[a]**	**Resources Potentially Affected within the proposed Project's Geographic Scope**
Caillou Bay–Dog Lake and Deep Saline–Peltex (CBD-DST) Abandonment Project (Texas Gas)	Abandonment of two pipeline laterals, two platforms, and remove 37 bulkheads/rock piles/ signage.	2018	11.22	0.0[b]	Surface Water, Wildlife, Noise, Air Quality
The Louisiana Land and Exploration Company, LLC	Construction of 21,392 linear feet of earthen terraces in shallow, open water. A total of 79,230 cubic yards of native material will be excavated to construct terraces.	2017-2018	100	1.1	Surface Water, Wildlife
Shell Pipeline Company, LP	Repairing four anomalies on the Ship Shoal 22-inch pipeline.	2017	1.52	1.8	Surface Water, Wildlife
Castex Energy, Inc.	Installation of rock pads and structures to drill wells for oil and gas exploration.	2018	26.77	0.0	Surface Water, Wildlife, Noise, Air Quality
a Distance is measured from nearest portion of the proposed project workspace to the identified project's location. b Both projects will require that work be conducted at the BJB 1+5.4 Platform.					

Surface Water Resources

Potential impacts on surface water resources during project activities would be associated with in-water excavation activities and potential spills of hazardous materials. The CBD-DST Abandonment Project would have similar impacts on surface water resources as those described above for Texas Gas' proposed project. The Castex Energy project would result in the construction of rock pads and structures to drill wells for oil and gas exploration. These permanent structures would also result in a change in benthic type (from soft mud to rock). The Shell Pipeline Company, LP project would not occur at the same time as the proposed project; therefore, cumulative impacts on surface water resources are not likely to occur. The Louisiana Land and Exploration Company project would require excavation in shallow, open water, which would increase turbidity in the vicinity of the excavation activities, and construction of earthen terraces in shallow, open water, which would permanently change subsurface type where terraces are constructed. These impacts would be farther removed from Texas Gas' proposed project (1.1 mile).

Excavation of the water bottom has the greatest potential for impacts on surface water resources. These impacts include increased turbidity and sedimentation up to 500 feet from the excavation site. These impacts could contribute to a cumulative impact if conducted concurrently with excavation activities of other projects considered. However, it is anticipated that turbidity associated with the project would remain within a localized area, quickly returning to ambient conditions following the completion of project activities. Therefore, impacts of project activities would be highly localized and of short duration.

Before any in-water activities could occur for the proposed project or other projects in the geographic scope, Texas Gas and the other project proponents are required to obtain authorization under a Coastal Use Permit with the OCM, Section 404 Permit with the USACE, and corresponding Section 401 Water Quality Certification with the Louisiana Department of Environmental Quality. These authorizations are contingent on the use of best management practices to minimize impacts on water quality and ensure that state water quality standards are maintained.

Increased construction and industrial operation activities in and around surface waterbodies could result in an increased potential for spills of hazardous materials. Similar to the proposed project, other projects would also be required to adhere to regulations associated with the use and storage of hazardous materials and are anticipated to implement their project specific SPCC plans or other best management practices to minimize the potential for spills of hazardous materials to reach surface waters. Therefore, we conclude the potential for cumulative impacts as a result of spills of hazardous materials would be negligible, as spills would be cleaned up promptly by the responsible party, which would minimize the likelihood of any cumulative impacts.

While surface water impacts associated with the project could contribute to a cumulative effect when combined with other projects within the geographic scope, this cumulative

effect is not anticipated to be significant. Overall, cumulative impacts on surface water resources are anticipated to be minor and short-term.

Wetlands

Excavation activities of the proposed project would result in minor and temporary impacts on wetland resources characterized as estuarine emergent marsh in the project area (totaling 0.06 acre of temporary impact). The impacts would be associated with disturbance of the substrate bottom, the overall turbidity in the open water and marsh areas, and potential spills of hazardous materials. Texas Gas would minimize the temporary impacts associated with excavation activities of the project by implementing measures outlines in the FERC Procedures, such as returning the wetland and marsh areas to pre-construction contours upon completion of the project.

Texas Gas and the proponents of other projects in the geographic scope are required to obtain authorization under Section 404 of the CWA from the USACE for wetland impacts. These authorizations are contingent on the use of best management practices to minimize impacts on wetlands. In addition, the CBD – DST Abandonment Project would be required to implement the measures outlined in the FERC Procedures to minimize impacts on wetlands. The proposed project would not result in the loss or conversion of wetland habitat and the impacts on wetlands associated with the other projects is not known. However, if the identified projects resulted in permanent loss or conversion of wetlands, they would be required to mitigate for those impacts. Therefore, concurrent construction of the proposed project and other projects would result in minimal short-term cumulative impacts on wetland resources, but would not contribute to long-term or permanent cumulative impacts on wetlands.

Increased construction and industrial operation activities in and around wetlands could result in an increase in the potential for spills of hazardous materials. However, all project proponents, including Texas Gas, would be required to implement measures to minimize the potential for spills of hazardous materials to reach wetlands. Therefore, the potential for cumulative impacts as a result of spills of hazardous materials is considered to be minimal.

Wildlife and Fish

The majority of cumulative impacts on wildlife, fish, and threatened and endangered species would result from construction-related disturbances causing increased turbidity and disturbance of the water bottom. Following project activities, sediments disturbed would quickly settle and the impacted area would return to preexisting conditions. Removal of manmade structures, including platforms, bulkheads, and signs would result in an insignificant beneficial change in habitat type. Thus, impacts on fish, wildlife, and vegetation resulting from project activities would be minor, short-term, and localized.

The CBD-DST Abandonment Project and the Shell Pipeline Company project would result in similar impacts on fish, wildlife, and threatened and endangered species as the proposed project, including temporarily increased turbidity and water bottom disturbance during construction. The aforementioned projects would not result in new permanent impacts. The

Shell Pipeline Company project is not anticipated to occur concurrent with the proposed project activities; therefore, its construction related impacts on fish, wildlife, and threatened and endangered species would not overlap with the proposed project or contribute to cumulative impacts.

The Louisiana Land and Exploration Company project would require excavation in shallow, open water, which would increase turbidity in the vicinity of the excavation activities, and construction of earthen terraces in shallow, open water, which would permanently change habitat type where terraces are constructed. The Castex Energy project would result in the construction of rock pads and structures to drill wells for oil and gas exploration. These permanent structures would also result in a change in habitat type; however, due to the abundance of similar habitat in the vicinity, impacts on fish and wildlife in the vicinity of these projects would be minor.

Where construction schedules overlap, increased noise, lighting, and human activity could also disturb wildlife in the area. More mobile species, such as fish or birds, may temporarily displace to nearby suitable habitat or avoid the areas affected by sediment disturbance and turbidity, but are anticipated to return to those areas temporarily impacted following the completion of project activities. Direct mortality of smaller, less mobile species, including various invertebrate species, may occur as a result of project activities in the area. Overlapping construction timelines increases the area and duration of disturbance for wildlife, thus increasing cumulative impact. Nevertheless, there is abundant available habitat within the geographic scope; therefore, cumulative impacts on fish and wildlife as a result of increased noise, light, and human activity are anticipated to be of short duration, localized, and minor.

Air Quality

Construction of the proposed project would result in short-term construction impacts on air quality in the vicinity of the project, as discussed in section B.7. Construction of the CDB-DST Abandonment Project and the Castex Energy Project would occur concurrently with the proposed project and may contribute cumulatively to impacts on air quality. Construction of these projects would involve the use of heavy equipment that would generate emissions of air pollutants and would result in short-term emissions that would be highly localized, temporary, and intermittent. Based on the mitigation measures proposed by Texas Gas, and the temporary and localized impacts of project construction, the proposed project would not result in significant cumulative impacts on air quality during construction.

Noise

Construction of the project would result in short-term and temporary impacts on existing noise levels in the project area. Construction of the CBD-DST Abandonment Project and the Castex Energy Project would occur concurrently with the proposed project and may contribute cumulatively to impacts on noise levels. However, based on the short-term and temporary nature of construction-related activities, as well as the distance from the nearest permanently occupied residences, impacts from the project are not expected to significantly contribute to cumulative impacts on noise levels during construction.

C. ALTERNATIVES

In accordance with NEPA and Commission policy, we evaluated alternatives to the project to determine whether they would be reasonable and environmentally preferable to the proposed action. These alternatives included the no-action alternative and abandonment by removal alternative. Due to the proposed project involving the abandonment of existing facilities, no site alternatives or system alternatives were identified. The evaluation criteria used for developing and reviewing alternatives were:

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

Under the No-Action Alternative, Texas Gas would not abandon the NLP or BJB Pipelines and none of the environmental impacts identified in this EA would occur. The No-Action Alternative would not accomplish the project objective of abandoning the facilities that are idle and no longer needed, which would cause Texas Gas to continue maintaining these facilities or they could fall into a state of disrepair. We have dismissed this as a reasonable alternative as it could not meet the project's objectives.

We evaluated the alternative of abandonment by removal rather than abandonment in place of the NLP and BJB Pipelines. The removal of approximately 16.7 miles of pipeline within open water and marsh habitats would result in significantly greater environmental impacts than the proposed action without any significant environmental advantages over the proposed project. Therefore, we do not recommend this alternative.

Based on the limited environmental impact associated with this project and Texas Gas proposed mitigation measures, we did not identify any unresolved resource conflicts which would present a need to examine further alternatives. Additionally, no comments were received regarding resources that would be impacted by the project. Therefore, because the impacts associated with the proposed project are not significant, we did not evaluate additional alternatives. We conclude that the proposed action is the preferred alternative to meet the project objectives.

D. CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis in this EA, we have determined that if Texas Gas abandons the proposed NLP-BJB Pipeline Abandonment Project facilities in accordance with its application and supplements, and the staff's recommended mitigation measures, approval of this proposal would not constitute a major federal action significantly affecting the quality of the human environment. We recommend that the Commission Order (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 Gas shall follow the abandonment 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 Gas 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 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 environmental resources during activities associated with abandonment 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 necessary 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 abandonment activities.

3. **Prior to any construction**, Texas Gas shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors (EIs), and contractor personnel will be informed of the EI's authority and have been or will 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 abandonment activities and locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, Texas Gas 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 all facilities approved for abandonment 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 Gas' exercise of eminent domain authority granted under Natural Gas Act (NGA) section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. Texas Gas' 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 than natural gas.

5. Texas Gas 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**.

   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 Order and before abandonment activities begin**, Texas Gas shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP. Texas Gas must file revisions to the plan as schedules change. The plan shall identify:

   a. how Texas Gas will implement the abandonment 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 Gas will 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 will ensure that sufficient personnel are available to implement the environmental mitigation;

d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
e. the location and dates of the environmental compliance training and instructions Texas Gas will 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 Gas' organization having responsibility for compliance;
g. the procedures (including use of contract penalties) Texas Gas will 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 Gas shall employ at least one EI per construction spread. 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 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 the 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 Gas shall file updated status reports with the Secretary on a **biweekly** basis until all abandonment and restoration activities are complete. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:

a. an update on Texas Gas' 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 EI(s) 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;
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 Gas from other federal, state, or local permitting agencies concerning instances of noncompliance, and Texas Gas' response.

9. Texas Gas must receive written authorization from the Director of OEP **before commencing abandonment of any project facilities.** To obtain such authorization, Texas Gas must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).

10. Texas Gas shall not begin construction activities **until**:

a. the staff completes ESA consultation with the NMFS; and
b. Texas Gas has received written notification from the Director of OEP that construction or use of mitigation may begin.

E. LIST OF PREPARERS

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F. REFERENCES

EPA. 2017. NAAQS Table. https://www.epa.gov/criteriaair-pollutants/naaqs-table. Accessed September 2017.

USFWS 2018. Letter dated March 5, 2018 from Ms. Amy Butler of Perennial Environmental Services, LLC to Mr. Joseph Ranson of the USFWS with a stamp of approval from Mr. Ranson on March 12, 2018. Can be accessed on FERC eLibrary at www.ferc.gov - Accession No. 20180502-5046.

NMFS 2018. Email dated April 16, 2018 from Twyla Cheatwood of NOAA to Amy Butler of Perennial Environmental Services, LLC. Can be accessed on FERC elibrary at www.ferc.gov – Accession No. 20180502-5046.

APPENDIX A

Federal and State Threatened and Endangered Species Potentially Occurring within the Project Area

Federal and State Threatened and Endangered Species Potentially Occurring within the Project Area						
Common Name	**Scientific Name**	**Federal Status [a]**	**State Status [b]**	**Preferred Habitat**	**Project Impact Assessment**	**Determination of Effect**
Mammals						
West Indian Manatee	*Trichechus manatus*	T	E	Inhabits marine open water, bays, and rivers, often with submerged aquatic beds or floating vegetation. Predominantly found in rivers and estuaries, although maytravel through salt water.	Suitable habitat may be present in the Project area; however, Texas Gas will implement measures, as recommended by USFWS, to minimize potential impacts on this species.	*Not likely to adversely affect*
Birds						
Piping Plover	*Charadrius melodus*	T	T/E	Occurs on beaches and mudflats of barrier islands in southeastern coastal parishes.	Suitable habitat may be present in the Project area; however, the species is highly mobile and will likely relocate to similar adjacent habitats	*Not likely to adversely affect*
Peregrine Falcon	*Falco peregrinus*	N/A	T/E	Inhabits coastal marshes and lakes. Nests on cliffs, but formerly nested in cavities of old, large trees in the southern U.S. Found throughout the State of Louisiana during migration. Winters in open areas along the coast and within Louisiana, generally found in the coastal region.	Suitable habitat may be present in the Project area; however, the species is highly mobile and will likely relocate to similar adjacent habitats.	*No significant impact*
Bald Eagle	*Haliaeetus leucocephalus*	Delisted	E	Occurs in coasts, rivers, and large lakes. Nests in the tops of cypress trees near open water. During migration, habitat includes mountains and open country, generally close to water. Typically roosts in trees.	Suitable habitat is not present in the Project area.	*No impact*

Federal and State Threatened and Endangered Species Potentially Occurring within the Project Area						
Common Name	**Scientific Name**	**Federal Status [a]**	**State Status [b]**	**Preferred Habitat**	**Project Impact Assessment**	**Determination of Effect**
Brown Pelican	*Pelecanus occidentalis*	Delisted	E	Found in bays, tidal estuaries, and along the Louisiana coast. Feeds in coastal waterbodies and nests in shrub thickets within dunes of barrier islands.	Suitable habitat may be present in the Project area; however, the species is highly mobile and will likely relocate to similar adjacent habitats.	*No significant impact*
Rufa Red Knot	*Calidris canutus rufa*	T	NL	Occurs on tidal flats, shores, and tundra. Migrates and winters in coastal mudflats, tidal zones, and occasionally open sandy beaches. Nests in the Arctic tundra near a pond or stream on high, barren, inland areas.	Suitable habitat may be present in the Project area; however, the species is highly mobile and will likely relocate to similar adjacent habitats	*Not likely to adversely affect*
Fishes						
Pallid Sturgeon	*Scaphirhynchus albus*	E [c]	E	Found in main channels of rivers with strong currents in the Southeast U.S. Waterbodies inhabited tend to be large and excessively turbid.	Suitable habitat is not present in the Project area.	*No impact*
Gulf Sturgeon	*Acipenser oxyrinchus desotoi*	T	NL	Found in long, free-flowing, spring-fed rivers, with a hard bottom, steep banks, and temperature ranging from 60 72°F. Spawn in natal freshwater streams and migrate to marine water of Gulf of Mexico to forage and overwinter. Juveniles inhabit rivers 2-3 years before migrating to marine waters.	This species does not occur west of the Mississippi River.	*No effect*
Reptiles						
Green Sea Turtle	*Chelonia mydas*	N/A [d]	NL	Nests in tropical and subtropical regions on high energy islands and mainland beaches where deep nest cavities can be dug above the high water line.	Suitable nesting habitat is not present in the Project area.	*No effect*

Federal and State Threatened and Endangered Species Potentially Occurring within the Project Area						
Common Name	**Scientific Name**	**Federal Status [a]**	**State Status [b]**	**Preferred Habitat**	**Project Impact Assessment**	**Determination of Effect**
		T [e]		Inhabits warm estuaries, oceans and bays, seagrass beds, coral reefs, and rocky outcrops. Foraging habitat includes seagrass and algae pastures.	Suitable marine habitat may be present in the Project area; however, the species is highly mobile and will likely avoid the Project area. [f]	*Not likely to adversely affect*
Hawksbill Sea Turtle	*Eretmochelys imbricata*	E [d]	NL	Nesting habitat includes undisturbed deep-sand beaches in the tropics. Nesting may occur in beach vegetation.	Suitable nesting habitat is not present in the Project area.	*No effect*
		E [e]		Found in coral reefs, lagoons or oceanic islands, rocky areas, and narrow creeks and passes, although habitat use varies with life stage. Post-hatchlings inhabit algal mats, flotsam, and jetsam of pelagic environment. Juveniles shift to coastal foraging zones, feeding on sponges, invertebrates, and algae.	Suitable marine habitat may be present in the Project area; however, the species is highly mobile and will likely avoid the Project area. [f]	*Not likely to adversely affect*
Kemp's Ridley Sea Turtle	*Lepidochelys kempii*	E [d]	NL	Nests on beaches that are near extensive swamps or large, open bodies of water with seasonal connections to ocean.	Suitable nesting habitat is not present in the Project area.	*No effect*
		E [e]		Inhabits the nearshore and inshore waters of the Gulf of Mexico. Hatchlings swim offshore to areas with floating sargassum seaweed, where they remain as juveniles. Sub-adult and adult turtles inhabit nearshore habitats with muddy or sandy bottoms.	Suitable marine habitat may be present in the Project area; however, the species is highly mobile and will likely avoid the Project area. [f]	*Not likely to adversely affect*

Federal and State Threatened and Endangered Species Potentially Occurring within the Project Area

Common Name	Scientific Name	Federal Status [a]	State Status [b]	Preferred Habitat	Project Impact Assessment	Determination of Effect
Leatherback Sea Turtle	*Dermochelys coriacea*	E [d]	NL	Nests on sloped, vegetated, sandy beaches near deep water and rough seas.	Suitable nesting habitat is not present in the Project area.	*No effect*
		E [e]		Mostly occurs in the open ocean, although occasionally forages in coastal waters. Species is the most migratory and wide-ranging of all sea turtles.	Suitable marine habitat may be present in the Project area; however, the species is highly mobile and will likely avoid the Project area.[f]	*Not likely to adversely affect*
Loggerhead Sea Turtle	*Caretta caretta*	E [d]	NL	Nests on narrow, steeply-sloped, coarse-grained ocean beaches.	Suitable nesting habitat is not present in the Project area.	*No effect*
		T [e]		Post-hatchlings swim away from shore to areas where surface waters converge to form local downwellings, often having accumulations of seaweed. Juveniles occupy the oceanic, then nearshore coastal zones. Adults found in relatively shallow continental shelf waters.	Suitable marine habitat may be present in the Project area; however, the species is highly mobile and will likely avoid the Project area.[f]	*Not likely to adversely affect*

Sources: LDWF, 2017; National Audubon Society, 2017; NOAA 2017; USFWS, 2017
E = Endangered; T = Threatened; NL = Not Listed

[a] Federal listings for threatened and endangered species were obtained from the USFWS IPaC System and the NMFS Louisiana Threatened and Endangered Species List.
[b] State listings for threatened and endangered species were obtained from the Louisiana Department of Wildlife and Fisheries (2017).
[c] Pallid sturgeon is federally listed as endangered; however, its range does not include the Project area. Thus, pallid sturgeon is not included in the USFWS IPaC or discussed as a federally listed threatened or endangered species with potential to inhabit the Project area.
[d] Sea turtle nesting habitat is under the jurisdiction of the USFWS. Designations were obtained from the USFWS IPaC System (2017).
[e] Sea turtles marine habitat I sunder the jurisdiction of the NMFS. Designations were obtained from the NMFS Louisiana Threatened and Endangered Species List (2017).
[F] Texas Gas would implement measures to avoid vessel strikes with manatees, which would also minimize the likelihood of impacts on sea turtle species.