

**PAULSBORO NATURAL GAS PIPELINE COMPANY LLC**

Docket No. CP16-\_\_\_\_-000

**EXHIBITS**

**VOLUME I – PUBLIC**

**PART 5**

# **PAULSBORO NATURAL GAS PIPELINE COMPANY LLC**

## **FERC RESOURCE REPORT 8 LAND USE, RECREATION AND AESTHETICS**

### **PROPOSED DELAWARE RIVER PIPELINE RELOCATION PROJECT**

NOVEMBER 2015

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STV Project No.: 38-17378

*Prepared for:*

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SUMMARY OF FILING INFORMATION	
INFORMATION	FOUND IN
<b>Minimum Requirements to Avoid Rejection</b>	
<p>___ 1. Classify and quantify land use affected by: (§380.12(j)(1))</p> <ul style="list-style-type: none"> <li>a. Pipeline construction and permanent rights-of-way (§380.12(j)(1));</li> <li>b. Extra work/staging areas (§380.12(j)(1));</li> <li>c. Access roads (§380.12(j)(1));</li> <li>d. Pipe and contractor yards (§380.12(j)(1)); and</li> <li>e. Aboveground facilities (§380.12(j)(1)).</li> </ul> <ul style="list-style-type: none"> <li>• For aboveground facilities provide the acreage affected by construction and operation, acreage leased or purchased and describe the use of the land not required for operation.</li> </ul>	Section 8.0
<p>___ 2. Identify by milepost all locations where the pipeline right-of-way would at least partially coincide with existing right-of-way, where it would be adjacent to existing rights-of-way, and where it would be outside of existing right-of-way. (§380.12(j)(1))</p> <ul style="list-style-type: none"> <li>• This may apply to the offshore as well.</li> </ul>	Resource Report 1 App 1A-5
<p>___ 3. Provide detailed typical construction right-of-way cross-section diagrams showing information such as widths and relative locations of existing rights-of-way, new permanent right-of-way and temporary construction right-of-way. (§380.12(j)(1))</p>	Resource Report 1
<p>___ 4. Summarize the total acreage of land affected by construction and operation of the project. (§380.12(j)(3))</p> <ul style="list-style-type: none"> <li>• This applies to the offshore as well.</li> </ul>	Table 8.1.6-1
<p>___ 5. Identify by milepost all planned residential or commercial/business development and the timeframe for construction. (§380.12(j)(3))</p> <ul style="list-style-type: none"> <li>• Identify all planned development crossed or within 0.25 mile of proposed facilities.</li> </ul>	Section 8.1.1, 8.2
<p>___ 6. Identify by milepost special land use (<i>e.g.</i>, maple sugar stands, specialty crops, natural areas, national and state forests, conservation land, etc.) (§380.12(j)(4))</p> <ul style="list-style-type: none"> <li>• This applies to the offshore as well, where it may include oyster and other shellfish beds, special anchoring or lightering areas and shipping lanes.</li> </ul>	Section 8.1.1
<p>___ 7. Identify by beginning milepost and length of crossing all land administered by federal, state or local agencies, or private conservation organizations. (§380.12(j)(4))</p> <ul style="list-style-type: none"> <li>• This applies to the offshore as well.</li> </ul>	Table 8.1.6-1
<p>___ 8. Identify by milepost all natural, recreational or scenic areas and all registered natural landmarks crossing by project. (§380.12(j)(4&amp;6))</p> <ul style="list-style-type: none"> <li>• This applies to the offshore as well.</li> <li>• Identify areas within 0.25 mile of any proposed facility.</li> </ul>	Section 8.3.2
<p>___ 9. Identify all facilities that would be within designated coastal zone management areas. Provide a consistency determination or evidence that a request for a consistency determination has been filed with the appropriate state agency. (§380.12(j)(4&amp;7))</p>	Section 8.3.4
<p>___ 10. Identify by milepost all residence that would be within 50 feet of the construction right-of-way or extra work area. (§380.12(j)(5))</p>	Section 8.2
<p>___ 11. Identify all designated or proposed candidate National or State Wild and Scenic Rivers crossed by the project. (§380.12(j)(6))</p>	N/A

<p>___ 12. Describe any measures to visually screen aboveground facilities, such as compressor stations. (§380.12(j)(11))</p>	Section 8.1.6
<p>___ 13. Demonstrate that applications for rights-of-way or other proposed land use have been or soon will be filed with federal land-managing agencies with jurisdiction over land that would be affected by the project. (§380.12(j)(12))</p>	Table 8.1.6.1
<b>Additional Information Often Missing and Resulting in Data Requests</b>	
<p>___ Identify all buildings within 50 feet of the construction right-of-way or extra work areas.</p>	Section 8.2.2
<p>___ Describe the management and use of all public lands that would be crossed.</p>	N/A
<p>___ Provide a list of landowners by milepost or tract number that corresponds to information on alignment sheets.</p>	Section 8.2.2
<p>___ Provide a site-specific construction plan for residences within 50 feet of construction.</p>	Section 8.2.2

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### **APPENDICES**

Appendix 8A – Project Location Map

Appendix 8B – Agency Correspondence

## **MASTER LIST OF ACRONYMS**

AASHTO	American Association of State Highway Transportation Officials
ACHP	Advisory Council on Historic Preservation
AERC	Airport Emission Reduction Credit
APE	Area of Potential Effects
AREMA	American Railway Engineering Maintenance-of-Way Association
ARO	Abrasion Resistance Overlay
ASME	American Society of Mechanical Engineers
BMP	Best Management Practice
BOP	Delaware Valley Safety Council Basic Orientation Plus
BPL	Buckeye Partners L.P.
BTU	British Thermal Unit
CEP	Capacity Enhancement Program
CFR	Code of Federal Regulations
CI	Chief Inspector
CP	Cathodic Protection
CRM	Cultural Resource Manager
CRGIS	Cultural Resource Geographic Information Systems
CWA	Clean Water Act
CWF	Cold Water Fishes
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program
DCNR	Pennsylvania Department of Conservation and Natural Resources
DCCD	Delaware County Conservation District
DBH	Diameter at Breast Height
DOT	Department of Transportation
DTH	Dekatherm
E&S	Erosion and Sedimentation Control
E&SCP	Erosion and Sedimentation Control Plan
EDR	Environmental Data Resources
EFH	Essential Fish Habitat
EGM	Electronic Gas Measurement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESCGP-2	Erosion and Sediment Control General Permit – 2 (for Oil and Gas Activities)
EV	Exceptional Value
FAA	Federal Aviation Administration
FBE	Fusion Bonded Epoxy
FEMA	Federal Energy Management Agency
FERC	Federal Energy Regulatory Commission
FIRM	Flood Insurance Rate Maps
FWCA	Fish & Wildlife Coordination Act
GCSCD	Gloucester County Soil Conservation District
HAP	Hazardous Air Pollutant
HDD	Horizontal Directional Drill
HQ	High Quality
IMP	Integrity Management Program
IPaC	Information, Planning, & Conservation
LOD	Limit of Disturbance
MBTA	Migratory Bird Treaty Act
MF	Migratory Fishes

MMSCFD	Million Standard Cubic Feet per Day
MSDS	Material Safety Data Sheet
NAD83	North American Datum of 1983
NAVD88	North American Vertical Datum of 1988
NDT	Nondestructive testing
NEPA	National Environmental Policy Act
NGL/LNG	Natural Gas Liquid (Ethane, Propane, and Butane)
NJ	New Jersey
NJDA-SSCC	New Jersey Department of Agriculture – State Soil Conservation Committee
NJDEP	New Jersey Department of Environmental Protection
NJDEP-DFW	New Jersey Department of Environmental Protection Division of Fish & Wildlife
NJHP	New Jersey Natural Heritage Program
NJHPO	New Jersey Historical Preservation Office
NJPDES	New Jersey Pollutant Discharge Elimination System
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
OFA	Object Free Area
O&M	Operations and Maintenance
ONRW	Outstanding National Resource Waters
OSHA	Occupational Safety and Health Administration
PA	Pennsylvania
PABHP	Pennsylvania Bureau of Historic Preservation
PADEP	Pennsylvania Department of Environmental Protection
PBF	PBF Energy
PCBs	Polychlorinated Biphenyls
PennDOT	Pennsylvania Department of Transportation
PGC	Pennsylvania Game Commission
PFBC	Pennsylvania Fish and Boat Commission
PHL	Philadelphia International Airport
PHMC	Pennsylvania Historic and Museum Commission
PL	Pinelands Waters
PNDI	Pennsylvania Natural Diversity Inventory
PNGPC	Paulsboro Natural Gas Pipeline Company LLC
PPC	Preparedness Prevention and Contingency Plan
PRC	Paulsboro Refining Company, LLC
PUB	Palustrine Unconsolidated Bottom
ROW(s), R/W	Right(s) of Way
RR	Resource Report
SHPO	State Historic Preservation Office
SOSC	Species of Special Concern
SSURGO	Soil Survey Geographic Database
STV	STV Energy Services, Inc.
SWCD	Soil and Water Conservation District
SWQS	Surface Water Quality Standards
SYMS	Specific Yield Material Strength

T&E	Threatened & Endangered Species
TETCo	Texas Eastern Transmission Corporation
TSA	Transportation Security Agency
TSF	Trout Stocking Fisheries
TWIC	Transportation Worker Identification Credential
TWS	Temporary Work Space
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USGS	United States Geological Survey
VALE	Voluntary Airport Low Emissions
VOC	Volatile Organic Compounds
WWF	Warm Water Fishes



## LAND USE, RECREATION AND AESTHETICS

### 8.0 INTRODUCTION

Paulsboro Natural Gas Pipeline Company LLC (PNGPC) is seeking authorization from the Federal Energy Regulatory Commission (Commission or FERC) under Sections 7(b) and 7(c) of the Natural Gas Act (NGA) to relocate, replace, remove, in part, and abandon in place, in part, an existing approximately 2.4-mile-long 6-inch and 8-inch diameter natural gas pipeline (Pipeline) extending across the Delaware River between Delaware County, Pennsylvania and Gloucester County, New Jersey (Delaware River Pipeline Relocation Project or the Project). The existing facilities were certificated by the Commission in 1998 in Docket No. CP97-750-000<sup>1</sup>. The Pipeline transports approximately 40,000 dekatherms per day (DTH/day) or 38 million standard cubic feet per day (MMSCFD) from a Texas Eastern Transmission, LP<sup>2</sup> transmission line to the refinery owned by Paulsboro Refining Company LLC (PRC), a PNGPC affiliate, in Paulsboro, New Jersey to support PRC refinery operations. The sole customer served by the Pipeline is, and will continue to be, the PRC refinery. The Pipeline ties into the Spectra transmission line at a meter site to the northwest of the Philadelphia International Airport (PHL).

In 2014, an underwater portion of the Pipeline was damaged as a result of the United States Army Corps of Engineers' (USACE) dredging activities in the Delaware River. As discussed below, USACE has notified PNGPC that the existing Pipeline must be relocated in order to accommodate planned channel bend widening to be carried out by USACE as part of the Delaware River Main Channel Deepening Project (45-Foot Project). The 45-Foot Project is ongoing and the anticipated project completion is 2017. The USACE imposed a deadline to PNGPC to have the Pipeline relocated and the segment within the river to be removed by June 2017.

As part of the Project, PNGPC proposes to replace the existing facilities with a combination of 24-inch and 12-inch steel pipeline to increase the volume of gas delivered to approximately 60,000 DTH/day, which assuming 1,040 British Thermal Units per cubic foot (BTU/ft<sup>3</sup>), is 57.7 MMSCFD. These proposed facilities will accommodate the USACE 45-foot Project while giving PNGPC the ability to serve the present natural gas requirements of PRC and to accommodate future commercial activity.

Following construction of the proposed facilities, portions of the existing facilities will be removed as required by USACE and PHL. An approximately 425-foot section of the existing 8-inch line will be removed from the Delaware River in order to avoid marine traffic impact within the widened channel and to eliminate potential conflict with future maintenance dredging operations. Within the PHL property, additional sections of existing pipe located in the PHL expansion area are to be tentatively removed. The remaining portions of the existing 6-inch and 8-inch pipeline will be abandoned in place, sealed and grouted as required by landowners and applicable regulatory agencies.

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<sup>1</sup> At the time of issuance, entity name was Mobil Gas Pipeline Company.

<sup>2</sup> Texas Eastern Transmission, LP, hereinafter referred to as "Spectra", is a U.S. natural gas pipeline system owned by Spectra Energy Partners, LP and operated by Spectra Energy.

The purpose of Resource Report 8 is to characterize and quantify all land uses that will be affected by the proposed Project. Additionally, this Resource Report quantifies potential impacts to land uses that will result from construction and operation of the Project, and identifies proposed mitigation measures to avoid or minimize these impacts. Complimentary project site information is also detailed in Resource Reports 2 (Water Use) and Resource Report 3 (Fish, Wildlife, and Vegetation).

The sources of information used to prepare the Resource Report include aerial photography; on-site field visits; and USGS 7.5-minute topographic quadrangle maps for Bridgeport, NJ-PA (2014), Lansdowne, PA (2013), Philadelphia, PA-NJ (2013), and Woodbury, NJ-PA (2014). Typical land use categories discussed in Resource Report 8, and their associated definitions, include the following:

- Forest/Woodland – Tracts of upland or wetland forest or woodland that would be removed for the construction right-of-way or extra work/staging areas;
- Open Land – Non-forested lands and scrub-shrub wetlands used for open space or pasture;
- Residential land – Residential yards, residential subdivisions, and planned new residential developments;
- Industrial/Commercial Land – Electric power or gas utility stations, manufacturing or industrial plants, landfills, mines, quarries, commercial or retail facilities, and roads;
- Open Water – Water crossings greater than 100 feet; and
- Other – Miscellaneous special use areas (e.g., land associated with schools, parks, places of worship, cemeteries, sports facilities, campgrounds, golf courses, ballfields, etc.)

For purposes of this Resource Report, the only land uses being impacted by the Project include Open Land, Industrial/Commercial Land, and Open Water.

## **8.1 PIPELINE FACILITIES**

### **8.1.1 Construction and Permanent Rights-of-Way**

As discussed in Section 1.2.1 of Resource Report 1, the project in its entirety will require approximately 28.6 acres during construction, including temporary work space areas, access roads, and removal of the 8-inch pipeline. Further, 4.5 acres will be required during operation on a permanent basis including pipeline facilities, aboveground facilities, and block valves at the refinery tie-in. PNGPC proposes to use a 75-foot construction right-of-way for the installation of the 24-inch pipeline. The construction right-of-way will consist of 30-feet of permanent easement and right-of-way and 45-feet of temporary workspace. This will be used wherever feasible and will be reduced in order to avoid obstacles or limit disturbances. There will be a 50-

foot wide easement and right-of-way with no additional workspace for the portion of the pipeline that will be installed via horizontal directional drill (HDD). Within the refinery, the intent is to utilize a 30-foot wide permanent easement and right-of-way and 10-feet of additional temporary workspace.

At the proposed crossing location, the Delaware River is considered an active shipping channel. No impacts are proposed to navigable activities as part of the HDD, however all navigation-signal equipment will be identified. There are no special anchoring areas within this segment of the Delaware River.

<b>Table 8.1.1-1</b> <b>Land Uses Crossed by the Pipeline</b>				
Facility	County, State	Open Water	Industrial/ Commercial/ Transportation	Open Land
New Pipeline	Delaware County, Pennsylvania	0.61 mile	1.12 miles	0.43 mile
	Gloucester County, New Jersey	0.45 mile	0.13 mile	0
<b>Total</b>		<b>1.06 miles</b>	<b>1.25 miles</b>	<b>0.43 mile</b>

### 8.1.2 Existing Right-of-Way

The creation of new right-of-way is necessary for all work to be completed for this project. Utilization of the existing right-of-way for the 8-inch pipeline was determined to be impractical based on minimizing current operations and future PHL expansion activities. Existing right-of-way will be left in place. Other existing rights-of-way will be crossed during construction include local township road right-of-ways, an overhead utility line right-of-way, and a railroad right-of-way. Negotiations with existing entities are ongoing and all necessary agreements will be completed prior to the commencement of this project.

### 8.1.3 Extra Work/Staging Areas

There are additional areas of temporary workspace in order to support HDD operations at the entry point and exit point. There are also laydown areas on either side of the Delaware River within the project area. These areas are approximately 500-feet by 180-feet on the Pennsylvania side and approximately 400-feet by 100-feet on the New Jersey side of the project.

### 8.1.4 Access Roads

There are five temporary access roads to be used during construction. Within Pennsylvania, three access roads will be used to enter the HDD entry site and the pullback string work area. The HDD entry site will be accessed via a proposed driveway south off Tinicum Island Road. The pullback work area will be accessed from an existing driveway west, also off Tinicum Island Road, and a proposed driveway at the end of Stevens Drive. The New Jersey side will be

accessed via two entrances, both from Clonmell Road. These access roads will be restored back to existing conditions after construction. Access road locations are depicted on Project Alignment Sheets in Resource Report 1, Appendix 1A-5.

**Table 8.1.4-1  
Access Roads**

State	Access Roads	Dimensions	Notes	<u>Existing/Proposed</u>
PA	Tinicum Island Road	20' x 220'	Access road off north side of Tinicum Island Road to access proposed HDD pullback area.	Existing
PA	Stevens Drive	40' x 790'	Access road to be an extension of existing Stevens Drive. This access road will provide entrance to TWS and HDD pullback area.	Proposed (Temporary)
PA	Tinicum Island Road	20' x 70'	Access road off of the south side of Tinicum Island Road to access off of the proposed TWS at HDD exit point location.	Proposed (Temporary)
NJ	Two inner-refinery construction entrances	20' x 50'	Access points will be within PRC refinery in Paulsboro.	Proposed (Temporary)

### 8.1.5 Pipe and Contractor Yards

Construction staging areas, pipe yard storage locations, as well as appropriate access routes to each, will be located within the Project LOD. Resource Report 1, Appendix 1A-5, depict overall project LOD, to include temporary workspace, access roads, and laydown areas.

There is no off site pipe storage yard anticipated due to the length of the project and the proposed extra workspace provided for the Project. The pipe used for the HDD will be delivered and strung out within the HDD pullback area. The remaining pipe will be stored in the Project laydown areas provided.

### 8.1.6 Aboveground Facilities

The aboveground facilities will be located within security fences. Any proposed fencing will be staked out prior to construction. The pig receiver and launcher will be placed on foundations designed from a geotechnical investigation performed on site. There is no water or sanitary sewer facilities proposed. Existing permanent access is in place to each site. The existing Spectra meter site has a driveway, but one additional driveway is proposed to provide additional room for safety to maintenance and construction personnel. This will allow vehicles in the future to pull into and through the site without backing up onto Tinicum Island Road.

**Table 8.1.6-1  
Land Requirements for Pipeline Facilities**

Facility	Typical Widths (ft)	Length (ft)	LOD During Construction (acres)	Land Affected During Operation (acres)	Property Owner (If Applicable)
PA Trench Installation	30 Perm/45 Temp	3,580	6.3	2.4	See Appendix 1D
HDD Installation	50 Perm	8,550	0.5 <sup>1</sup>	0.5 <sup>1</sup>	See Appendix 1D
NJ Trench Installation	30 Perm/10 Temp	1,562	1.5	1.1	See Appendix 1D
HDD Entry	140	220	0.7	0.5	See Appendix 1D
HDD Exit	270	400	2.5	0	See Appendix 1D
HDD Pullback	180	2,135	9.3	0	See Appendix 1D
PA Laydown	500	180	2.3	0	See Appendix 1D
NJ Laydown	400	100	0.9	0	See Appendix 1D
Laydown Access	40	790	0.7	0	See Appendix 1D
Pullback Access	20	220	0.1	0	See Appendix 1D
Two Temporary Workspace Areas (NJ)	50	100	0.2	0	See Appendix 1D
Existing Pipeline Removal	N/A	4,179	3.8	0	See Appendix 1D for private property owners, Delaware River
Existing Pipeline Abandonment	N/A	8,153			
<b>Totals</b>			<b>28.6</b>	<b>4.5</b>	
<sup>1</sup> Disturbance based on width of reamed HDD hole. No actual surface disturbance is proposed.					

## 8.2 RESIDENTIAL AND COMMERCIAL AREAS

### 8.2.1 Planned Residential and Commercial Areas

In New Jersey, the project is completely within the existing, operational PRC property. No existing or future residential and/or commercial development is planned within New Jersey-project areas.

In Pennsylvania, no future residential development is planned in the Project area. The only commercial development in the Project area is the proposed Capacity Enhancement Program (CEP) at PHL. PNGPC was able to obtain draft expansion plans from the PHL, which depict the draft proposed improvements associated with the CEP. The CEP expansion includes relocating the UPS and Cargo City facilities, adding a parallel runway and multiple taxiways. The CEP will also include the elimination of Tinicum Island Road from its current location. In order to eliminate conflict with the airport to the greatest extent possible, the route was developed by recognizing proposed operations and evaluating proposed improvements, while also taking care to minimize known impacts. While no detailed CEP schedules have been provided, the Project must reflect known USACE dredging activities. Resource Report, Appendix 1B provides additional detailed PHL meeting coordination minutes.

### 8.2.2 Existing Residences and Commercial Areas

No existing residences or residential areas are located within 50-feet of the edge of the construction right-of-way; therefore no residential landowners will be affected by construction

activities. Although there are no residences in close proximity of the project area, local traffic may be temporarily impacted during certain construction activities. All construction activities which will be in close proximity to a public roadway, or otherwise impacting a public roadway, will be in accordance with the requirements of Tinicum Township and Pennsylvania Department of Transportation (PennDOT) “Publication 213 – Temporary Traffic Control Guidelines”. This includes using the proper signage, temporary traffic control devices (e.g. barriers, cones, etc.), pavement markings, and detour plans to ensure the public is protected from all site activities.

### **8.3 PUBLIC LAND, RECREATION AND OTHER DESIGNATED AREAS**

#### **8.3.1 Public or Conservation Land**

No public or conservation lands will be crossed by the right-of-way.

#### **8.3.2 Natural, Recreational or Scenic Areas**

No natural, recreational or scenic areas will be crossed by the right-of-way. The segment of the Delaware River to be crossed by HDD is not classified as Wild and Scenic.

Coastal zone boundaries for each state were identified from the National Oceanic and Atmospheric Administration (“NOAA”) and Coastal Zone Resource Management Program website, and from the Coastal Zone Management programs and maps provided by NJDEP and PADEP state programs. The Coastal Management area within Pennsylvania includes the 57-mile stretch of coast line along the Delaware Estuary. New Jersey’s coastal zone is more complex, encompasses approximately 1,800 miles of tidal coastline and ranges in width from 100 feet to 24 miles inland. Coastal Zone Management Areas will be crossed in both states and therefore will require federal consistency determinations.

Federal Consistency is the Federal Coastal Zone Management Act (CZMA) requirement that federal actions (regardless of location) that have reasonably foreseeable effects on any land or water use or natural resource of the coastal zone (also referred to as coastal uses or resources, or coastal effects) must be consistent with the enforceable policies of a coastal state’s federally approved coastal management program, before they can occur.

#### **8.3.4 Agency and Landowner Consultation**

PNGPC will obtain all applicable permits and licenses required for this project. Resource Report 1, Table 1.6-1 provides a list of permits and approvals required for federal, state and local agencies. Agency consultation response letters to date are included in Appendix 8B of this report. PNGPC will include copies of all relevant permits and approvals in the construction bid packages and contracts. The contractor will be required to be familiar with all permits and approvals obtained by PNGPC, and will be required to uphold all mitigation and restoration conditions of each permit. PNGPC will work with the selected contractor(s) to establish and attend requested pre-construction meetings by agencies.

### **8.3.5 Impact and Mitigation**

Temporary impacts to land uses will be restored accordingly based upon required restoration techniques. No mitigation is required for proposed project impacts.

## **8.4 VISUAL RESOURCES**

Construction activities will occur within or adjacent to the maintained portion of an existing utility corridor. For this reason, impacts to land use will not have significant impact on the existing visual or aesthetic quality of the local landscape. At the same time, aboveground facilities will be constructed adjacent to or within existing facilities which will allow the aboveground facilities to readily blend into the existing industrialized landscape. Project workspaces are not located within visually sensitive areas, such as in the vicinity of a residential neighborhood or development, scenic roads, or rivers.

Most visual and aesthetic impacts associated with the Project will be limited to the period of active construction. Visual impacts will be associated with vegetation clearing and the presence of construction equipment or materials within the construction workspace. Aesthetic impacts may include elevated noise and dust associated with the use of construction equipment. Given the absence of nearby residences or businesses, such impacts will be of minor concern. Dust minimization measures will primarily involve the use of water trucks to dampen the construction workspace under dry-dusty conditions. Special consideration will be given to roadway areas, where clear visibility is essential.

## **8.5 REFERENCES**

Federal Energy Regulatory Commission; Office of Energy Projects. August 2002. Guidance Manual For Environmental Report Preparation.

Map Data: Google, Landsat Image. Accessed September 25, 2015.

National Oceanic and Atmospheric Association. Office for Coastal Management  
Site visited September 25, 2015. <http://coast.noaa.gov/czm/mystate/?redirect=301ocm>

Philadelphia International Airport, Capacity Enhancement Program Figures. 2008

United States Department of the Interior (USGS). Bridgeport, NJ-PA (2014); Lansdowne, PA (2013); Philadelphia, PA-NJ (2013); Woodbury, NJ-PA (2014).



## APPENDIX 8A



0 1,000 2,000  
Feet  
SCALE: 1" = 2,000'

- Limit of Disturbance (LOD)
- 24" Proposed Centerline
- 12" Proposed Centerline
- Existing Pipeline (Removed)
- Existing Pipeline (Abandoned in Place)



**PBF - DELAWARE RIVER CROSSING**  
*PAULSBORO NATURAL GAS*  
*PIPELINE COMPANY*  
**PROJECT LOCATION MAP**  
 (AERIAL)

SOURCE: Esri ArcGIS Web Mapping Service (World Imagery)

CREATED BY: STV Energy Services, Inc.



Rev Date: 11/5/2015

## APPENDIX 8B

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**BUREAU OF FORESTRY**

June 23, 2015

**PNDI Number: 20150428496025, 20150428496027,  
20150428496028**

**Peter Gaskins**  
**Paulsboro Refining Company LLC**  
800 Billingsport Road  
Paulsboro, NJ 08066  
Email: peter.gaskins@stvinc.com (hard copy will not follow)

**Re: Delaware River Crossing Replacement Project (Options 1, 2, 3a)**  
**Tinicum Township, Delaware County, PA**

Dear Mr. Gaskins,

Thank you for the submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Numbers 20150428496025, 20150428496027, and 20150428496028 for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

**No Impact Anticipated**

PNDI records indicate species or resources under DCNR's jurisdiction are located in the vicinity of the project. However, based on the information you submitted concerning the nature of the project, the immediate location, and our detailed resource information, DCNR has determined that no impact is likely. No further coordination with our agency is needed for this project.

This response represents the most up-to-date review of the PNDI data files and is valid for two (2) years only. If project plans change or more information on listed or proposed species becomes available, our determination may be reconsidered. Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map). As a reminder, this finding applies to potential impacts under DCNR's jurisdiction only. Visit the PNHP website for directions on contacting the Commonwealth's other resource agencies for environmental review.

**Should you have any questions or concerns, please contact Jason Ryndock, Ecological Information Specialist, by phone (717-705-2822) or via email (c-jryndock@pa.gov).**

Sincerely



Greg Podniesinski, Section Chief  
Natural Heritage Section

## BUREAU OF FORESTRY

June 23, 2015

PNDI Number: 20150428496029

**Peter Gaskins**  
**Paulsboro Refining Company LLC**  
800 Billingsport Road  
Paulsboro, NJ 08066  
Email: peter.gaskins@stvinc.com (hard copy will not follow)

**Re: Delaware River Crossing Replacement Project (Option 3)**  
**Tinicum Township, Delaware County, PA**

Dear Mr. Gaskins,

Thank you for the submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Number 20150428496029 for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

**Potential Impact Anticipated**

PNDI records indicate species or resources under DCNR's jurisdiction are located in the project vicinity. Based on a detailed PNDI review, DCNR determined potential impacts to the following threatened or endangered species or species of special concern.

Scientific Name	Common Name	PA Current Status	PA Proposed Status
<i>Aristida dichotoma</i> var. <i>curtisii</i>	Three-awned Grass	Undetermined	Endangered
<i>Pluchea odorata</i>	Shrubby Camphor-weed	Undetermined	Endangered
<i>Triplasis purpurea</i>	Purple Sandgrass	Endangered	Endangered
<i>Quercus phellos</i>	Willow Oak	Endangered	Endangered

**Survey Request**

DCNR requests a survey for the following species:

- ***Aristida dichotoma* var. *curtisii* (Three-awned Grass):** locally documented in a sandy area along abandoned railroad tracks; prefers dry open or sterile soil; flowers August – early October
  - ***Pluchea odorata* (Shrubby Camphor-weed):** locally documented in moist waste ground; prefers tidal mudflats, wet ditches, and railroad ballast; flowers August – October
  - ***Triplasis purpurea* (Purple Sandgrass):** locally documented on dry sandy railroad track edges; prefers dry open sandy soils; flowers August – September
  - ***Quercus phellos* (Willow Oak):** locally documented in a vacant lot on dredge spoils; prefers moist to wet woods
- ✓ A survey for the above species should be conducted by a qualified botanist *at the appropriate time of year and then submitted to our office for review*. **Your botanist should carefully review the new DCNR Botanical Survey Protocols available at <http://www.gis.dcnr.state.pa.us/hgis-er/Login.aspx>. These protocols are recommended to ensure that the all necessary information is collected and that survey reports are prepared properly. It is the expectation of DCNR that these protocols will be followed when conducting surveys for species under our jurisdiction.**

conserve

sustain

enjoy

P.O. Box 8552, Harrisburg, PA 17015-8552 717-787-3444 (fax) 717-772-0271



- ✓ Your botanist should *fill out the field survey form while performing their survey*: <http://www.gis.dcnr.state.pa.us/hgis-er/hgis/2012%20DCNR%20Field%20Survey%20Form.pdf>. Contact our office prior to the survey for detailed information about the species, or for a list of qualified surveyors.
- ✓ Any target and non-target state-listed species found during the site visit should be reported to our office. Mitigation measures and monitoring may be requested if species or communities of special concern are found on or adjacent to site.
- ✓ If the land type(s) does not exist on site, a survey may not be necessary; please submit a habitat assessment report which describes the current land cover, habitat types, and species found on site.

#### Conservation Measure—Voluntary Action

The following species not listed in PA, but is under review due to suspected rarity. Therefore, it is not a target for a survey. However, because of its ecological significance, please note if this species is identified during the required survey.

- ***Eupatorium rotundifolium* (Roundleaf Thoroughwort)**: locally documented in dredge spoils; prefers sandy or clayey fields and open thickets; flowers late June – October

This response represents the most up-to-date review of the PNDI data files and is valid for two (2) years only. If project plans change or more information on listed or proposed species becomes available, our determination may be reconsidered. Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an “Update” (including an updated PNDI receipt, project narrative and accurate map). As a reminder, this finding applies to potential impacts under DCNR’s jurisdiction only. Visit the PNHP website for directions on contacting the Commonwealth’s other resource agencies for environmental review.

**Should you have any questions or concerns, please contact Jason Ryndock, Ecological Information Specialist, by phone (717-705-2822) or via email ([c-jryndock@pa.gov](mailto:c-jryndock@pa.gov)).**

Sincerely



Greg Podnieszinski, Section Chief  
Natural Heritage Section

Mail Code 501-04  
Department of Environmental Protection  
State Forestry Services  
Office of Natural Lands Management  
P.O. Box 420 Trenton, New Jersey 08625-0420  
(609) 984-1339 Fax: (609) 984-1427

# ***Invoice***

		Date	Invoice #
		6/16/2015	7765
Bill to: STV Energy Services, Inc. 205 West Welsh Drive Douglassville, PA 19518		Make check payable to: <b>Office of Natural Lands Management</b> And forward with a copy of this statement to: <b>Mail Code 501-04</b> <b>Office of Natural Lands Management</b> <b>P.O. Box 420 Trenton, New Jersey 08625-0420</b>	
Quantity (hrs.)	Description	Rate (per hr.)	Amount
1	Charge for Natural Heritage Database search for rare species and ecological communities locational information. Project: 15-3907573-7765	\$ 70.00	\$ 70.00
Peter Gaskins Project Name: PBF - Delaware River Crossing		<b>Total</b>	\$ 70.00



## State of New Jersey

CHRIS CHRISTIE  
*Governor*

KIM GUADAGNO  
*Lt. Governor*

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
State Forestry Services  
Mail Code 501-04  
ONLM -Natural Heritage Program  
P.O. Box 420  
Trenton, NJ 08625-0420  
Tel. #609-984-1339  
Fax. #609-984-1427

BOB MARTIN  
*Commissioner*

June 16, 2015

Peter Gaskins  
STV Energy Services, Inc.  
205 West Welsh Drive  
Douglassville, PA 19518

Re: PBF - Delaware River Crossing

Dear Mr. Gaskins:

Thank you for your data request regarding rare species information for the above referenced project site in Paulsboro Borough and Greenwich Township, Gloucester County.

Searches of the Natural Heritage Database and the Landscape Project (Version 3.1) are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the topographic map(s) submitted with the Request for Data into our Geographic Information System. We do not typically verify that your project bounds are accurate, or check them against other sources.

We have checked the Landscape Project habitat mapping and the Biotics Database for occurrences of any rare wildlife species or wildlife habitat on the referenced site. The Natural Heritage Database was searched for occurrences of rare plant species or ecological communities that may be on the project site. Please refer to Table 1 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented on site. A detailed report is provided for each category coded as 'Yes' in Table 1.

We have also checked the Landscape Project habitat mapping and Biotics Database for occurrences of rare wildlife species or wildlife habitat in the immediate vicinity (within ¼ mile) of the referenced site. Additionally, the Natural Heritage Database was checked for occurrences of rare plant species or ecological communities within ¼ mile of the site. Please refer to Table 2 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented within the immediate vicinity of the site. Detailed reports are provided for all categories coded as 'Yes' in Table 2. These reports may include species that have also been documented on the project site.

The Natural Heritage Program reviews its data periodically to identify priority sites for natural diversity in the State. Included as priority sites are some of the State's best habitats for rare and endangered species and ecological communities. Please refer to Tables 1 and 2 (attached) to determine if any priority sites are located on or in the vicinity of the site.

A list of rare plant species and ecological communities that have been documented from the project site, referenced above, can be downloaded from <http://www.state.nj.us/dep/parksandforests/natural/heritage/countylist.html>. If suitable habitat is present at the project site, the species in that list have potential to be present.

Status and rank codes used in the tables and lists are defined in EXPLANATION OF CODES USED IN NATURAL HERITAGE REPORTS, which can be downloaded from [http://www.state.nj.us/dep/parksandforests/natural/heritage/nhpcodes\\_2010.pdf](http://www.state.nj.us/dep/parksandforests/natural/heritage/nhpcodes_2010.pdf).

If you have questions concerning the wildlife records or wildlife species mentioned in this response, we recommend that you visit the interactive NJ-GeoWeb website at the following URL, <http://www.state.nj.us/dep/gis/geoweb splash.htm> or contact the Division of Fish and Wildlife, Endangered and Nongame Species Program at (609) 292-9400.

NHP File No. 15-3907573-7765



PLEASE SEE 'CAUTIONS AND RESTRICTIONS ON NHP DATA', which can be downloaded from <http://www.state.nj.us/dep/parksandforests/natural/heritage/newcaution2008.pdf>.

Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,

A handwritten signature in blue ink, appearing to read 'R. Cartica', with a horizontal line extending to the right.

Robert J. Cartica  
Administrator

c: NHP File No. 15-3907573-7765

***Table 1: On Site Data Request Search Results (7 Possible Reports)***

<b><u>Report Name</u></b>	<b><u>Included</u></b>	<b><u>Number of Pages</u></b>
1. Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
2. On or In the Immediate Vicinity of the Project Site Based on Search of the Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
3. Natural Heritage Priority Sites On Site	No	0 pages included
4. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.1 Species Based Patches	Yes	1 page(s) included
5. Vernal Pool Habitat on the Project Site Based on Search of Landscape Project 3.1	No	0 pages included
6. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.1 Stream Habitat File	No	0 pages included
7. Other Animal Species On the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	Yes	1 page(s) included

**Rare Wildlife Species or Wildlife Habitat on the Project  
Site Based on Search of  
Landscape Project 3.1 Species Based Patches**

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Strank
<i>Aves</i>	Bald Eagle	Haliaeetus leucocephalus	Foraging	4	NA	State Endangered	G5	S1B,S2N
	Great Blue Heron	Ardea herodias	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Osprey	Pandion haliaetus	Foraging	3	NA	State Threatened	G5	S2B
<i>Osteichthyes</i>	Shortnose Sturgeon	Acipenser brevirostrum	Migration Corridor - Adult Sighting	5	Federally Listed Endangered	State Endangered	G3	S1

Other Animal Species  
On the Project Site Based on  
Additional Species Tracked by  
Endangered and Nongame Species Program

Scientific Name	Common Name	Federal Protection Status	State Protection Status	Grank	Srank
<i>Invertebrate Animals</i>					
<i>Faronta rubripennis</i>	Pink Streak			G3G4	S3
<i>Macrochilo louisiana</i>	A Noctuid Moth			G4	S2S3
<i>Macrochilo santerivalis</i>	A Noctuid Moth			G3G4	S1S3
Total number of records:		3			

***Table 2: Vicinity Data Request Search Results (6 possible reports)***

<b><u>Report Name</u></b>	<b><u>Included</u></b>	<b><u>Number of Pages</u></b>
1. Immediate Vicinity of the Project Site Based on Search of Natural Heritage Database Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
2. Natural Heritage Priority Sites within the Vicinity	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.1 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat In the Immediate Vicinity of Project Site Based on Search of Landscape Project 3.1	No	0 pages included
5. Rare Wildlife Species or Wildlife Habitat In the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.1 Stream Habitat File	No	0 pages included
6. Other Animal Species In the Immediate Vicinity of the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	Yes	1 page(s) included

**Rare Wildlife Species or Wildlife Habitat Within the  
Immediate Vicinity of the Project Site Based on Search of  
Landscape Project 3.1 Species Based Patches**

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
<i>Aves</i>								
	Bald Eagle	Haliaeetus leucocephalus	Foraging	4	NA	State Endangered	G5	S1B,S2N
	Bald Eagle	Haliaeetus leucocephalus	Nest	4	NA	State Endangered	G5	S1B,S2N
	Great Blue Heron	Ardea herodias	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Osprey	Pandion haliaetus	Foraging	3	NA	State Threatened	G5	S2B
<i>Osteichthyes</i>								
	Shortnose Sturgeon	Acipenser brevirostrum	Migration Corridor - Adult Sighting	5	Federally Listed Endangered	State Endangered	G3	S1

Other Animal Species  
In the Immediate Vicinity of the Project Site Based on  
Additional Species Tracked by  
Endangered and Nongame Species Program

Scientific Name	Common Name	Federal Protection Status	State Protection Status	Grank	Srank
<i>Invertebrate Animals</i>					
<i>Farontia rubripennis</i>	Pink Streak			G3G4	S3
<i>Macrochilo louisiana</i>	A Noctuid Moth			G4	S2S3
<i>Macrochilo santerivalis</i>	A Noctuid Moth			G3G4	S1S3
Total number of records:	3				

**From:** Julie Crocker - NOAA Federal [julie.crocker@noaa.gov]  
**Sent:** Friday, May 29, 2015 9:32 AM  
**To:** Gaskins, Peter M.  
**Subject:** Paulsboro Pipeline Relocation

**Follow Up Flag:** Flag for follow up  
**Flag Status:** Flagged

Mr. Gaskins,

This is in response to your May 4 letter requesting information on ESA listed species located near the proposed pipeline relocation project. The following species occur in the Delaware River near the project location:

- shortnose sturgeon (endangered)
- Atlantic sturgeon (four Distinct Population Segments listed as endangered: New York Bight, Chesapeake Bay, Carolina, South Atlantic; one DPS listed as threatened: Gulf of Maine).

The use of a directional drill would minimize the potential for sturgeon to be exposed to effects of the proposed action. If shoreline work is required, we would recommend that it occur behind a full length weighted turbidity curtain and/or a cofferdam.

If the proposed action is being authorized/permitted, funded or carried out by a Federal agency, a consultation, pursuant to section 7 of the ESA, may be necessary. If you, in cooperation with the lead Federal agency, determine the proposed action may affect listed species, the lead Federal agency, or their designated non-Federal representative, is responsible for requesting section 7 consultation. The Federal agency (or their designated non-Federal representative) would submit their determination along with justification for their determination and a request for concurrence, to the attention of the ESA Section 7 Coordinator, NMFS Northeast Regional Office, Protected Resources Division, 55 Great Republic Drive, Gloucester, MA 01930. After reviewing this information, we would then be able to conduct a consultation under section 7 of the ESA.

Please let me know if you have any questions.

Julie Crocker

--

Julie Crocker  
Protected Resources Division  
**Greater Atlantic Regional Fisheries Office**  
**(formerly Northeast Regional Office)**  
National Marine Fisheries Service



55 Great Republic Drive  
Gloucester, MA 01930  
(978)282-8480



## Pennsylvania Fish & Boat Commission

---

### Division of Environmental Services

Natural Gas Section  
450 Robinson Lane  
Bellefonte, PA 16823

June 8, 2015

#### IN REPLY REFER TO

SIR# 44372

STV Energy Services, Inc.  
Peter Gaskins  
205 W. Welsh Drive  
Douglassville, Pennsylvania 19518

**RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species  
PNDI Search No. 20150428496025, 20150428496027, 20150428496028, 20150428496029  
Delaware River Crossing Replacement Project  
DELAWARE County: Tinicum Township**

Dear Peter Gaskins:

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search “potential conflict” or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish & Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish & Boat Code (Chapter 75), or the Wildlife Code.

I have examined the map accompanying your recent correspondence, which shows the location of the four options being considered for the above-referenced project. Based on records maintained in the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files, the following rare or protected species are known from the vicinity of the project site:

Common Name	Scientific Name	PA Status
Eastern redbelly turtle	<i>Pseudemys rubriventris</i>	threatened
Southern leopard frog	<i>Lithobates utricularius</i>	endangered
Banded sunfish	<i>Enneacanthus obesus</i>	endangered
Atlantic Sturgeon	<i>Acipenser oxyrinchus</i>	endangered
Eastern mudminnow	<i>Umbra pygmaea</i>	candidate

We have reviewed the results of surveys for species of concern that have been conducted within the Philadelphia Airport property over the past decade. Given the status and sensitivity of these species

#### Our Mission:

[www.fish.state.pa.us](http://www.fish.state.pa.us)

*To protect, conserve and enhance the Commonwealth's aquatic resources and provide fishing and boating opportunities.*

of concern, we will need additional information to assess the project's potential for adverse impacts to these species. In order for us to continue our project review, please provide us with the following information, **once a route is determined: a more detailed project plan showing the areas of disturbance with respect to the airport layout and nearby wetlands, a description of the proposed work, wetland acreage and waterways to be impacted (direct and indirect), habitat descriptions, and on-site color photographs (keyed to a site map).** Pending the review of this information, further consultation may be needed.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

**If you have any questions regarding this review, please contact Heather A. Smiles at 814-359-5194 and refer to the SIR # 44372.** Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

A handwritten signature in dark ink that reads "Heather Smiles". The signature is written in a cursive, flowing style.

Heather A. Smiles, Chief  
Natural Gas Section

HAS/dn



Division of Environmental  
Planning and Habitat  
Protection  
717-783-5957

COMMONWEALTH OF PENNSYLVANIA  
**Pennsylvania Game Commission**

2001 ELMERTON AVENUE  
HARRISBURG, PA 17110-9797

*"To manage all wild birds, mammals and their habitats  
for current and future generations."*

**ADMINISTRATIVE BUREAUS:**

ADMINISTRATION.....717-787-5670  
HUMAN RESOURCES.....717-787-7836  
FISCAL MANAGEMENT.....717-787-7314  
CONTRACTS AND  
PROCUREMENT.....717-787-6594  
LICENSING.....717-787-2084  
OFFICE SERVICES.....717-787-2116  
WILDLIFE MANAGEMENT.....717-787-5529  
INFORMATION & EDUCATION.....717-787-6286  
WILDLIFE PROTECTION.....717-783-6526  
WILDLIFE HABITAT  
MANAGEMENT.....717-787-6818  
REAL ESTATE DIVISION.....717-787-6568  
AUTOMATED TECHNOLOGY  
SERVICES.....717-787-4076

[www.pgc.state.pa.us](http://www.pgc.state.pa.us)

May 22, 2015

**PGC ID Number: 201505200601**

Peter Gaskins  
STV Energy Services  
205 West Welsh Drive  
Douglassville, PA 19158  
peter.gaskins@stvinc.com

Re: Paulsboro Natural Gas Pipeline Company – Delaware River Crossing Replacement Project  
PNDI Numbers: 20150428496025, 20150428496027, 20150428496028, & 20150428496029  
Tinicum Township, Delaware County, PA

Dear Mr. Gaskins,

Thank you for submitting the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Numbers 20150428496025, 20150428496027, 20150428496028, & 20150428496029 for review. The Pennsylvania Game Commission (PGC) screened each option of this project for potential impacts to species and resources of concern under PGC responsibility, which includes birds and mammals only.

*PBF Option 1, PBF Option 2, & PBF Option 3A*

**No Impact Anticipated – PNDI Species**

PNDI records indicate species or resources of concern are located in the vicinity of the project. However, based on the information you submitted concerning the nature of the project, the immediate location, and our detailed resource information, the PGC has determined that no impact is likely. Therefore, no further PNDI coordination with the PGC will be necessary for this project at this time.

*PBF Option 3*

**Potential Impact Anticipated**

PNDI records indicate species or resources of concern are located in the vicinity of the project. The PGC has received and thoroughly reviewed the information that you provided to this office as well as PNDI data, and has determined that potential impacts to threatened, endangered, and species of special concern may be associated with your project. Therefore, additional measures are necessary to avoid potential impacts to the species listed below:

Scientific Name	Common Name	PA Status
<i>Pandion haliaetus</i>	Osprey	THREATENED

### Next Steps

The PGC has identified a portion of Option 3 (see attached *PGC Osprey Restriction Map*) where ospreys are known to nest and may be impacted by the proposed project. The PGC is requesting the following seasonal restriction for this portion of the Option 3:

- No activities related to this project shall occur within the Osprey Restriction Area identified on the attached *PGC Osprey Restriction Map* during the nesting season, Mach 25 through July 31. All project related activities shall be completed in this area between August 1 and March 24.

This response represents the most up-to-date summary of the PNDI data files and is valid for two (2) years from the date of this letter. An absence of recorded information does not necessarily imply actual conditions on site. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered.

Should the proposed work continue beyond the period covered by this letter, please resubmit the project to the PGC at the following address as an "Update" (including an updated PNDI receipt, project narrative and accurate map):

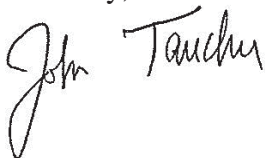
PA Game Commission  
Bureau of Wildlife Habitat Management  
Division of Environmental Planning & Habitat Protection  
2001 Elmerton Avenue  
Harrisburg, PA 17110-9797

If the proposed work has not changed and no additional information concerning listed species is found, the project will be cleared for PNDI requirements by the PGC for an additional 2 years.

This finding applies to impacts to birds and mammals only. To complete your review of state and federally-listed threatened and endangered species and species of special concern, please be sure that the U.S. Fish and Wildlife Service, the PA Department of Conservation and Natural Resources, and/or the PA Fish and Boat Commission have been contacted regarding this project as directed by the online PNDI ER Tool found at [www.naturalheritage.state.pa.us](http://www.naturalheritage.state.pa.us).

Please be sure to include the above-referenced PGC ID Number on any future correspondence with the PGC regarding this project.

Sincerely,



John Taucher

Division of Environmental Planning & Habitat Protection  
Bureau of Wildlife Habitat Management  
Phone: 717-787-4250, Extension 3632  
Fax: 717-787-6957  
E-mail: [jotaucher@pa.gov](mailto:jotaucher@pa.gov)

A PNHP Partner



JWT/jwt

Attachment:

PGC Osprey Restriction Map

cc: Metz  
Morgan  
Dunn  
Brauning  
Gross  
Barber  
Librandi Mumma  
H:\OIL&GAS\_PNDI\_Reviews\Southeast Region

Paulsboro Natural Gas Pipeline Company - Delaware River Crossing Replacement Project  
PNDI # 201505200601  
Option 3 PGC Osprey Restriction Map





# Paulsboro Natural Gas Pipeline Company (PBF) Delaware River Crossing Replacement Project

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## *IPaC Trust Resource Report*

Generated August 26, 2015 07:53 AM MDT





US Fish &amp; Wildlife Service

# IPaC Trust Resource Report



## Project Description

**NAME**

Paulsboro Natural Gas Pipeline  
Company (PBF) Delaware River  
Crossing Replacement Project

**PROJECT CODE**

ME5KC-LCSGB-BCDO4-2ECEO-3DI26E

**LOCATION**

New Jersey and Pennsylvania

**DESCRIPTION**

PBF owns a 8" pipeline across the Delaware River (DR) which connects to a refinery in Paulsboro, NJ. This pipeline conveys natural gas from a Spectra Energy line northwest of the Phil. Int. Airport to the Paulsboro Refinery. During recent USACE dredging operations in the DR, a contractor for USACE struck and damaged the 8-inch pipeline. PBF was successful in containing the leak; however, they need to relocate the pipeline to accommodate the widening of the shipping channel.



## U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

**New Jersey Ecological Services Field Office**

927 North Main Street, Building D  
Pleasantville, NJ 08232-1454  
(609) 646-9310

**Pennsylvania Ecological Services Field Office**

315 South Allen Street, Suite 322  
State College, PA 16801-4850  
(814) 234-4090

# Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the [Endangered Species Program](#) and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under [Section 7](#) of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an Official Species List from the regulatory documents section.

## Birds

### Red Knot *Calidris canutus rufa*

Threatened

MANAGED BY

New Jersey Ecological Services Field Office

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0DM>

## Mammals

### Indiana Bat *Myotis sodalis*

Endangered

MANAGED BY

Pennsylvania Ecological Services Field Office

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=A000>

### Northern Long-eared Bat *Myotis septentrionalis*

Threatened

MANAGED BY

New Jersey Ecological Services Field Office

Pennsylvania Ecological Services Field Office

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=A0JE>

## Reptiles

### **Bog (=muhlenberg) Turtle** *Clemmys muhlenbergii*

**Threatened**

MANAGED BY

Pennsylvania Ecological Services Field Office

New Jersey Ecological Services Field Office

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=C048>

## Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

# Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

<b>American Oystercatcher</b> <i>Haematopus palliatus</i>	<b>Bird of conservation concern</b>
Year-round <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0G8">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0G8</a>	
<b>American Bittern</b> <i>Botaurus lentiginosus</i>	<b>Bird of conservation concern</b>
Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0F3">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0F3</a>	
<b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i>	<b>Bird of conservation concern</b>
Year-round <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B008">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B008</a>	
<b>Black Rail</b> <i>Laterallus jamaicensis</i>	<b>Bird of conservation concern</b>
Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B09A">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B09A</a>	
<b>Black-billed Cuckoo</b> <i>Coccyzus erythrophthalmus</i>	<b>Bird of conservation concern</b>
Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0HI">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0HI</a>	
<b>Blue-winged Warbler</b> <i>Vermivora pinus</i>	<b>Bird of conservation concern</b>
Season: Breeding	
<b>Cerulean Warbler</b> <i>Dendroica cerulea</i>	<b>Bird of conservation concern</b>
Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B09I">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B09I</a>	
<b>Fox Sparrow</b> <i>Passerella iliaca</i>	<b>Bird of conservation concern</b>
Season: Wintering	
<b>Kentucky Warbler</b> <i>Oporornis formosus</i>	<b>Bird of conservation concern</b>
Season: Breeding	
<b>Least Bittern</b> <i>Ixobrychus exilis</i>	<b>Bird of conservation concern</b>
Season: Breeding	
<b>Peregrine Falcon</b> <i>Falco peregrinus</i>	<b>Bird of conservation concern</b>
Season: Wintering <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0FU">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0FU</a>	
<b>Pied-billed Grebe</b> <i>Podilymbus podiceps</i>	<b>Bird of conservation concern</b>
Year-round	

<b>Prairie Warbler</b> <i>Dendroica discolor</i> Season: Breeding	<b>Bird of conservation concern</b>
<b>Prothonotary Warbler</b> <i>Protonotaria citrea</i> Season: Breeding	<b>Bird of conservation concern</b>
<b>Purple Sandpiper</b> <i>Calidris maritima</i> Season: Wintering	<b>Bird of conservation concern</b>
<b>Red Knot</b> <i>Calidris canutus rufa</i> Season: Wintering <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DM">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DM</a>	<b>Bird of conservation concern</b>
<b>Red-headed Woodpecker</b> <i>Melanerpes erythrocephalus</i> Year-round	<b>Bird of conservation concern</b>
<b>Rusty Blackbird</b> <i>Euphagus carolinus</i> Season: Wintering	<b>Bird of conservation concern</b>
<b>Saltmarsh Sparrow</b> <i>Ammodramus caudacutus</i> Year-round	<b>Bird of conservation concern</b>
<b>Short-eared Owl</b> <i>Asio flammeus</i> Season: Wintering <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD</a>	<b>Bird of conservation concern</b>
<b>Snowy Egret</b> <i>Egretta thula</i> Season: Breeding	<b>Bird of conservation concern</b>
<b>Upland Sandpiper</b> <i>Bartramia longicauda</i> Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HC">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HC</a>	<b>Bird of conservation concern</b>
<b>Wood Thrush</b> <i>Hylocichla mustelina</i> Season: Breeding	<b>Bird of conservation concern</b>
<b>Worm Eating Warbler</b> <i>Helmitheros vermivorum</i> Season: Breeding	<b>Bird of conservation concern</b>

## Refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

# Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

## DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

## DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

## DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

## Freshwater Emergent Wetland

**PEM1/UBFh**

48.7 acres

## Freshwater Pond

**PUBHx**

3.52 acres

## Riverine

**R1UBV**

2050.0 acres

**PAULSBORO NATURAL GAS PIPELINE  
COMPANY LLC**

**FERC  
RESOURCE REPORT 9  
AIR AND NOISE QUALITY**

**PROPOSED DELAWARE RIVER  
PIPELINE RELOCATION PROJECT**

NOVEMBER 2015

*Prepared by:*

STV Energy Services, Inc.  
205 West Welsh Drive  
Douglassville, PA 19518  
STV Project No.: 38-17378

*Prepared for:*

Paulsboro Natural Gas Pipeline  
Company LLC  
800 Billingsport Road  
Paulsboro NJ 08066



SUMMARY OF FILING INFORMATION		
	INFORMATION	DATA SOURCES <sup>1</sup>
<b>Minimum Requirements to Avoid Rejection</b>		
1.	Describe existing air quality in the vicinity of the project. (§ 380.12(k)(1)) <ul style="list-style-type: none"> <li>Identify criteria pollutants that may be emitted above EPA-identified significance levels.</li> </ul>	9.2.1, Existing Conditions
2.	Quantify the existing noise levels (day-night sound level ( $L_{dn}$ ) and other applicable noise parameters) at noise sensitive areas and at other areas covered by relevant state and local noise ordinances. (§ 380.12(k)(2)) <ul style="list-style-type: none"> <li>If new compressor station sites are proposed, measure or estimate the existing ambient sound environment based on current land uses and activities.</li> <li>For existing compressor stations (operated at full load), include the results of a sound level survey at the site property line and nearby noise-sensitive areas.</li> <li>Include a plot plan that identifies the locations and duration of noise measurements.</li> <li>All surveys must identify the time of day, weather conditions, wind speed and direction, engine load, and other noise sources present during each measurement.</li> </ul>	9.3.2, Existing Conditions
		N/A
		N/A
		N/A
		N/A
3.	Quantify existing and proposed emissions of compressor equipment, plus construction emissions, including nitrogen oxides ( $NO_x$ ) and carbon monoxide (CO), and the basis for these calculations. Summarize anticipated air quality impacts for the project. (§ 380.12(k)(3)) <ul style="list-style-type: none"> <li>Provide the emission rate of <math>NO_x</math> from existing and proposed facilities, expressed in pounds per hour and tons per year for maximum operating conditions, include supporting calculations, emission factors, fuel consumption rate, and annual hours of operation.</li> </ul>	9.2.3, Air Quality Impacts
		N/A
4.	Describe the existing compressor units at each station where new, additional, or modified compressor units are proposed, including the manufacturer, model number, and horsepower of the compressor units. For proposed new, additional, or modified compressor units include the horsepower, type, and energy source. (§ 380.12(k)(4))	N/A
5.	Identify any nearby noise-sensitive area by distance and direction from the proposed compressor unit building/enclosure. (§ 380.12(k)(4))	N/A
6.	Identify any applicable state or local noise regulations. (§ 380.12(k)(4)) <ul style="list-style-type: none"> <li>Specify how the facility will meet the regulations.</li> </ul>	9.3.3, Applicable Noise Regulations
		9.3.3, Applicable Noise Regulations
7.	Calculate the noise impact at noise-sensitive areas of the proposed compressor unit modifications or additions, specifying how the impact was calculated, including manufacturer's data and proposed noise control equipment. (§ 380.12(k)(4))	N/A
<b>Additional Information Often Missing and Resulting in Data Requests</b>		
	Provide copies of application for state air permits and agency determinations, as appropriate.	N/A
	For major sources of air emissions (as defined by the EPA), provide copies of applications for permits to construct (and operate, if applicable) or for applicability determinations under regulations for the prevention of significant air quality deterioration and subsequent determinations.	N/A
	Describe measures and manufacturer's specifications for equipment proposed to mitigate impact to air and noise quality, including emission control systems, installation of filters, mufflers, or insulation of piping and building, and orientation of equipment away from noise-sensitive areas.	N/A

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### **APPENDICES**

- Appendix 9A – Noise Quality

## **MASTER LIST OF ACRONYMS**

AASHTO	American Association of State Highway Transportation Officials
ACHP	Advisory Council on Historic Preservation
AERC	Airport Emission Reduction Credit
APE	Area of Potential Effects
AREMA	American Railway Engineering Maintenance-of-Way Association
ARO	Abrasion Resistance Overlay
ASME	American Society of Mechanical Engineers
BMP	Best Management Practice
BOP	Delaware Valley Safety Council Basic Orientation Plus
BPL	Buckeye Partners L.P.
BTU	British Thermal Unit
CEP	Capacity Enhancement Program
CFR	Code of Federal Regulations
CI	Chief Inspector
CP	Cathodic Protection
CRM	Cultural Resource Manager
CRGIS	Cultural Resource Geographic Information Systems
CWA	Clean Water Act
CWF	Cold Water Fishes
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program
DCNR	Pennsylvania Department of Conservation and Natural Resources
DCCD	Delaware County Conservation District
DBH	Diameter at Breast Height
DOT	Department of Transportation
DTH	Dekatherm
E&S	Erosion and Sedimentation Control
E&SCP	Erosion and Sedimentation Control Plan
EDR	Environmental Data Resources
EFH	Essential Fish Habitat
EGM	Electronic Gas Measurement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESCGP-2	Erosion and Sediment Control General Permit – 2 (for Oil and Gas Activities)
EV	Exceptional Value
FAA	Federal Aviation Administration
FBE	Fusion Bonded Epoxy
FEMA	Federal Energy Management Agency
FERC	Federal Energy Regulatory Commission
FIRM	Flood Insurance Rate Maps
FWCA	Fish & Wildlife Coordination Act
GCSCD	Gloucester County Soil Conservation District
HAP	Hazardous Air Pollutant
HDD	Horizontal Directional Drill
HQ	High Quality
IMP	Integrity Management Program
IPaC	Information, Planning, & Conservation
LOD	Limit of Disturbance
MBTA	Migratory Bird Treaty Act
MF	Migratory Fishes

MMSCFD	Million Standard Cubic Feet per Day
MSDS	Material Safety Data Sheet
NAD83	North American Datum of 1983
NAVD88	North American Vertical Datum of 1988
NDT	Nondestructive testing
NEPA	National Environmental Policy Act
NGL/LNG	Natural Gas Liquid (Ethane, Propane, and Butane)
NJ	New Jersey
NJDA-SSCC	New Jersey Department of Agriculture – State Soil Conservation Committee
NJDEP	New Jersey Department of Environmental Protection
NJDEP-DFW	New Jersey Department of Environmental Protection Division of Fish & Wildlife
NJHP	New Jersey Natural Heritage Program
NJHPO	New Jersey Historical Preservation Office
NJPDES	New Jersey Pollutant Discharge Elimination System
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
OFA	Object Free Area
O&M	Operations and Maintenance
ONRW	Outstanding National Resource Waters
OSHA	Occupational Safety and Health Administration
PA	Pennsylvania
PABHP	Pennsylvania Bureau of Historic Preservation
PADEP	Pennsylvania Department of Environmental Protection
PBF	PBF Energy
PCBs	Polychlorinated Biphenyls
PennDOT	Pennsylvania Department of Transportation
PGC	Pennsylvania Game Commission
PFBC	Pennsylvania Fish and Boat Commission
PHL	Philadelphia International Airport
PHMC	Pennsylvania Historic and Museum Commission
PL	Pinelands Waters
PNDI	Pennsylvania Natural Diversity Inventory
PNGPC	Paulsboro Natural Gas Pipeline Company LLC
PPC	Preparedness Prevention and Contingency Plan
PRC	Paulsboro Refining Company, LLC
PUB	Palustrine Unconsolidated Bottom
ROW(s), R/W	Right(s) of Way
RR	Resource Report
SHPO	State Historic Preservation Office
SOSC	Species of Special Concern
SSURGO	Soil Survey Geographic Database
STV	STV Energy Services, Inc.
SWCD	Soil and Water Conservation District
SWQS	Surface Water Quality Standards
SYMS	Specific Yield Material Strength

T&E	Threatened & Endangered Species
TETCo	Texas Eastern Transmission Corporation
TSA	Transportation Security Agency
TSF	Trout Stocking Fisheries
TWIC	Transportation Worker Identification Credential
TWS	Temporary Work Space
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USGS	United States Geological Survey
VALE	Voluntary Airport Low Emissions
VOC	Volatile Organic Compounds
WWF	Warm Water Fishes

## RESOURCE REPORT 9 – AIR AND NOISE QUALITY

### 9.0 INTRODUCTION

Paulsboro Natural Gas Pipeline Company LLC (PNGPC) is seeking authorization from the Federal Energy Regulatory Commission (Commission or FERC) under Sections 7(b) and 7(c) of the Natural Gas Act (NGA) to relocate, replace, remove, in part, and abandon in place, in part, an existing approximately 2.4-mile-long 6-inch and 8-inch diameter natural gas pipeline (Pipeline) extending across the Delaware River between Delaware County, Pennsylvania and Gloucester County, New Jersey (Delaware River Pipeline Relocation Project or the Project). The existing facilities were certificated by the Commission in 1998 in Docket No. CP97-750-000<sup>1</sup>. The Pipeline transports approximately 40,000 dekatherms per day (DTH/day) or 38 million standard cubic feet per day (MMSCFD) from a Texas Eastern Transmission, LP<sup>2</sup> transmission line to the refinery owned by Paulsboro Refining Company LLC (PRC), a PNGPC affiliate, in Paulsboro, New Jersey to support PRC refinery operations. The sole customer served by the Pipeline is, and will continue to be, the PRC refinery. The Pipeline ties into the Spectra transmission line at a meter site to the northwest of the Philadelphia International Airport (PHL).

In 2014, an underwater portion of the Pipeline was damaged as a result of the United States Army Corps of Engineers' (USACE) dredging activities in the Delaware River. As discussed below, USACE has notified PNGPC that the existing Pipeline must be relocated in order to accommodate planned channel bend widening to be carried out by USACE as part of the Delaware River Main Channel Deepening Project (45-Foot Project). The 45-Foot Project is ongoing and the anticipated project completion is 2017. The USACE imposed a deadline to PNGPC to have the Pipeline relocated and the segment within the river to be removed by June 2017.

As part of the Project, PNGPC proposes to replace the existing facilities with a combination of 24-inch and 12-inch steel pipeline to increase the volume of gas delivered to approximately 60,000 DTH/day, which assuming 1,040 British Thermal Units per cubic foot (BTU/ft<sup>3</sup>), is 57.7 MMSCFD. These proposed facilities will accommodate the USACE 45-foot Project while giving PNGPC the ability to serve the present natural gas requirements of PRC and to accommodate future commercial activity.

Following construction of the proposed facilities, portions of the existing facilities will be removed as required by USACE and PHL. An approximately 425-foot section of the existing 8-inch line will be removed from the Delaware River in order to avoid marine traffic impact within the widened channel and to eliminate potential conflict with future maintenance dredging operations. Within the PHL property, additional sections of existing pipe located in the PHL expansion area are to be tentatively removed. The remaining portions of the existing 6-inch and 8-inch pipeline will be abandoned in place, sealed and grouted as required by landowners and applicable regulatory agencies.

---

<sup>1</sup> At the time of issuance, entity name was Mobil Gas Pipeline Company.

<sup>2</sup> Texas Eastern Transmission, LP, hereinafter referred to as "Spectra", is a U.S. natural gas pipeline system owned by Spectra Energy Partners, LP and operated by Spectra Energy.

## 9.1 AIR QUALITY

This section (Section 9.1) describes the existing conditions of the Project area, applicable regulatory requirements, and potential impacts to air quality. This section includes descriptions of regional climate, criteria pollutants, attainment status, and existing ambient air quality.

### 9.1.1.1 Regional Climate

The Project will be located in Gloucester County, New Jersey and Delaware County, Pennsylvania. The Project area is generally considered to have a humid continental type of climate. Prevailing winds are from the west, and convey most of the weather disturbances from the interior of the continent. The Atlantic Ocean has only limited influence on climate, generally due to coastal storms (NCDC 1982). Representative climate data for the Project area, measured at PHL, is presented in Table 9.1.

Table 9.1 Climate Information													
Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
Normal Daily Maximum Temperature, °F	40.3	43.8	52.7	63.9	73.8	82.7	87.1	85.3	78	66.6	56	44.8	64.7
Normal Daily Mean Temperature, °F	25.6	27.7	34.4	44.1	54	63.8	69.2	67.9	60.3	48.4	39.2	30.1	47.2
Normal Daily Minimum Temperature, °F	33	35.7	43.5	54	63.9	73.3	78.1	76.6	69.1	57.5	47.6	37.5	55.9
Normal Precipitation, in	3.03	2.65	3.79	3.56	3.71	3.43	4.35	3.5	3.78	3.18	2.99	3.56	41.53
Normal Snowfall, in	6.5	8.8	2.9	0.5	0	0	0	0	0	0	0.3	3.4	22.4
Average wind speed, mph	9.9	10.3	10.8	10.3	9	8.6	8.4	7.8	8.2	8.7	9.3	9.8	9.3
Note: For Philadelphia, PA (measured at Philadelphia International Airport). Source: NCDC 2014 °F: degrees Fahrenheit in: inches													

### 9.1.1.2 Criteria Pollutants

Six common air pollutants comprise the federal list of criteria pollutants: ozone (O<sub>3</sub>); nitrogen dioxide (commonly called NO<sub>2</sub>); carbon monoxide (CO); sulfur dioxide (SO<sub>2</sub>); lead (Pb); and particulate matter (particle size of 10 microns or less [PM<sub>10</sub>] and particle size of 2.5 microns or less [PM<sub>2.5</sub>]). The six criteria pollutants are described in more detail below.

#### Ozone (O<sub>3</sub>)

O<sub>3</sub> is a photochemical oxidant and the major component of smog. While O<sub>3</sub> in the upper atmosphere is beneficial by shielding the earth from harmful ultraviolet radiation from the sun, high concentrations at ground level cause health problems due to lung irritation. O<sub>3</sub> is generated by a complex series of chemical reactions between volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>) in the presence of ultraviolet radiation. High O<sub>3</sub> levels can result from

VOCs and NO<sub>x</sub> emissions from vehicles and industrial sources, in combination with daytime wind flow patterns, mountain barriers, a persistent temperature inversion, and intense sunlight.

### **Nitrogen Dioxide (NO<sub>2</sub>)**

Oxides of nitrogen (NO<sub>x</sub>) emissions are primarily generated from the combustion of fuels. NO<sub>x</sub> emissions include nitric oxide and NO<sub>2</sub>. Because NO<sub>x</sub> converts to NO<sub>2</sub> in the atmosphere over time and NO<sub>2</sub> is the more toxic of the two compounds, NO<sub>2</sub> is the listed criteria pollutant. The control of NO<sub>x</sub> also is important because of its role in the formation of O<sub>3</sub>.

### **Carbon Monoxide (CO)**

CO is a product of incomplete combustion, principally from automobiles and other mobile sources of pollution. CO emissions from wood-burning stoves and fireplaces also can be measurable contributors. Peak CO levels occur typically during winter months, due to a combination of higher emission rates and stagnant weather conditions.

### **Sulfur Dioxide (SO<sub>2</sub>)**

SO<sub>2</sub> is produced when any sulfur-containing fuel is burned. It also is emitted by chemical plants that treat or refine sulfur or sulfur-containing chemicals. Natural gas contains trace amounts of sulfur, while fuel oils contain much larger amounts.

### **Particulates (PM<sub>2.5</sub> and PM<sub>10</sub>)**

Particulates in the air are caused by a combination of the following: wind-blown fugitive dust; particles emitted from combustion sources (usually carbon particles); and organic, sulfate, and nitrate aerosols formed in the air from emitted hydrocarbons, sulfur oxides, and NO<sub>x</sub>. In 1987, the U.S. Environmental Protection Agency (EPA) adopted standards for PM<sub>10</sub> and phased out the total suspended particulate standards that had been in effect until then. In 1997, the EPA added new particulate standards, PM<sub>2.5</sub>, to the existing PM<sub>10</sub> standards. The numbers, 2.5 and 10, refer to the particle size measured in microns.

### **Lead (Pb)**

Pb exposure can occur through multiple pathways, including inhalation of air and ingestion of Pb in food, water, soil, or dust. Excessive exposure to Pb can trigger seizures, mental retardation, or behavior disorders and other central nervous system damage. Pb gasoline additives, non-ferrous smelters, and battery plants formerly were the most significant contributors to atmospheric Pb emissions. However, legislation in the early 1970s required gradual reduction of the Pb content of gasoline over time, which has dramatically reduced Pb emissions from mobile and other combustion sources. In addition, unleaded gasoline was introduced in 1975, and together these controls have essentially eliminated violations of the Pb standard for ambient air in urban areas.



### 9.1.1.3 Attainment Status

In accordance with the Clean Air Act (CAA), the EPA must review air quality conditions reported by states to determine whether states are meeting the National Ambient Air Quality Standards (NAAQS). Areas with ambient concentrations of criteria pollutants within the NAAQS are deemed to be “attainment” areas; conversely, those that do not meet the standards are referred to as “non-attainment” areas. Areas that cannot be classified on the basis of insufficient data are designated as “unclassifiable.” The designation “attainment/unclassifiable” may be assigned to areas that are lacking sufficient monitoring data but meet the standard or will soon meet the standard.

Gloucester County, NJ and Delaware County, PA are a part of the Philadelphia-Wilmington-Atlantic City four-state O<sub>3</sub> marginal nonattainment area (for the 2008 standard). In addition, Delaware County, PA is in moderate nonattainment for PM<sub>2.5</sub> (for the 2012 standard). Gloucester County, NJ is classified as in attainment/unclassifiable with respect to the NAAQS for CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and Pb. Delaware County, PA is classified as in attainment/unclassifiable with respect to the NAAQS for CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, and Pb.

### 9.1.1.4 Existing Ambient Air Quality

Representative ambient pollutant concentrations were obtained from the EPA’s AirData database. The nearest active pollutant monitors were used in determining ambient pollutant concentrations for the most recent available three-year period (2012-2014). Representative ambient pollutant concentrations are presented in Table 9.2.

Table 9.2 Representative Ambient Pollutant Concentrations			
Pollutant	Averaging Period	Concentration	Monitoring Station ID
CO	1-hour	2.2 ppm	34-007-0002; Camden Spruce Street; Camden, NJ
	8-hour	1.7 ppm	34-007-0002; Camden Spruce Street; Camden, NJ
NO <sub>2</sub>	1-hour	0.053 ppm	42-101-0047; Community Health Services (CHS); Philadelphia, PA
	Annual	0.018 ppm	42-101-0047; Community Health Services (CHS); Philadelphia, PA
SO <sub>2</sub>	1-hour	0.011 ppm	42-101-0055; Rittner (RIT); Philadelphia, PA
	3-hour	0.015 ppm	42-101-0055; Rittner (RIT); Philadelphia, PA
O <sub>3</sub>	8-hour	0.073 ppm	34-007-0002; Camden Spruce Street; Camden, NJ
PM <sub>10</sub>	24-hour	66 µg/m <sup>3</sup>	34-007-0009; Camden RRF; Camden, NJ
PM <sub>2.5</sub>	24-hour	24 µg/m <sup>3</sup>	34-007-0009; Camden RRF; Camden, NJ
	Annual	10.2 µg/m <sup>3</sup>	34-007-0009; Camden RRF; Camden, NJ
Pb	3-month	N/A <sup>1</sup>	N/A
Note: Most recent available three-year period (2012 to 2014) analyzed. Concentrations above are in the form of the NAAQS. <sup>1</sup> Pb 3-month average data is not available. 24-hour maximum during 2012 to 2014 was 0.0616 µg/m <sup>3</sup> . Source: USEPA 2015b ppm: parts per million µg/m <sup>3</sup> : micrograms per cubic meter			

The existing air quality in the area is typical of developed regions in the eastern United States. All pollutants, except for O<sub>3</sub> and PM<sub>2.5</sub>, are present in relatively low concentrations (see Section 9.1.2.1 for applicable ambient air quality standards).

## **9.1.2 Applicable Air Quality Regulations**

Applicable air regulations, including ambient air quality standards and General Conformity, are discussed in this section.

### **9.1.2.1 Ambient Air Quality Standards**

Under the CAA, EPA has the authority to regulate emissions from both stationary and mobile sources. The CAA requires the EPA to establish NAAQS for pollutants considered harmful to public health and the environment. Per the requirement, EPA has created national standards for six common air pollutants, also known as criteria pollutants (previously discussed in Section 9.1.1.2.).

The NAAQS include primary standards that provide for the protection of human health, and secondary standards that provide for the protection of public welfare (e.g. visibility, the health of vegetation and animals). The NAAQS are defined in terms of threshold ambient concentrations measured as an average for specified periods of time. Pollutants with acute health effects are assigned short-term standards and those with chronic health effects are assigned long-term standards. The NAAQS undergo periodic revisions to ensure that emerging science and technology result in the most up-to-date and protective standards achievable.

On October 1, 2015, EPA strengthened the NAAQS for O<sub>3</sub>. Based on its review of the air quality criteria for O<sub>3</sub> and related precursors, the EPA revised primary and secondary NAAQS for O<sub>3</sub>. The EPA revised the levels of both standards to 0.070 parts per million (ppm) for an 8-hour averaging time. The final rule is effective December 28, 2015. Under the provisions of the CAA, states can elect to develop their own ambient air quality standards (AAQS) that are more stringent than the NAAQS and apply to additional pollutants, and Pennsylvania and New Jersey have adopted their own AAQS. The Pennsylvania AAQS adds total settled particulate, beryllium, total soluble fluorides (as hydrofluoric acid), and hydrogen sulfide. New Jersey AAQS add total suspended particulates, in addition to more stringent NO<sub>2</sub>, SO<sub>2</sub>, and O<sub>3</sub> standards. The NAAQS, Pennsylvania AAQS, and New Jersey AAQS are presented in Tables 9.3, 9.4, and 9.5, respectively.

<b>Table 9.3</b> <b>National Ambient Air Quality Standards</b>				
<b>Pollutant</b>	<b>Averaging Time</b>	<b>Primary Standard</b>	<b>Secondary Standard</b>	<b>Form</b>
CO	1-hour	35 ppm	-	Not to be exceeded more than once per year
	8-hour	9 ppm	-	Not to be exceeded more than once per year
NO <sub>2</sub>	1-hour	100 ppb	-	98 <sup>th</sup> percentile, averaged over 3 years
	Annual	53 ppb	53 ppb	Annual mean
SO <sub>2</sub>	1-hour	75 ppb	-	99 <sup>th</sup> percentile of 1-hour daily maximum concentrations, averaged over 3 years
	3-hour	-	0.5 ppm	Not to be exceeded more than once per year
O <sub>3</sub>	8-hour	0.070 ppm	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
PM <sub>10</sub>	24-hour	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	Not to be exceeded more than once per year on average over 3 years
PM <sub>2.5</sub>	24-hour	35 µg/m <sup>3</sup>	35 µg/m <sup>3</sup>	98 <sup>th</sup> percentile, averaged over 3 years
	Annual	12 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>	Annual mean, averaged over 3 years
Pb	3-month	0.15 µg/m <sup>3</sup>	0.15 µg/m <sup>3</sup>	Not to be exceeded

<b>Table 9.4</b> <b>Pennsylvania Ambient Air Quality Standards</b>		
<b>Contaminant</b>	<b>Averaging Time</b>	<b>Standard</b>
Settled particulate (total)	1-year	0.8 mg/cm <sup>2</sup> /mo
	30-days	1.5 mg/cm <sup>2</sup> /mo
Beryllium	30-days	0.01 µg/m <sup>3</sup>
Fluorides (total soluble, as HF)	24-hour	5 µg/m <sup>3</sup>
Hydrogen sulfide	24-hour	0.005 ppm
	1-hour	0.1 ppm
Source: Pennsylvania Administrative Code Chapter 131 mg/cm <sup>2</sup> /mo: milligram per square centimeter per month ppm: parts per million µg/m <sup>3</sup> : micrograms per cubic meter		

<b>Table 9.5</b> <b>New Jersey Ambient Air Quality Standards</b>			
<b>Contaminant</b>	<b>Averaging Time</b>	<b>Primary Standard</b>	<b>Secondary Standard</b>
Total suspended particulates	24-hour	260 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>
	1-year	75 µg/m <sup>3</sup>	60 µg/m <sup>3</sup>
CO	1-hour	35 ppm	35 ppm
	8-hour	9 ppm	9 ppm
NO <sub>2</sub>	1-year	0.05 ppm	0.05 ppm
SO <sub>2</sub>	3-hour	-	0.50 ppm
	24-hour	0.14 ppm	0.10 ppm
	1-year	0.03 ppm	0.02 ppm
O <sub>3</sub>	1-hour	0.12 ppm	0.08 ppm
Pb	3-months	1.5 µg/m <sup>3</sup>	1.5 µg/m <sup>3</sup>
Source: New Jersey Administrative Code Title 7, Chapter 27, Subchapter 13. ppm: parts per million µg/m <sup>3</sup> : micrograms per cubic meter			

### 9.1.2.2 General Conformity

The General Conformity Rule was established under CAA Section 176(c)(4) and serves to ensure that federal actions do not inhibit state's attainment plans for areas designated as nonattainment or maintenance. The Project is considered a federal action since a Federal agency (i.e., FERC) will be licensing, permitting, or otherwise approving portions of the Project. The term conformity (as it pertains to the rule), means "conformity to a State Implementation Plan's (SIP) purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards". The rule effectively applies to all federal actions that take place in areas designated as non-attainment or maintenance, except for actions covered under the transportation conformity rule, actions with associated emissions below specified de minimus levels, and other actions that are exempt or presumed to conform. The Project is located in nonattainment areas for O<sub>3</sub> and PM<sub>2.5</sub> and therefore emissions from the Project are subject to General Conformity and must conform to the SIP.

O<sub>3</sub> and its precursors (NO<sub>x</sub> and VOC) can be transported over long distances and can impact large regions. The CAA recognizes this and permits the establishment of Ozone Transport Regions (OTR) to control O<sub>3</sub> precursors. The northeast portion of the United States, from Northern Virginia to New England, is within an OTR. The Project area is located in this northeast OTR.

De minimus levels for criteria pollutants are established under the General Conformity Rule in 40 CFR § 93.153. De minimus levels are based on the severity of an area's air quality problem and establish a threshold for determining if a General Conformity determination must be performed. Activities below this threshold level are assumed to have no significant impact on air

quality and are exempt. The General Conformity Rule establishes more restrictive de minimus emission levels for certain nonattainment and maintenance areas in OTRs. The de minimus emission rate for an O<sub>3</sub> marginal nonattainment area inside an OTR is 50 tons per year of VOC and 100 tons per year of NO<sub>x</sub>. The de minimus emission rate for all PM<sub>2.5</sub> nonattainment and maintenance areas is 100 tons per year. A General Conformity applicability analysis is provided in Section 9.1.3.1.

### **9.1.2.3 Applicable State Requirements**

In addition, PA and NJ have air quality regulations controlling air pollution in Title 25, Article III of the PA Code (25 Pa. Cons. Stat. §§ 121 through 145) and in Title 7, Chapters 27, 27A, 27B and 27C of the New Jersey Administrative Code (NJAC), respectively. However, air permitting is not anticipated to be required as there are no compressor stations or other aboveground stationary sources proposed for this Project. The following briefly discusses a subset of these requirements that have been evaluated for applicability to the Project.

#### **9.1.2.3.1 Pennsylvania**

As discussed in Section 9.1.2.1, Pennsylvania is subject to the NAAQS, but also maintains additional air quality standards under Title 25 of the Pennsylvania Code. 25 Pa. Cons. Stat. § 123.1 outlines fugitive emissions regulations. For accepted fugitive emissions activities/sources, which include construction of buildings, clearing of land, and stockpiling of material, this section states that the following requirements must be met: 1) the emissions must be of minor significance with respect to causing air pollution; and 2) the emissions must not prevent or interfere with the attainment or maintenance of an ambient air quality standard.

#### **9.1.2.3.2 New Jersey**

Section 7:27-14 of the NJAC limits air pollution from diesel-powered motor vehicles, which would apply to all construction equipment used in this Project. Diesel-powered motors may idle for up to 3 consecutive minutes if the vehicle is not in motion. Diesel vehicles may idle for up to 15 consecutive minutes when the vehicle has been stopped for 3 or more hours and only if the temperature is less than 25°F. Buses may idle while actively discharging or picking up passengers for 15 consecutive minutes in a 60 minute period.

### **9.1.3 Air Quality Impacts**

The following sections consider impacts to air quality during construction and operation of the Project.

#### **9.1.3.1 Construction Emissions**

Air quality impacts associated with pipeline construction projects generally arise from fugitive dust generation and the operation of construction equipment. Large earth-moving equipment, skid loaders, trucks, and other mobile sources may be powered by diesel or gasoline and are sources of combustion emissions, which include NO<sub>x</sub>, CO, VOCs, PM, small amounts of SO<sub>2</sub>,

trace amounts air toxics, and greenhouse gases (GHG). Specifically, construction emissions will include:

- Exhaust emissions from construction vehicles and equipment;
- Exhaust emissions from transport of construction workers, equipment, and materials to the Project site; and
- Fugitive dust from construction activities and wind erosion of disturbed areas.

Exhaust emissions from construction vehicles and equipment, and from transport of construction workers, equipment, and materials to the Project site, were determined using EPA's Motor Vehicle Emission Simulator. Average emission factors for construction vehicles and equipment in grams per horsepower hour for CO, NO<sub>x</sub>, SO<sub>2</sub>, total hydrocarbons (assumed to be equal to VOC), PM<sub>10</sub>, and PM<sub>2.5</sub>, and CO<sub>2</sub> were obtained and multiplied by the horsepower rating and duration of equipment use. For on-road transport of construction workers, equipment, and materials to the Project site, average emission factors in grams per vehicle mile traveled for CO, NO<sub>x</sub>, SO<sub>2</sub>, VOC, PM<sub>10</sub>, PM<sub>2.5</sub>, and CO<sub>2</sub>, was determined.

Fugitive dust emissions were estimated using the methodology described within the Western Regional Air Partnership Fugitive Dust Handbook (WRAP 2006). Fugitive emissions from construction operations and wind erosion from disturbed areas are considered. A control efficiency of 50% was assumed to account for water application.

Construction emissions from the proposed Project by year are presented in Table 9.6.

<b>Table 9.6</b> <b>Project Construction Emissions by Year, in Tons</b>									
<b>Year</b>	<b>CO</b>	<b>NO<sub>x</sub></b>	<b>SO<sub>2</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>VOC</b>	<b>HAPs</b>	<b>CO<sub>2</sub></b>	<b>CO<sub>2e</sub></b>
2016	5.80	11.79	0.01	7.68	1.67	0.13	0.01	1,960.15	1,983.19
2017	15.62	22.37	0.03	13.85	3.00	0.33	0.03	5,529.82	5,579.28

All construction emissions from the Project are below General Conformity thresholds. As stated in Section 9.1.1.3, Gloucester County, NJ and Delaware County, PA are a part of a marginal nonattainment area for O<sub>3</sub>, which means that the de minimus thresholds for VOC and NO<sub>x</sub> are 50 and 100 tons per year, respectively. Total VOC and NO<sub>x</sub> emissions from the Project for 2016 and 2017 are below their respective de minimus levels. Additionally, Delaware County, PA is in moderate nonattainment for PM<sub>2.5</sub> and the corresponding de minimus threshold for PM<sub>2.5</sub> is 100 tons per year. PM<sub>2.5</sub> emissions from the proposed Project in Delaware County, PA for 2016 would be 1.12 tons per year and in 2017 would be 1.99 tons per year. Therefore, no de minimus thresholds will be exceeded for the proposed Project and a General Conformity determination does not need to be performed. Detailed emission calculations are provided in Appendix 9A.

### 9.1.3.2 Operational Emissions

During operation of the proposed Project, there may be minor fugitive emissions of natural gas from piping components and pigging activities. There will be no stationary point sources to

release pollutants to the atmosphere. There are no applicable New Source Performance Standards or National Emission Standards for Hazardous Air Pollutants for this Project.

Emissions have been estimated for fugitive emissions from pipeline components and pigging activities. Emissions of VOC would be the primary pollutant emitted from the operation of the Project. Emissions from operation are estimated to be 1.54 tons per year of VOC for each aboveground tie-in facility. Air permitting is not anticipated to be required as there are no compressor stations or other aboveground stationary sources proposed for this Project. Detailed emission calculations are provided in Appendix 9A.

#### **9.1.4 Mitigation Measures**

Construction mitigation measures will be implemented as needed to address potential air quality impacts from construction activities. As previously discussed, Project emissions during construction will only result from various construction equipment (fuel combustion and equipment movement). These emissions will be sporadic, caused by small amounts of equipment at any time, with localized and temporary impacts. Mitigation measures to address construction-related impacts will consist of:

- Maintaining all fossil fuel-fired construction equipment in accordance with manufacturers' recommendations to minimize construction-related combustion emissions.
- Controlling combustion emissions through engine manufacturing requirements for both mobile sources (40 C.F.R. § 85) and portable equipment such as air compressors.
- Limiting the speed of vehicles at all construction sites and pipeline rights-of-way during construction to reduce the amount of fugitive dust generated.
- Utilizing water trucks will be utilized as necessary to reduce fugitive dust from construction activities.

Emissions during operation of the proposed Project and aboveground facilities would be insignificant. Proposed mitigation measures would be to identify and repair any leaks.

## **9.2 NOISE QUALITY**

This section describes the existing conditions of the Project area and potential impacts to noise quality. During construction, noise will occur from construction equipment and HDD activities. During operation, relatively small amounts of noise will occur from aboveground equipment associated with the Project. There are no compressor units or compressor stations associated with the Project.



### 9.2.1 Introduction

The decibel scale is commonly used in noise measurements and evaluation. The decibel scale is logarithmic, meaning that a 100-fold increase in sound energy corresponds to an increase of 20 decibels (dB), not 100 dB. A logarithmic scale uses the logarithm of a physical quantity instead of the quantity itself and is useful for representing quantities like sound levels that can vary over a large range. For example, two measurements of 10 units and 1,000,000,000 units might correspond to values of 1 and 9, respectively, on a logarithmic scale. Logarithmic units also add differently than linear units. For example, if one object is 6 feet long and a second is twice as long, the second object is 12 feet long. For sounds, however, if one sound level is 50 dB and a second is twice as loud, the second sound level is approximately 53 dB, not 100 dB.

There are various scales used to measure sounds using decibels. The most common noise metric is the overall A-weighted sound level measurement (dBA). This metric has been adopted by regulatory bodies worldwide. The A-weighting network measures sound in a way that is similar to how a person perceives or hears sound, thus achieving good correlation in terms of how to evaluate acceptable and unacceptable sound levels. A dBA is typically measured as an average noise level on an equal energy basis for a stated period of time (equivalent sound level, or  $L_{eq}$ ), and is commonly used to measure steady-state sound or noise that is usually dominant. The day-night level, or  $L_{dn}$ , is a 24-hour average A-weighted  $L_{eq}$  noise level, where 10 dBA is added to nighttime levels between 10 p.m. and 7 a.m. to account for greater human sensitivity to nighttime noise levels. For a continuous source that emits the same noise level over a 24-hour period, the  $L_{dn}$  will be 6.4 dBA greater than the  $L_{eq}$ .

### 9.2.2 Existing Conditions

Existing conditions of the Project area, including noise sensitive areas and representative background noise levels are discussed in this section.

#### 9.2.2.1 Noise Sensitive Areas

There are three NSAs identified for the Project based on aerial photography. The first NSA (NSA 1) is identified to be a residence approximately 1,300 feet southeast from the HDD entry in New Jersey. The NSA is adjacent to the PRC refinery. The second NSA (NSA 2) is identified to be a residence approximately 2,600 feet northwest from the HDD exit in Pennsylvania. The residence is located between a business complex and the PHL. The third NSA (NSA 3) is identified to be a commercial hotel approximately 330 feet northwest from the pipeline construction occurring next to Tinicum Island Road and approximately 1,300 feet from the HDD exit. Figure 9A presents the NSAs identified for this Project.

#### 9.2.2.2 Representative Background Noise Levels

The American National Standards Institute (ANSI) has published a standard (ANSI1993, Part 3) with estimates of general ambient noise levels ( $L_{eq}$  and  $L_{dn}$ ) based on detailed descriptions of land use categories. The ANSI document organizes the land use based on six categories. The descriptions and estimated daytime and nighttime  $L_{eq}$  ambient noise levels are provided in Table 9.7.



<b>Table 9.7</b> <b>Representative Existing Conditions Based on Land Use</b>				
<b>Category</b>	<b>Land Use</b>	<b>Description</b>	<b>Estimated Existing Daytime <math>L_{eq}</math>, dBA</b>	<b>Estimated Existing Nighttime <math>L_{eq}</math>, dBA</b>
1	Noisy Commercial and Industrial Areas	Very heavy traffic conditions, such as in busy downtown commercial areas, at intersections of mass transportation and other vehicles, including trains, heavy motor trucks and other heavy traffic, and street corners where motor buses and heavy trucks accelerate.	69	61
2	Moderate Commercial and Industrial Areas, and Noisy Residential Areas	Heavy traffic areas with conditions similar to Category 1 but with somewhat less traffic, routes of relatively heavy or fast automobile traffic but where heavy truck traffic is not extremely dense, and motor bus routes.	64	56
3	Quiet Commercial, Industrial Areas, and Normal Urban and Noisy Residential Areas	Light traffic conditions where no mass transportation vehicles and relatively few automobiles and trucks pass, and where these vehicles generally travel at low speeds. Residential areas and commercial streets and intersections with little traffic comprise this category.	58	52
4	Quiet Urban and Normal Residential Areas	These areas are similar to Category 3 above but, for this group, the background is either distant traffic or is unidentifiable.	53	47
5	Quiet Suburban Residential Areas	Isolated areas, far from significant sources of sound.	48	42
6	Very Quiet, Sparse Suburban or Rural Areas	These areas are similar to Category 5 above but are usually in unincorporated areas and, for this group, there are few if any near neighbors.	43	37
Source: ANSI S12.9-1993/Part 3				

Existing land use in the Project area was estimated based on aerial photography. The entire route of the Project passes adjacent to or through heavy industrial or commercial areas. In New Jersey, the pipeline begins in a heavy industrial zone (the PRC refinery). On the other side of the Delaware River in Pennsylvania, the pipeline would be adjacent to the PHL, an area with heavy airplane traffic and noise. Based on the ANSI document, the area would at least be considered a category 2 for a 'moderate commercial and industrial area'. Therefore, estimated existing daytime  $L_{eq}$  could be considered 64 dBA and estimated existing nighttime  $L_{eq}$  could be considered 56 dBA.

### **9.2.3 Applicable Noise Regulations**

Applicable noise regulations, including FERC regulations and state and local noise regulations, are identified in this section.

#### **9.2.3.1 Federal Energy Regulatory Commission**

FERC requires that sound attributable to compressor stations not exceed 55 dBA ( $L_{dn}$ ) at nearby Noise Sensitive Areas (NSAs). While this Project does not have an associated compressor station, this threshold was used in the analysis to evaluate noise impacts due to HDD activities and pipeline construction. Alternatively, if the ambient background noise level is above 55 dBA ( $L_{dn}$ ), noise from HDD activities and pipeline construction at the nearest NSA should not be more than a 10 dBA increase, or mitigation measures should be implemented.

#### **9.2.3.2 State and Local Noise Regulations**

Noise regulations for state and local jurisdictions are discussed in this section. The Project would be located in the following jurisdictions in New Jersey and Pennsylvania:

- Borough of Paulsboro, New Jersey;
- Greenwich Township, New Jersey; and
- Tinicum Township, Pennsylvania.

##### **9.2.3.2.1 New Jersey**

Title 7, Chapter 29 of the NJAC is titled “Noise Control.” Subchapter 1.2 concerns industrial, commercial, public service, or community service facilities. The subchapter states that no person shall cause, suffer, allow, or permit sound from any industrial, commercial, or community service facility that, when measured at any residential property line of any affected person, is in excess of any of the following:

- From 7:00 a.m. to 10:00 p.m., continuous airborne sound which has a sound level in excess of 65 dBA; or, continuous airborne sound which has an octave band sound pressure level in decibels which exceeds the values listed in the rule; or
- From 10:00 p.m. to 7:00 a.m., continuous airborne sound which has a sound level in excess of 50 dBA; or, continuous airborne sound which has an octave band sound pressure level in decibels which exceeds the values listed in the rule; or
- Impulsive sound in air which has a maximum sound level in excess of 80 dBA and such impulse sound shall not be repeated more than four times in any hour. Impulsive sound which repeats more than four times in any hour shall not exceed 50 dBA.

Subchapter 1.2 also states that no person shall cause, suffer, allow, or permit sound from any industrial, commercial, or community service facility that, when measured at the property line of any other commercial, or community service facility of any affected person, is in excess of any of the following:

- Continuous airborne sound which has a sound level in excess of 65 dBA; or
- Continuous airborne sound which has an octave band sound pressure level in decibels which exceeds the values listed in the rule; or
- Impulsive sound in air which has a maximum sound level in excess of 80 dBA.

### **Borough of Paulsboro, New Jersey**

Chapter 43 of the Code of the Borough of Paulsboro is titled “Noise Control Regulations of the Borough of Paulsboro.” It states that no person shall operate or permit the operation of any tools or equipment used in construction, drilling, earthmoving, excavating, or demolition work between the hours of 8:00 p.m. and 7:00 a.m. (the following day) on weekdays and between the hours of 8:00 p.m. and 9:00 a.m. (the following day) when the following day is a legal holiday or a weekend day except by permit, when the sound creates a noise disturbance across a residential property line. However, the provisions of Chapter 43 do not apply to the emission of sound in situations within the jurisdiction of the federal Occupational Safety and Health Act (OSHA) (§43-9).

The proposed Project would comply with all limitations of allowable hours of construction and will apply for the appropriate permit if noise creates a disturbance across a residential property line.

### **Greenwich Township, New Jersey**

Chapter 468 of the Greenwich Township code states that it is unlawful for any person, firm, partnership, association, corporation, company, or other entity to make, continue, or cause to be made or continued any loud, unnecessary, or unusual noise, or any noise which either annoys, disturbs, injures, or endangers the comfort, repose, health, peace, or safety of others. There are no limitations regarding the allowable hours of construction.

The proposed Project would comply with Chapter 468 of the Greenwich Township code.

### **9.2.3.2.2 Pennsylvania**

No noise regulations were identified in PA Code. However, Tinicum Township has noise regulations applicable to the project.

### **Tinicum Township, Pennsylvania**

Ordinance number 2000-738 of the Township of Tinicum addresses noise within the township. The ordinance establishes noise limits for zoning districts and certain types of equipment. All zoning districts are limited to 65 dBA at or beyond the boundaries of the lot on which the noise generating activities take place. Construction and industrial equipment (including crawler-tractors, dozers, rotary drills and augers, engines, etc.) are limited to 86 dBA at a distance of 50 feet. However, heavy construction equipment is exempted from being limited to 86 dBA at a distance of 50 feet when being used for a relatively short period of time on a specific short term project (such as constructing a building; constructing, repairing, or cleaning a road; drilling a well; and other similar short-term specific, construction demolition or repair projects) in use

between the hours of 7:00 a.m. and 6:00 p.m., provided the equipment is operated according to manufacturer's specifications in proper operating condition.

The proposed Project would comply with ordinance number 2000-738 of the Township of Tinicum by complying with all zoning district noise limits and following all limitations regarding the allowable hours of construction, unless exempted.

#### **9.2.4 Noise Quality Impacts**

Impacts to noise quality are considered during construction and operation of the Project.

##### **9.2.4.1 Construction Noise**

During construction, noise will occur from construction equipment and HDD activities. The pipeline construction would involve staking, clearing and grading, stringing and bending, welding, joint coating, lowering and backfilling, hydrostatic testing, and cleanup and restoration. No blasting activities are anticipated. Construction activities associated with the proposed expansion Project and abandonment of pipeline by removal are to commence in October 2016, and be completed by June 2017.

During construction, noise is generated primarily from diesel engines powering the construction equipment. Acoustical usage factors are applied to equipment to determine the average sound level during a workday, and account for the fact that construction equipment is not always operated at full capacity or used for an entire workday (FHWA 2006). Maximum sound levels and acoustical usage factors for each piece of equipment are presented in Table 9.8.

<b>Table 9.8</b> <b>Maximum Noise Levels of Construction Equipment</b>			
<b>Equipment Type</b>	<b>Quantity</b>	<b>Acoustical Usage Factor</b>	<b>Maximum Noise Level at 50 feet</b>
Backhoe	2	0.40	80
Excavator	1	0.40	85
Flat Bed Truck	2	0.40	84
HDD Rig	1	1.00	85
Pumps	1	0.50	77
Welder	1	0.40	73
Note: Maximum noise level at 50 feet for the HDD Rig is based on an Auger Drill Rig, with the acoustical usage factor set at 1.00 to reflect 24-hour usage. The noise from the sideboom anticipated to be used during the project is approximated as a backhoe.			

Construction noise is highly variable. Construction equipment would not be operated continuously and typically a subset of the equipment would be used in each phase of construction. Equipment that will be used in the pipeline construction portion of the Project includes two backhoes, an excavator, two flatbed trucks, and a welder. Equipment associated with HDD activities include the HDD rig and pumps for the mud system.

The Federal Highway Administration's Roadway Construction Noise Model was used to conduct the noise analysis. The use of the model is not required on Federal-aid Projects; however, the model is a screening tool that can be used for the prediction of construction noise during Project development and construction. The analysis conservatively assumes all applicable equipment at each location will be operating for the entire construction period, regardless of the phase of the Project construction. Noise associated with pipeline construction and HDD activities was assumed to occur simultaneously. Noise associated with all equipment was analyzed at all three identified NSAs.

The noise analysis for the identified NSAs is presented in Table 9.9.

<b>Table 9.9</b> <b>Noise Analysis</b>							
<b>Location</b>	<b>Distance from Noise Generating Activity</b>	<b>Direction from Noise Generating Activity</b>	<b>Land Use Category</b>	<b>Existing Daytime <math>L_{eq}</math>, dBA</b>	<b>Calculated Construction Noise Level, dBA</b>	<b>Combined Ambient Plus Construction, dBA</b>	<b>Increase Over Existing Condition, dBA</b>
NSA 1	1,300	SE	2	64	58.3	65.0	+1.0
NSA 2	2,600	NW	2	64	52.3	64.3	+0.3
NSA 3	330, 1300	NW, N	2	64	65.2	67.7	+3.7

As stated in Section 9.3.3.1., if the ambient background noise level is above 55 dBA ( $L_{dn}$ ), noise from HDD activities and pipeline construction at the nearest NSA should not be more than a 10 dBA increase. While this Project does not have an associated compressor station, FERC has recommended noise mitigation measures be evaluated in cases where compressor station noise is greater than 10 dBA over ambient at the nearest NSA (FERC Docket No. CP02-229-003), Available at: <http://www.ferc.gov/CalendarFiles/20070608153803-CP02-229-003.pdf>. As discussed in Section 9.3.2.2, based on the current land use category the existing daytime  $L_{eq}$  is expected to be greater than 55 dBA (specifically, 64 dBA  $L_{eq}$  during the day and 56 dBA  $L_{eq}$  during the night). As presented in Table 9.8, noise levels could be above the  $L_{eq}$  level of 55 dBA at NSA 1 and NSA 3. However, the increase in noise over ambient conditions at both locations would not greater than 10 dBA and is estimated to range from 0.3 to 3.7 dBA at the nearest receptors. The noise level increases predicted in the analyses described above for 24-hour HDD construction activities are based on unmitigated noise produced by HDD drilling equipment and should therefore be considered a worst-case scenario. The noise levels produced by drilling equipment may be reduced by up to 10 to 15 dBA through mitigative actions described in Section 9.3.5.

#### **9.2.4.2 Operational Noise**

The pipeline will not generate noise once in operation; however, aboveground facilities associated with the pipeline would generate noise. The Spectra Meter Station in Delaware County, PA would be modified to include a pig launcher, in addition to existing equipment. The proposed NJ Natural Gas Integrity Management facility in Gloucester County, NJ would include a pig receiver. Representative ambient noise levels at these locations are estimated at 64 dBA during the day and 56 dBA at night (land use category 2) based on ANSI S12.9-1993/Part 3.

Operational noise is expected to be much less than construction noise. Pigging activities would be the primary source of new noise and would occur occasionally. Both the modified Spectra Meter Station and the proposed NJ Natural Gas Integrity Management facility are approximately 1,300 feet from the nearest NSAs. For example, NSA 1 (identified during the construction noise impacts analysis) is approximately 1,300 feet from the nearest NSA and the corresponding increase in noise is expected to be 1.0 dBA. The increase in noise due to operations at the nearest NSA is expected to be less. An increase of less than 3 dBA is generally not noticeable to human hearing. No state or local noise limits are expected to be exceeded.

#### **9.2.5 Mitigation Measures**

Noise levels are expected to fall below federal noise requirements, and thus do not require mitigation measures. In general, noise mitigation is incorporated depending on site characteristics, distance to the nearest NSA, and sound level at that NSA. Mitigation measures for construction activities may include any of the following:

- Employ shields that are physically attached to the equipment or enclosures surrounding the equipment;
- Use less noisy machinery;

- Take advantage of existing features such as berms and existing noise barriers;
- Make modifications such as dampeners to reduce noise from vibration; and
- Install adequate muffler systems to control engine noise.

However, the continuous manner in which construction work must be done makes complete control of construction noise infeasible. Measures to mitigate construction noise will include compliance with federal regulations limiting noise from trucks, and ensuring that equipment and sound muffling devices provided by the manufacturer are kept in good working condition. Residents of nearby NSAs will also be notified in advance of planned overnight HDD related construction activities to advise them that noise-generating equipment may be operated during night-time hours.

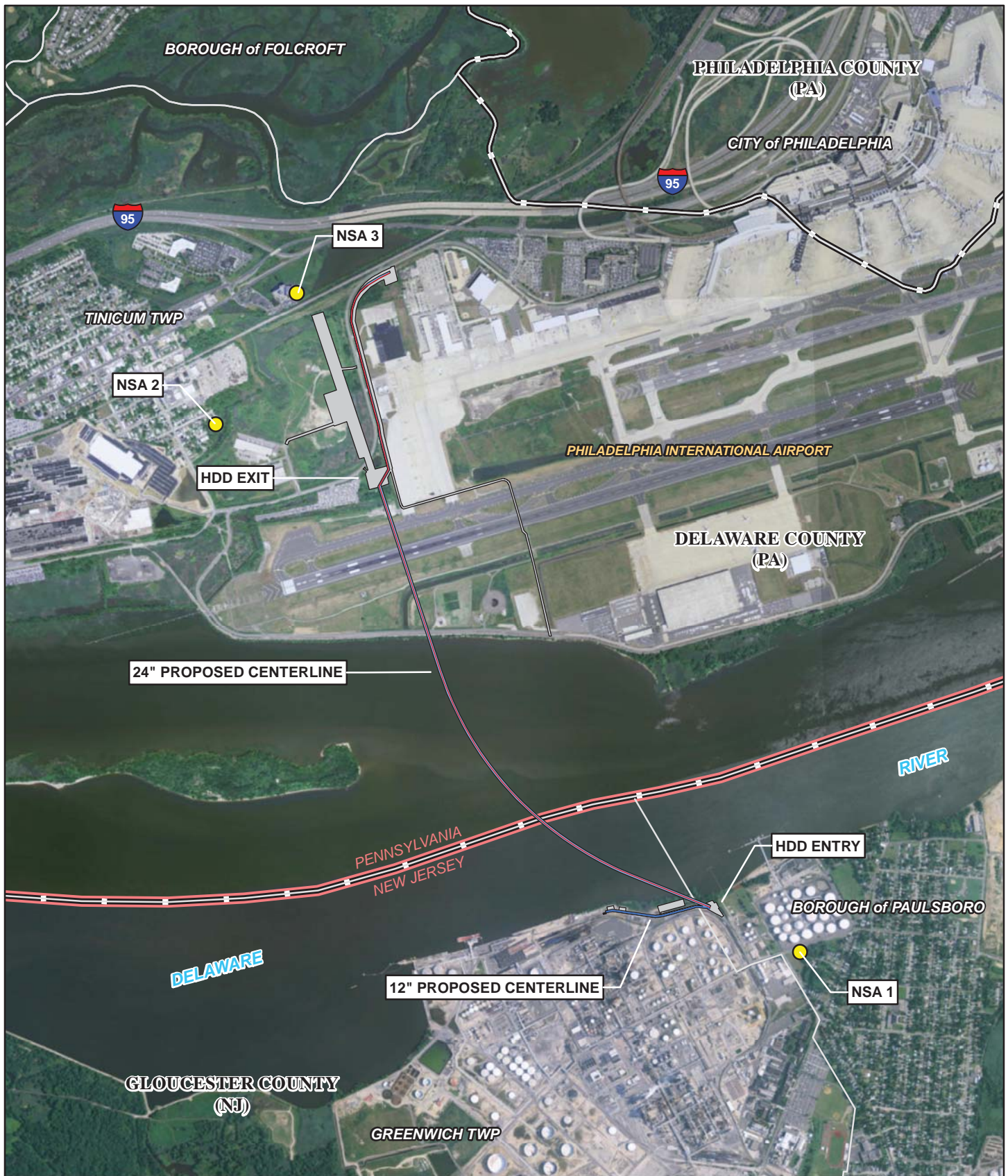
Noise produced during operation of the proposed Project and aboveground facilities would be insignificant. Operational mitigation measures are not proposed.

### 9.3 REFERENCES

- American National Standards Institute (ANSI) 1993. ANSI S12.9-1993/Part 3 - American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound, Part 3: Short-Term Measurements with an Observer.
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## APPENDIX 9A



0 1,000 2,000  
 Feet  
 SCALE: 1" = 2,000'

- 24" Proposed Centerline
- 12" Proposed Centerline
- Easement (Temporary)
- Easement (Permanent)
- Noise Sensitive Area (NSA)
- Municipality Line
- County Line
- State Line



APPENDIX 9A  
**PROPOSED DELAWARE RIVER  
 PIPELINE RELOCATION PROJECT**  
*PAULSBORO NATURAL GAS  
 PIPELINE COMPANY*  
**NOISE SENSITIVE AREAS MAP**

SOURCE: Esri ArcGIS Web Mapping Service (World Imagery)  
 Pennsylvania Spatial Data Access (PASDA)

CREATED BY: STV Energy Services, Inc.



Rev Date: 11/20/2015

# **PAULSBORO NATURAL GAS PIPELINE COMPANY LLC**

## **FERC RESOURCE REPORT 10 ALTERNATIVES**

### **PROPOSED DELAWARE RIVER PIPELINE RELOCATION PROJECT**

NOVEMBER 2015

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SUMMARY OF FILING INFORMATION	
INFORMATION	FOUND IN
<b>Minimum Requirements to Avoid Rejection</b>	
___ 1. Address the “no action” alternative. (§380.12(l)(1)) <ul style="list-style-type: none"> <li>• Discuss the costs and benefits associated with the alternative.</li> </ul>	10.1
___ 2. For large projects, address the effect of energy conservation or energy alternatives to the project. (§380.12(l)(1))	NA
___ 3. Identify system alternatives considered during the identification of the project and provide the rationale for rejecting each alternative. (§380.12(l)(1)) <ul style="list-style-type: none"> <li>• Discuss the costs and benefits associated with each alternative.</li> </ul>	10.2
___ 4. Identify major and minor route alternatives considered to avoid impact on sensitive environmental areas ( <i>e.g.</i> , wetlands, parks or residences) and provide sufficient comparative data to justify the selection of the proposed route. (§380.12(l)(2)(ii)) <ul style="list-style-type: none"> <li>• For onshore projects near to offshore areas, be sure to address alternatives using offshore routings.</li> </ul>	10.3
___ 5. Identify alternative sites considered for the location of major new aboveground facilities and provide sufficient comparative data to justify the selection of the proposed site. (§380.12(l)(2)(ii))	NA

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## **MASTER LIST OF ACRONYMS**

AASHTO	American Association of State Highway Transportation Officials
ACHP	Advisory Council on Historic Preservation
AERC	Airport Emission Reduction Credit
APE	Area of Potential Effects
AREMA	American Railway Engineering Maintenance-of-Way Association
ARO	Abrasion Resistance Overlay
ASME	American Society of Mechanical Engineers
BMP	Best Management Practice
BOP	Delaware Valley Safety Council Basic Orientation Plus
BPL	Buckeye Partners L.P.
BTU	British Thermal Unit
CEP	Capacity Enhancement Program
CFR	Code of Federal Regulations
CI	Chief Inspector
CP	Cathodic Protection
CRM	Cultural Resource Manager
CRGIS	Cultural Resource Geographic Information Systems
CWA	Clean Water Act
CWF	Cold Water Fishes
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program
DCNR	Pennsylvania Department of Conservation and Natural Resources
DCCD	Delaware County Conservation District
DBH	Diameter at Breast Height
DOT	Department of Transportation
DTH	Dekatherm
E&S	Erosion and Sedimentation Control
E&SCP	Erosion and Sedimentation Control Plan
EDR	Environmental Data Resources
EFH	Essential Fish Habitat
EGM	Electronic Gas Measurement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESCGP-2	Erosion and Sediment Control General Permit – 2 (for Oil and Gas Activities)
EV	Exceptional Value
FAA	Federal Aviation Administration
FBE	Fusion Bonded Epoxy
FEMA	Federal Energy Management Agency
FERC	Federal Energy Regulatory Commission
FIRM	Flood Insurance Rate Maps
FWCA	Fish & Wildlife Coordination Act
GCSCD	Gloucester County Soil Conservation District
HAP	Hazardous Air Pollutant
HDD	Horizontal Directional Drill
HQ	High Quality
IMP	Integrity Management Program
IPaC	Information, Planning, & Conservation
LOD	Limit of Disturbance
MBTA	Migratory Bird Treaty Act
MF	Migratory Fishes

MMSCFD	Million Standard Cubic Feet per Day
MSDS	Material Safety Data Sheet
NAD83	North American Datum of 1983
NAVD88	North American Vertical Datum of 1988
NDT	Nondestructive testing
NEPA	National Environmental Policy Act
NGL/LNG	Natural Gas Liquid (Ethane, Propane, and Butane)
NJ	New Jersey
NJDA-SSCC	New Jersey Department of Agriculture – State Soil Conservation Committee
NJDEP	New Jersey Department of Environmental Protection
NJDEP-DFW	New Jersey Department of Environmental Protection Division of Fish & Wildlife
NJHP	New Jersey Natural Heritage Program
NJHPO	New Jersey Historical Preservation Office
NJPDES	New Jersey Pollutant Discharge Elimination System
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
OFA	Object Free Area
O&M	Operations and Maintenance
ONRW	Outstanding National Resource Waters
OSHA	Occupational Safety and Health Administration
PA	Pennsylvania
PABHP	Pennsylvania Bureau of Historic Preservation
PADEP	Pennsylvania Department of Environmental Protection
PBF	PBF Energy
PCBs	Polychlorinated Biphenyls
PennDOT	Pennsylvania Department of Transportation
PGC	Pennsylvania Game Commission
PFBC	Pennsylvania Fish and Boat Commission
PHL	Philadelphia International Airport
PHMC	Pennsylvania Historic and Museum Commission
PL	Pinelands Waters
PNDI	Pennsylvania Natural Diversity Inventory
PNGPC	Paulsboro Natural Gas Pipeline Company LLC
PPC	Preparedness Prevention and Contingency Plan
PRC	Paulsboro Refining Company, LLC
PUB	Palustrine Unconsolidated Bottom
ROW(s), R/W	Right(s) of Way
RR	Resource Report
SHPO	State Historic Preservation Office
SOSC	Species of Special Concern
SSURGO	Soil Survey Geographic Database
STV	STV Energy Services, Inc.
SWCD	Soil and Water Conservation District
SWQS	Surface Water Quality Standards
SYMS	Specific Yield Material Strength

T&E	Threatened & Endangered Species
TETCo	Texas Eastern Transmission Corporation
TSA	Transportation Security Agency
TSF	Trout Stocking Fisheries
TWIC	Transportation Worker Identification Credential
TWS	Temporary Work Space
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USGS	United States Geological Survey
VALE	Voluntary Airport Low Emissions
VOC	Volatile Organic Compounds
WWF	Warm Water Fishes



## RESOURCE REPORT 10 – ALTERNATIVES

### 10.0 INTRODUCTION

Paulsboro Natural Gas Pipeline Company LLC (PNGPC) is seeking authorization from the Federal Energy Regulatory Commission (Commission or FERC) under Sections 7(b) and 7(c) of the Natural Gas Act (NGA) to relocate, replace, remove, in part, and abandon in place, in part, an existing approximately 2.4-mile-long 6-inch and 8-inch diameter natural gas pipeline (Pipeline) extending across the Delaware River between Delaware County, Pennsylvania and Gloucester County, New Jersey (Delaware River Pipeline Relocation Project or the Project). The existing facilities were certificated by the Commission in 1998 in Docket No. CP97-750-000<sup>1</sup>. The Pipeline transports approximately 40,000 dekatherms per day (DTH/day) or 38 million standard cubic feet per day (MMSCFD) from a Texas Eastern Transmission, LP<sup>2</sup> transmission line to the refinery owned by Paulsboro Refining Company LLC (PRC), a PNGPC affiliate, in Paulsboro, New Jersey to support PRC refinery operations. The sole customer served by the Pipeline is, and will continue to be, the PRC refinery. The Pipeline ties into the Spectra transmission line at a meter site to the northwest of the Philadelphia International Airport (PHL).

In 2014, an underwater portion of the Pipeline was damaged as a result of the United States Army Corps of Engineers' (USACE) dredging activities in the Delaware River. As discussed below, USACE has notified PNGPC that the existing Pipeline must be relocated in order to accommodate planned channel bend widening to be carried out by USACE as part of the Delaware River Main Channel Deepening Project (45-Foot Project). The 45-Foot Project is ongoing and the anticipated project completion is 2017. The USACE imposed a deadline to PNGPC to have the Pipeline relocated and the segment within the river to be removed by June 2017.

As part of the Project, PNGPC proposes to replace the existing facilities with a combination of 24-inch and 12-inch steel pipeline to increase the volume of gas delivered to approximately 60,000 DTH/day, which assuming 1,040 British Thermal Units per cubic foot (BTU/ft<sup>3</sup>), is 57.7 MMSCFD. These proposed facilities will accommodate the USACE 45-foot Project while giving PNGPC the ability to serve the present natural gas requirements of PRC and to accommodate future commercial activity.

Following construction of the proposed facilities, portions of the existing facilities will be removed as required by USACE and PHL. An approximately 425-foot section of the existing 8-inch line will be removed from the Delaware River in order to avoid marine traffic impact within the widened channel and to eliminate potential conflict with future maintenance dredging operations. Within the PHL property, additional sections of existing pipe located in the PHL expansion area are to be tentatively removed. The remaining portions of the existing 6-inch and 8-inch pipeline will be abandoned in place, sealed and grouted as required by landowners and applicable regulatory agencies.

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<sup>1</sup> At the time of issuance, entity name was Mobil Gas Pipeline Company.

<sup>2</sup> Texas Eastern Transmission, LP, hereinafter referred to as "Spectra", is a U.S. natural gas pipeline system owned by Spectra Energy Partners, LP and operated by Spectra Energy.

The three types of alternatives considered for the project are as follows:

- No-Action Alternative;
- System Alternatives; and
- Route Alternatives.

## **10.1 NO ACTION ALTERNATIVE**

The No-Action Alternative would consist of not constructing the proposed facilities. Although no action would eliminate or delay any potential environmental impacts of the Project, the objective of the Project – to remove and relocate the existing 8-inch natural gas pipeline by June 2017 – would not be met. The USACE imposed the June 2017 deadline for PNGPC to have the pipeline removed and relocated to avoid conflicts with the USACE’s 45-Foot Project.

Further, to avoid a disruption in natural gas service for refinery operations, and address safety and reliability to the required fuel line, the replacement pipeline will need to be in service prior to the USACE deadline. PNGPC’s current business and operation needs are to maintain a flow of natural gas into the PRC refinery, and therefore, the No-Action Alternative is not feasible and does not meet the objectives of the proposed Project.

The PRC refinery requires the use of natural gas to conduct its operations; therefore energy conservation and alternative energy source alternatives would not be considered viable options and are dismissed from further analysis.

## **10.2 SYSTEM ALTERNATIVES**

System alternatives are options to the proposed action that would make use of other existing, modified, or proposed natural gas pipeline systems to meet stated objectives. Other than the Spectra pipeline from which PNGPC currently receives gas, there are no other existing natural gas pipelines within the project area that would meet the pressure, volume, and timing requirements of the PRC refinery.

The proposed action is a replacement of an existing facility in an adjacent location. The current natural gas system source is a relatively short distance (approximately 2.6 miles) and a direct route. Use of a different pipeline system would need to be constructed where no pipeline currently exists and would need to traverse a longer distance. This alternative would cause additional environmental impacts. Further, the removal of the existing 8-inch PNGPC pipeline would still need to occur to accommodate the USACE dredging operations. For these reasons, system alternatives were eliminated from further analysis.

## **10.3 ROUTE ALTERNATIVES**

During the planning process for the Project, PNGPC considered several route alternatives for the pipeline to cross the Delaware River. The tie-ins at either end are existing sites (i.e. Spectra Meter Site, PRC refinery connection), which cannot be modified for the Project. Constructing new sites would add considerable environmental impacts. Because the two endpoints for the

pipeline are established, the route alternatives aim to determine the most favorable path between these endpoints, factoring in a number of parameters.

A desktop review of the project area was performed to judge the feasibility and analyze the anticipated environmental impacts for each alternative. PNGPC used available aerial imagery, existing topographic contour information, National Wetland Inventory (NWI) mapping, documents from PHL, and previous project documentation. Field visits were performed on properties where permission was granted, however, formal field surveys were not completed for all alternatives.

Threatened and endangered species were investigated and potential impacts were tabulated for each alternative. The potential threatened and endangered species impacts were consistent for each option.

Additionally, cultural resources were investigated and potential impacts were tabulated for each alternative. The potential cultural resource impacts were consistent for each option, with the exception of Option 3, which had a greater potential to impact cultural resources.

Table 10.3-1 identifies the parameters that were considered for the route alternatives:

<b>Table 10.3-1 Route Alternatives Parameters</b>	
Parameter	Description
Constructability Issues	Access to the site
	Temporary workspace locations
	HDD Entry / Exit locations
	Pullback locations
Property Issues	Easement / right-of-way acquisition
	Foreign utility easements / rights-of-way
	PHL
Environmental Impacts	Wetlands
	Streams / rivers
	Wooded areas
	Contaminated sites
Community Impacts	Residences / local businesses
	Temporary traffic control and detours on public roads
Regulations / Standards	Code of Federal Regulations Title 49 (Transportation) Part 192 Transportation of Natural Gas by Pipeline Minimum Federal Standards
	ASME B31.8
	Permanent easement / right-of-way / workspace cost
Cost Concerns	Construction Cost (HDD, trenching, materials etc.)
PHL CEP Project	Avoidance of future improvements to airport

A total of four pipeline route alternatives were considered for this report and they are described in detail in Section 10.3.5. Table 10.3-2 summarizes the environmental factors associated with each alternative. The four route alternatives are shown on a map in Route Alternatives Exhibit, Appendix 10A.

**Table 10.3-2  
Environmental Factors Considered for Analysis of Route Alternatives**

<u>Environmental Factor</u>	<u>Unit</u>	Preferred Route	Route Alternative		
		Option 2	Option 1	Option 3A	Option 3
Total Length	(mi.)	2.6	2.8	3.3	3.6
Wetland Impacts <sup>1</sup>	(ac.)	5.00	0.6	1.44	1.95
Forested Wetland Impacts (PFO) <sup>1</sup>	(ac.)	0	0	0.28	0.87
Waterbody Impacts <sup>1</sup>	(ac.)	0.41	0.36	0.35	0.67
Forested Areas	(ft)	0	0	230	1,090
Threatened and Endangered Species	(no.)	4	4	4	4
Cultural Resources Areas					
National Historic Buildings/Landmarks	(no.)	0	0	0	0
Archaeological Resources	(no.)	0	0	0	1
Land Use					
Residential	(ft)	0	0	0	3,300
Industrial	(ft)	4,350	3,865	4,460	3,230
Commercial	(ft)	3,600	2,690	4,500	12,077
PHL	(ft)	5,742	8,195	8,720	580
Residences / Buildings within 50 feet of work area	(no.)	2 <sup>4</sup>	2	2	27
Road Crossings	(no.)	1	1	3	5
Railroad Crossings	(no.)	1	1	1	1 <sup>2</sup>
Existing Runway/Taxiway Crossings	(no.)	2	4	0	0
Landowners Directly Affected <sup>3</sup>	(no.)	5	5	5	25

<sup>1</sup> Estimates based on aerial imagery, available wetland delineation reports, and NWI data.

<sup>2</sup> Does not include longitudinal occupancy (4,100 ft)

<sup>3</sup> Landowners tabulation includes PHL and PRC, and does not include total number of parcels.

<sup>4</sup> 2 PHL Buildings (no residences)

### 10.3.1 OPTION 1 (REJECTED)

Option 1 begins at the existing PNGPC/Spectra Meter Site, which is set for all of the proposed options, and is where the existing PNGPC pipeline connects to the existing Spectra pipeline. The proposed pipeline will travel generally south, paralleling an existing Buckeye Pipeline, to the existing connection at the PRC refinery. (See Appendix 10A for the Route Alternatives Exhibit).

Option 1 was considered because the route involves a relatively low number of property owners, and includes no residential or agricultural properties. Of the four route alternatives investigated herein, this option has the shortest HDD. This makes a traditional HDD viable; however, this

construction method does not result in any less environmental impacts. The cost and risk from an engineering standpoint is significantly less for a traditional HDD. From a constructability standpoint, the route allows for several convenient access points from public roads.

The most significant reason Option 1 was rejected was because of its impact on PHL and its future expansion project. Option 1 was designed to traverse through the taxiways/runways, including new taxiways/runways built due to the expansion project. The relocated pipeline construction would occur prior to any airport expansion construction activities, and the pipeline would need to be designed and constructed to withstand the impacts caused by airport construction. It is anticipated that significant fill will be placed south of the existing taxiways/runways to build up the area for the new taxiways/runways. The fill will settle over time, causing damage or compromising the integrity of the PNGPC pipeline. To mitigate the possible degradation of the integrity of the pipeline, significant structural members would need to be designed and constructed to support the pipeline underground increasing cost, and more importantly, delaying the construction schedule. Because this is a schedule driven project (per USACE requirements), unacceptable delays would be anticipated from the increased time required for design and construction.

Additionally, Option 1 was rejected because it has been determined that any work within the Object Free Area (OFA) of PHL would not be permitted by the Federal Aviation Administration (FAA). The option is also not constructible considering the location of the existing adjacent Buckeye pipeline. In order to protect their facilities during construction, Buckeye will require additional separation than is proposed for the Option 1 route. Further, due to the proximity of the construction to active runways at PHL within the fence line, safety concerns also make this option unfeasible. Also, there will need to be eight pullback strings for this design, which greatly increases the risk of pilot hole collapse while the strings are being welded together during the pullback operation. Finally, Option 1 would result in temporary impacts to exceptional value (EV) wetlands within the project area.

A summary of the advantages and concerns for Option 1 are listed below:

<b>Table 10.3.1-1</b> <b>Option 1 Advantages/Concerns</b>	
<b>Advantages</b>	<b>Concerns</b>
- Limited number of property owners affected (no residential or agricultural uses)	- Work within OFA not permitted
- Shortest HDD	- High risk for future potential relocation due to settlement associated with PHL improvements
- Convenient access points from public roads to work areas	- Buckeye will require additional separation from active lines due to nature of construction (HDD)
- HDD (Buckeye) previously completed in the vicinity	- Work locations in close proximity to active runways at PHL (inside fence)
	- Eight pullback strings
	- Temporary impact to EV wetland

### 10.3.2 OPTION 2 (PREFERRED)

This option is located further west in comparison to Option 1, within PHL property. (See Appendix 10-A for the Route Alternatives Exhibit).

Several concerns were identified for Option 2, all of which are constructability issues that can be mitigated through careful design and planning. The HDD design requires an intersect drill (drilling from both sides of river and meeting in the center), which can complicate the construction process and may increase the risk of problems during drilling. During the HDD pullback procedure, Tinicum Island Road may need to be shut down for a limited time period, but will remain open during the majority of the construction process. The construction activities will temporarily impact EV wetlands. There will need to be four pullback strings for this design, which may increase the risk of pilot hole collapse while the strings are being welded together during the pullback operation. Compared to the alternative routes for this project, these concerns are minor and can be mitigated during construction. It also happens to be the shortest overall route.

Option 2 was selected because the advantages significantly outweigh those of the alternative routes. The primary advantage of the route is the low impact to land owners, with the most critical land owner to the project being the PHL. Option 2 has the least impact to PHL compared to any of the route alternatives, and will not disrupt airport operations during construction. This advantage is crucial to the success of the project, and makes the option the most viable for construction. The overall length of the drill is the second shortest of the options considered, translating to a lower risk of complications during the HDD procedure. The pullback area is also an advantage for Option 2, as it is flat and open for welding and stringing operations. The pullback area, with the other areas for construction, is easily accessible for construction traffic.

A summary of the advantages and concerns for Option 2 are listed below:

<b>Table 10.3.2-1 Option 2 Advantages/Concerns</b>	
<b>Advantages</b>	<b>Concerns</b>
- Minimal impact to existing PHL operations and future PHL improvements	- Intersect HDD
- Limited number of land owners impacted	- PHL security fencing setback requirements
- Second shortest HDD	- Shutdown Tinicum Island Road during HDD pullback
- Flat open area for pipeline staging for HDD pullback	- Construction activities within EV wetland
- Convenient access points to work areas	- Four pullback strings

### 10.3.3 OPTION 3A (REJECTED)

The HDD for this option is located farthest west on PHL property and has no impacts to current operations. (See Appendix 10-A for the Route Alternatives Exhibit).

Option 3A was considered because it will result in minimal impacts to the future PHL improvements and allows for convenient access points for work areas during construction.

The concerns far outweigh the advantages for this option, making Option 3 unviable for construction. The primary concern is the method of construction that would be necessary to install the pipeline across the Delaware River. The HDD rig would need to be staged within the Delaware River. There would also be excavation of the river bed needed to perform this work and tie in the HDDs, causing additional impacts and risks. The pullback activities are not ideal as the temporary workspace is obstructed by a FedEx Ground driveway, parking lot, and detention basin. Not only would this prove to be difficult, but to use it would require eight pullback strings. This number of pullback strings causes the pullback operation to be more time consuming and riskier than the reamed bore hole will collapse. Additionally, the duration of the pullback is even more important since 2<sup>nd</sup> Street and the railroad will be impacted during pullback operations. There will be impacts to multiple wetlands and since this is still located on PHL property, airport security will remain a concern.

A summary of the pros and cons for Option 3A are listed in Table 10.3.3-1 below:

<b>Table 10.3.3-1 Option 3A Advantages/Concerns</b>	
<b>Advantages</b>	<b>Concerns</b>
- Minimal impact to future PHL improvements	- Drill rig staging and equipment, materials and personnel in the Delaware River, including significant disturbance within river bed
- Convenient access points to work areas	- Pullback area obstructed by FedEx Ground facility's driveway, parking lot, and stormwater management basin
	- Shutdown 2 <sup>nd</sup> Street during HDD pullback
	- Eight pullback strings
	-Impacts to multiple EV wetlands
	- PHL security fencing



#### 10.3.4 OPTION 3 (REJECTED)

This option was developed in case PNGPC was not able to come to an agreement with PHL for their pipeline replacement project. (See Appendix 10-A for the Route Alternatives Exhibit).

Option 3 was considered solely because it avoided PHL property with the exception of the existing Spectra meter station.

Option 3 was rejected for numerous reasons. Similar to Option 3A, a drill rig and excavation would need to occur within the Delaware River. Not only would this increase disturbance and impacts, but construction would be very difficult and the HDDs would still be very long. The pullback operations, made difficult by the fact that there are eight pullback strings, would affect 2<sup>nd</sup> Street, the railroad, and local commercial properties. This is also the only option that impacts residential properties (approximately 3,300 linear feet along the pipeline route will be within residential areas). This is exacerbated by the fact that there is limited workspace in this area and construction would be parallel to the railroad and two existing Sunoco pipelines. While paralleling an existing pipeline/railroad corridor may be environmentally preferable, limited space is available for construction, protection of the existing pipelines, and meeting railroad requirements. This is also partly why there is limited access to the workspace. All of this leads to the greater residential disturbances which is not ideal and would preferably be entirely avoided. There are also significant unknown environmental impacts that would also need to be investigated further in the field. One potential cultural resource was identified for Option 3.

A summary of the advantages and concerns for Option 3 are listed in Table 10.3.4-1 below:

<b>Table 10.3.4-1 Option 3 Advantages/Concerns</b>	
<b>Advantages</b>	<b>Concerns</b>
- No impact to future PHL improvements	- Drill rig staging and equipment, materials and personnel in the Delaware River, including significant disturbance within river bed
	- Only option with residential impacts
	- Pullback area on Airport Business Complex (increased impacts to commercial properties)
	- Construction activities impacting railroad operations, residences, and other utility owners.
	- Shutdown 2 <sup>nd</sup> Street and railroad during HDD pullback
	- Limited access points to work areas
	- Eight pullback strings
	- Unknown environmental resources that could incur impacts



### 10.3.5 ROUTE ALTERNATIVES CONCLUSION

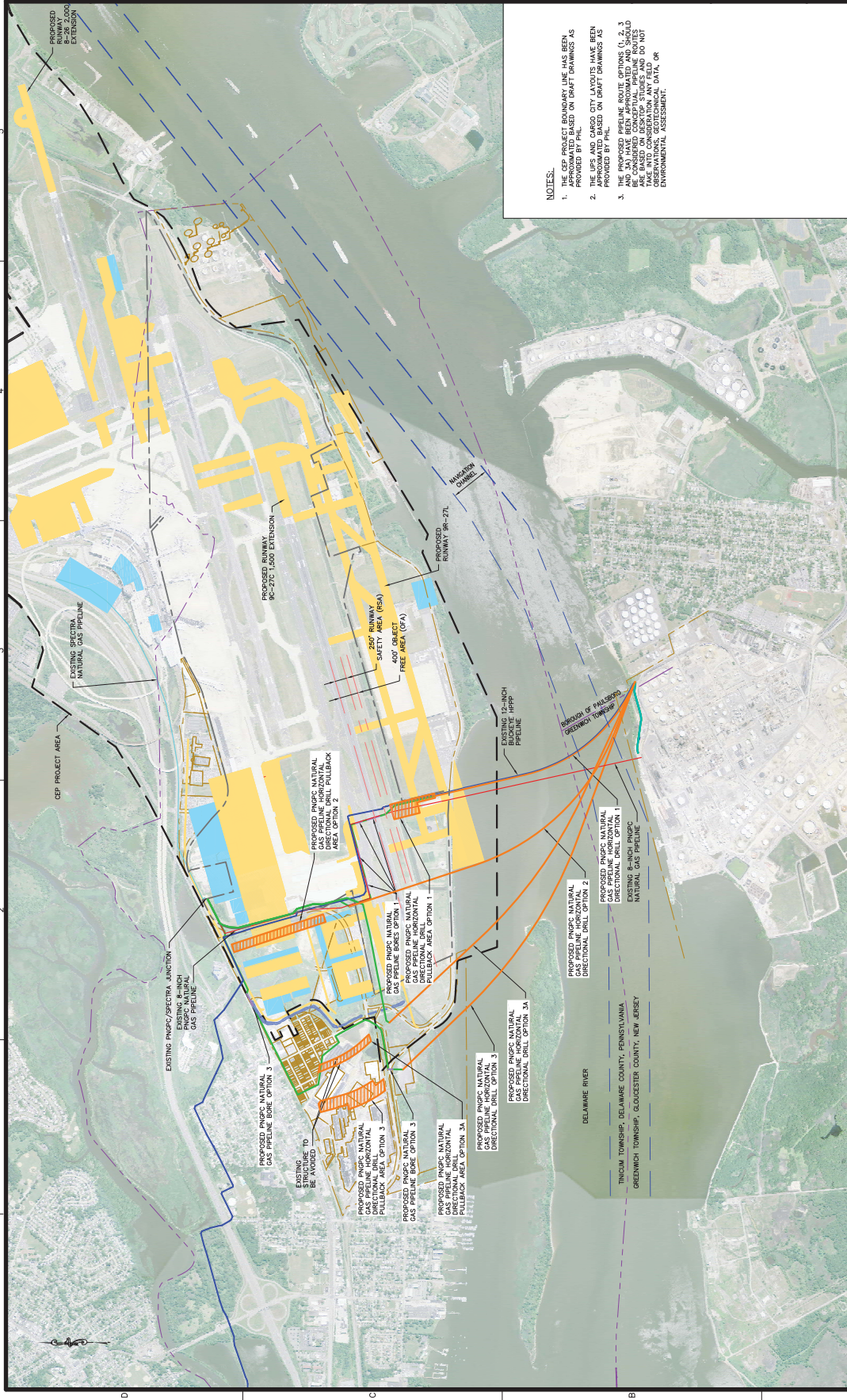
After reviewing the individual alternatives, PNGPC concluded that none of the alternatives were environmentally preferable to the proposed route. Table 10.3.5-1 summarizes the environmental and engineering factors related to the adoption/rejection of the alternatives.

<b>Table 10.3.5-1</b>			
<b>Basis of Adoption or Rejection of Route Alternative</b>			
Alternative	Length (mi.)	Status	Basis for Adoption or Rejection
Option 1	2.6	Rejected	Significant work within PHL security fence, auger bores required for crossing active runways, high risk for future relocation due to PHL improvements, impacts to EV wetlands, proximity to Buckeye pipeline
Option 2	2.8	Adopted	Minimal impacts to PHL operations and future improvements, no residential impacts, limited land owner impacts, unobstructed pullback area, convenient access points
Option 3A	3.3	Rejected	Impacts to Delaware River bed, obstructed pullback area, 2 <sup>nd</sup> Street impacts, 8 pullback strings, impacts to EV wetlands, impacts to PHL security fencing
Option 3	3.6	Rejected	Impacts to Delaware River bed, only option with residential impacts, increased impacts to commercial properties, impacts to railroad and foreign utilities, impacts to 2 <sup>nd</sup> Street, limited access points and work areas, 8 pullback strings, and unknown environmental resources

### 10.4 ALTERNATIVE SITES

Project aboveground facilities are limited to one pig launcher, one pig receiver, and block valves. The launcher facility will be located at the beginning of the proposed pipeline at the existing Spectra Meter Site. The receiver facility will be located at approximate Station 121+00 on the PRC refinery property. The connection site will be located at approximate Station 136+92 on the PRC refinery property at the existing 8-inch PRC refinery connection. The siting of the new aboveground facilities was governed by the location of existing meter station, by the location of the end of the 24-inch pipeline, and the location of the existing connection to the PRC refinery. Because the selected sites for the proposed aboveground facilities present no or minimal environmental impacts, no additional site considerations were necessary.

## APPENDIX 10A

[illegible]

PLAN  
SCALE: 1" = 1,000'

CONFIDENTIAL/DRAFT





0 1,000 2,000 4,000 Feet  
SCALE: 1" = 2,000'

PBF - Proposed Alignment

Limit of Disturbance (LOD)

Delineated Wetland

Open Water Pond

Canal/Channel

LOCATOR MAP

Project Location

PA NJ

0 100 200 Miles

PROPOSED DELAWARE RIVER  
PIPELINE RELOCATION PROJECT

PAULSBORO NATURAL GAS  
PIPELINE COMPANY

DELINEATED WETLANDS and WATERWAYS MAP

STV

100

years

SOURCE: United States Census Bureau (TIGER/Line Data)  
Esri ArcGIS Online Map Service (World Imagery)

CREATED BY: STV Energy Services, Inc.

Rev Date: 11/20/2015

# **PAULSBORO NATURAL GAS PIPELINE COMPANY LLC**

## **FERC RESOURCE REPORT 11 RELIABILITY AND SAFETY**

### **PROPOSED DELAWARE RIVER PIPELINE RELOCATION PROJECT**

**NOT APPLICABLE**

NOVEMBER 2015

*Prepared by:*

STV Energy Services, Inc.  
205 West Welsh Drive  
Douglassville, PA 19518  
STV Project No.: 38-17378

*Prepared for:*

Paulsboro Natural Gas Pipeline  
Company LLC  
800 Billingsport Road  
Paulsboro, NJ 08066

## **RESOURCE REPORT 11 – RELIABILITY AND SAFETY**

### **11.0 INTRODUCTION**

This Resource Report is required for applications involving new or recommissioned liquefied natural gas (“LNG”) facilities, or pipeline projects where significant safety concerns have been raised. The project discussed in this Environmental Report (Exhibit F-I) does not involve the construction or recommissioning of an LNG facility, nor have significant safety concerns been raised. Therefore, no further discussion is provided.

# **PAULSBORO NATURAL GAS PIPELINE COMPANY LLC**

## **FERC RESOURCE REPORT 12 PCB CONTAMINATION**

**NOT APPLICABLE**

## **PROPOSED DELAWARE RIVER PIPELINE RELOCATION PROJECT**

NOVEMBER 2015

*Prepared by:*

STV Energy Services, Inc.  
205 West Welsh Drive  
Douglassville, PA 19518  
STV Project No.: 38-17378

*Prepared for:*

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Company LLC  
800 Billingsport Road  
Paulsboro, NJ 08066

## **RESOURCE REPORT 12 – PCB CONTAMINATION**

### **12.0 INTRODUCTION**

This Resource Report is required for applications involving the replacement, abandonment by removal, or abandonment in place of facilities determined to have polychlorinated biphenyl (“PCB”) in excess of 50 parts per million in pipeline liquids. The project discussed in this Environmental Report (Exhibit F-I) does not involve replacement or abandonment of any facilities with known PCB contamination. Therefore, no further discussion is provided.



# **PAULSBORO NATURAL GAS PIPELINE COMPANY LLC**

## **FERC RESOURCE REPORT 13 ADDITIONAL INFORMATION RELATED TO LNG PLANTS**

**NOT APPLICABLE**

## **PROPOSED DELAWARE RIVER PIPELINE RELOCATION PROJECT**

NOVEMBER 2015

*Prepared by:*

STV Energy Services, Inc.  
205 West Welsh Drive  
Douglassville, PA 19518  
STV Project No.: 38-17378

*Prepared for:*

Paulsboro Natural Gas Pipeline  
Company LLC  
800 Billingsport Road  
Paulsboro, NJ 08066

## **RESOURCE REPORT 13 – ADDITIONAL INFORMATION RELATED TO LNG PLANTS**

### **13.0 INTRODUCTION**

This Resource Report is required for construction of new or recommissioned liquefied natural gas (“LNG”) facilities. The project discussed in this Environmental Report (Exhibit F-I) does not involve the construction or recommissioning of an LNG facility. Therefore, no further discussion is provided.

## **Exhibit J**

### **Proposed Delaware River Pipeline Relocation Project Permit Matrix**

EXHIBIT J

PROPOSED DELAWARE RIVER PIPELINE RELOCATION PROJECT PERMIT MATRIX

Office or Agency Issuing Permit, Approval, Review or License	Name of Permit, Approval, Review or License	Statutory Authority	Date Permit/Approval Submitted	Anticipated Date of Approval	Date of Approval	Why Request Was Not Submitted
Federal Agencies						
Federal Energy Regulatory Commission (FERC)	Natural Gas Act - Certificate of Public Convenience and Necessity and Blanket Construction Certificate	Section 7c	Anticipated 11/19/15	8/19/2016	TBD	N/A
US Army Corps of Engineers (USACE) and Pennsylvania Department of Environmental Protection (PADEP) Bureau of Watershed Management	USACE and PADEP Joint Permit (JPA)	33 CFR part 330 Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) Section 404 of the Clean Water Act (33 USC 1344) PA Code Title 25, Chapter 105, Dam Safety & Encroachment Act	Anticipated 3/16/16	7/19/2016	TBD	N/A
US Coast Guard	Navigation Channel Review and Notice to Mariners Letter with Return Approval Letter	Code of Federal Regulations (33 CFR)	Anticipated 3/16/2016	5/16/2016	TBD	N/A
US Fish & Wildlife Service (USFWS) New Jersey	Coordination Letter	Section 7 of the Endangered Species Act of 1973	8/26/2015	3/16/2016	9/20/2015	N/A
US Fish & Wildlife Service (USFWS) Pennsylvania	Coordination Letter	Section 7 of the Endangered Species Act of 1973	4/28/2015	N/A	TBD	N/A
National Marine Fisheries	Coordination Letter	Section 7 of the Endangered Species Act of 1973	5/4/2015	3/16/2016	TBD	N/A

EXHIBIT J

PROPOSED DELAWARE RIVER PIPELINE RELOCATION PROJECT PERMIT MATRIX

Office or Agency Issuing Permit, Approval, Review or License	Name of Permit, Approval, Review or License	Statutory Authority	Date Permit/Approval Submitted	Anticipated Date of Approval	Date of Approval	Why Request Was Not Submitted
Federal Aviation Administration (FAA)	Obstruction Evaluation / Airport Airspace Analysis  Notice of Proposed Construction or Alteration FAA Form 7460-1 (if construction is on an airport)  FAA Form 7460-1 & 2 (if construction is not located on an airport)	Federal Aviation Regulations CFR Title 14 Part 77	Anticipated 3/16/2016	7/19/2016	TBD	N/A
US Environmental Protection Agency (USEPA)	Notification	Safe Drinking Water Act Public Law 93-523 December 16, 1974	Anticipated 3/16/2016	7/19/2016		N/A
State Agencies - New Jersey						
NJ Department of Environmental Protection (NJDEP) Land Use Regulation Program (LURP)	Waterfront Development, Upland Waterfront Development, Coastal Wetlands, Freshwater Wetlands, Flood Hazard Permit and 401 Water Quality Certificate	N.J.A.C. 7:7 Coastal Program Permit Rules  N.J.A.C. 7:13 Flood Hazard Area Control Act Rules	Anticipated 3/16/2016	7/19/2016		N/A
NJDEP Bureau of Tidelands Management	Tidelands License	N.J.S.A. 12:3-10	Anticipated 3/16/2016	7/19/2016		N/A
NJDEP Division of Water Quality Bureau of Nonpoint Pollution Control	NJPDES General Permit No. NJG0088323 Stormwater Discharge Associated with Construction Activity	N.J.A.C. 7:14A	Anticipated 3/16/2016	4/26/2016		N/A
NJDEP Division of Parks and Forestry State Historic Preservation Office	State Historic Preservation Review	Section 106 - 16 USC 470f	5/4/2015	3/16/2016		N/A
NJDEP Division of Parks and Forestry New Jersey Natural Heritage Program	Threatened and Endangered Species Review for New Jersey	N.J.A.C. 7:25	5/4/2015	3/16/2016	TBD	N/A
State Agencies - Pennsylvania						

EXHIBIT J

PROPOSED DELAWARE RIVER PIPELINE RELOCATION PROJECT PERMIT MATRIX

Office or Agency Issuing Permit, Approval, Review or License	Name of Permit, Approval, Review or License	Statutory Authority	Date Permit/Approval Submitted	Anticipated Date of Approval	Date of Approval	Why Request Was Not Submitted
US Army Corps of Engineers (USACE) and Pennsylvania Department of Environmental Protection (PADEP) Bureau of Watershed Management	USACE and PADEP Joint Permit (JPA)	33 CFR part 330 Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) Section 404 of the Clean Water Act (33 USC 1344) PA Code Title 25, Chapter 105, Dam Safety & Encroachment Act	Anticipated 3/16/2016	7/19/2016	TBD	N/A
PADEP Bureau of Watershed Management	Submerged Lands License	Chapter 105 Dam Safety and Water Management	Anticipated 3/16/2016	7/19/2016	TBD	N/A
PADEP Bureau of Watershed Management	Coastal Zone Management Consistency (CZM)	Coastal Zone Management Act of 1972	Anticipated 3/16/2016	7/19/2016	TBD	N/A
PADEP Bureau of Water Quality Protection	ESCGP-2	PA Code Chapter 102; 40 CFR Part 122	Anticipated 3/16/2016	7/19/2016	TBD	N/A
PADEP Bureau of Water Quality Protection	PAG-10 Authorization to Discharge under the NPDES - General Permit for Discharges Resulting from Hydrostatic Testing of Tanks and Pipelines	PADEP Bureau of Water Quality Protection Clean Water Act- Section 1251 PA Clean Streams Law	Anticipated 3/16/2016	7/19/2016	TBD	N/A
PADEP Bureau of Air Quality	Request for Determination of Requirement for Plan Approval/Operating Permit (RFD)	PADEP Bureau of Air Quality Clean Air Act		1 week	2 months	N/A
Pennsylvania Fish and Boat Commission (PAFBC)	Coordination Letter Review	PA Code Chapter 75	5/4/2015	3/16/2016	TBD	N/A
Pennsylvania Game Commission (PGC)	Coordination Letter Review	PA Game and Wildlife Code (title 34)	5/4/2016	N/A	5/22/2015	N/A
PA Department of Conservation and Natural Resources (DCNR)	Coordination Letter Review	25 PA code Chapter 93	5/4/2015	N/A	6/23/2015	N/A
Pennsylvania Department of Transportation (Penn DOT) PA Bureau of Aviation	AV-57 Notice of Proposed construction or alteration	Department of Transportation Aviation Regulations, Chapter 471, Title 67, PA Consolidated Statutes. Sec. 479.4. AIRPORT OBSTRUCTIONS	Anticipated 3/16/2016	7/19/2016	TBD	N/A
Pennsylvania Historic and Museum Commission (PHMC)	Project Review	Section 106	5/4/2015	N/A	6/9/2015	N/A

The NJDEP applications are not being submitted concurrently with the FERC application, as to date, coordination with the New Jersey State Historic Preservation Office (NJSHPO), and the NJ Natural Heritage Program (NJNHP) is still ongoing.

PNGPC conducted pre-application meetings with the PADEP, NJDEP, and USACE on October 21, 2015 to introduce the project and permitting requirements. Separate meetings were held with the Delaware County Conservation District (DCCD) and the Gloucester County Soil Conservation District (GCSCD), on November 4, 2015 and October 13, 2015, respectively, to discuss erosion and sedimentation control permitting requirements. DCCD asked that the ESCGP-2 permit application be submitted with the PADEP Chapter 105 applications. GCSCD requested that their applications be submitted following NJDEP applications.

PNGPC will obtain applicable permits, licenses, and approvals required for this project, as indicated in the attached matrix.

The USACE and PADEP submissions are not being submitted concurrently with the FERC application, as to date, PNGPC has not obtained access to the Henderson Trust property. PNGPC is intending to use a wetland delineation conducted by PHL (Patricia Ann Quigley, Inc.) The USACE has requested that since this property does not have an approved Jurisdictional Determination (JD) that PNGPC’s consultant, STV Energy Services, Inc., provide visual confirmation that the wetlands are accurately delineated as indicated in the PAQ wetland delineation report. Therefore, the USACE and PADEP permit submissions will not be submitted until access to the Henderson property is obtained.

Notice of proposed construction/alteration (7460) not submitted to FAA concurrently with FERC due to the expiration dates of the FAA 7460 approvals. Any extensions must be submitted at least 15 days prior to expiration date on the determination. One project specific extension may be requested.

## **Exhibit T**

### Related Applications

## PAULSBORO NATURAL GAS PIPELINE COMPANY LLC

### Related Applications

Paulsboro Natural Gas Pipeline Company LLC (“PNGPC”)<sup>1</sup> seeks to relocate, replace, remove, in part, and abandon in place, in part, an existing approximately 2.6-mile-long, 6 and 8-inch diameter natural gas pipeline (“Pipeline”) extending across the Delaware River between Delaware County, Pennsylvania and Gloucester County, New Jersey.

On March 17, 1998, the Federal Energy Regulatory Commission (“Commission”) granted a Certificate of Public Convenience and Necessity to PNGPC’s predecessor, Mobil Natural Gas Pipeline Company (“Mobil Natural Gas”), in Docket No. CP97-750-000, authorizing Mobil Natural Gas to, among other things, convert the Pipeline from refined petroleum products service to natural gas service, construct and operate certain appurtenant and interconnection facilities, and provide transportation services.<sup>2</sup> In the 1998 Certificate Order, the Commission also approved Mobil Natural Gas’s request for waiver of the Commission’s tariff filing requirements, provided that the Pipeline only serve an affiliated entity.<sup>3</sup> In accordance with the 1998 Certificate Order, Mobil Natural Gas repurposed the Pipeline segment connecting to its refinery into a natural gas transmission pipeline.

On October 13, 1998, Mobil Natural Gas notified the Commission of its corporate name change to Valero Natural Gas. In late 1999, the repurposed Pipeline was placed into service. In December 2010, in connection with the acquisition of Paulsboro Refining Company LLC and Valero Natural Gas by PBF Holding Company LLC, Valero Natural Gas changed its corporate name to Paulsboro Natural Gas Pipeline Company LLC and notified the Commission on January 13, 2011 of such change.

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<sup>1</sup> PNGPC is the successor to Mobil Natural Gas Pipeline Company (“Mobil Natural Gas”) and was formerly known as Valero Natural Gas Pipeline Company (“Valero Natural Gas”).

<sup>2</sup> *Mobil Natural Gas Pipeline Co.*, 82 FERC ¶ 61,280 (1998) (“1998 Certificate Order”).

<sup>3</sup> *Id.* at 62,094.