ATLANTIC COAST PIPELINE, LLC
ATLANTIC COAST PIPELINE

INDIVIDUAL 401 WATER QUALITY CERTIFICATION SUPPLEMENTAL INFORMATION

West Virginia Department of Environmental Protection

Prepared by

ERM

August 2016

ATLANTIC COAST PIPELINE PROJECT
WEST VIRGINIA – INDIVIDUAL 401 WATER QUALITY CERTIFICATION

TABLE OF CONTENTS

LIST OF TABLES

APPENDICES

LIST OF ACRONYMS AND ABBREVIATIONS

ACP	Atlantic Coast Pipeline
Atlantic	Atlantic Coast Pipeline, LLC
ATWS	additional temporary workspace
CFR	Code of Federal Regulations
Columbia	Columbia Gas Transmission, LLC
Commission	Federal Energy Regulatory Commission
Dominion	Dominion Resources, Inc.
DTI	Dominion Transmission, Inc.
EIA	U.S. Energy Information Administration
FERC	Federal Energy Regulatory Commission
GIS	geographic information system
HUC	hydrologic unit codes
LDC	local distribution companies
M&R	metering and regulating
MMDth/d	million dekatherms per day
MP	milepost
NEPA	National Environmental Policy Act
NWI	National Wetlands Inventory
PEM	palustrine emergent wetland
PFO	palustrine forested wetland
Plan	Upland Erosion Control, Revegetation, and Maintenance Plan
Procedures	Wetland and Waterbody Construction and Mitigation Procedures
Project	Atlantic Coast Pipeline
PSS	palustrine scrub-shrub wetland
SHP	Supply Header Project
SPCC Plan	Spill Prevention, Control, and Countermeasures Plan
SSURGO	Soil Survey Geographic Database
Transco	Transcontinental Gas Pipe Line Company, LLC
UNT	Unnamed Tributary
USACE	U.S. Army Corps of Engineers
USFS	U.S. Forest Service
USGS	U.S. Geological Survey

1.0 OVERVIEW AND PROJECT DESCRIPTION

Atlantic Coast Pipeline, LLC (Atlantic) is a company formed by four major U.S. energy companies—Dominion Resources, Inc. (Dominion) (NYSE: D); Duke Energy Corporation (NYSE: DUK); Piedmont Natural Gas Co., Inc. (NYSE: PNY); and AGL Resources, Inc. (NYSE: GAS). The company was created to develop, own, and operate the proposed Atlantic Coast Pipeline (ACP or Project), an approximately 603.8-mile-long interstate natural gas transmission pipeline system designed to meet growing energy needs in Virginia and North Carolina (see Appendix A, figure 1). The ACP will be capable of delivering up to 1.5 million dekatherms per day (MMDth/d) of natural gas that will be used to generate electricity, heat homes, and run local businesses. The Project will facilitate cleaner air, increase the reliability and security of natural gas supplies, and provide a significant economic boost in West Virginia, Virginia, and North Carolina. More information is provided at the company's website at www.dom.com/acpipeline. Atlantic has contracted with Dominion Transmission, Inc. (DTI), a subsidiary of Dominion, to permit, build, and operate the ACP on behalf of Atlantic.

Atlantic is seeking authorization from the Federal Energy Regulatory Commission (FERC or Commission) under Section 7(c) of the Natural Gas Act to construct, own, operate, and maintain the following proposed facilities for the ACP system:

Mainline Pipeline Facilities:

- AP-1: approximately 333.1 miles of underground 42-inch outside diameter natural gas transmission pipeline in Harrison, Lewis, Upshur, Randolph, and Pocahontas Counties, West Virginia; Highland, Bath, Augusta, Nelson, Buckingham, Cumberland, Prince Edward, Nottoway, Dinwiddie, Brunswick, and Greensville Counties, Virginia; and Northampton County, North Carolina.
- AP-2: approximately 186.0 miles of underground 36-inch outside diameter natural gas transmission pipeline in Northampton, Halifax, Nash, Wilson, Johnston, Sampson, Cumberland, and Robeson Counties, North Carolina.

Lateral Pipeline Facilities:

- AP-3: approximately 83.2 miles of underground 20-inch outside diameter natural gas lateral pipeline in Northampton County, North Carolina; and Greensville and Southampton Counties and the Cities of Suffolk and Chesapeake, Virginia.
- AP-4: approximately 0.4 mile of underground 16-inch outside diameter natural gas lateral pipeline in Brunswick County, Virginia.
- AP-5: approximately 1.0 mile of underground 16-inch outside diameter natural gas lateral pipeline in Greensville County, Virginia.

Compressor Station Facilities:

- Compressor Station 1 (Marts Compressor Station): a new, natural gas-fired compressor station approximately at milepost [1] (MP) 7.6 of the AP-1 mainline in Lewis County, West Virginia.
- Compressor Station 2 (Buckingham Compressor Station): a new, natural gas-fired compressor station approximately at MP 191.5 of the AP-1 mainline in Buckingham County, Virginia.
- Compressor Station 3 (Northampton Compressor Station): a new natural gas-fired compressor station approximately at MP 300.1 of the AP-1 mainline and MP 0.0 of the AP-2 mainline in Northampton County, North Carolina.

Other Aboveground Facilities:

- Nine new metering and regulating (M&R) stations at receipt and/or delivery points along the new pipelines (including one at Compressor Station 1 and one at Compressor Station 2).
- Forty-one valve sites at select points along the new pipelines, at intervals specified by U.S. Department of Transportation regulations at Title 49 Code of Federal Regulations (CFR) Part 192.
- Ten sets of pig launchers and/or receiver sites at 13 points along the new pipelines (including launcher/receiver sites at Compressor Stations 2 and 3).

Approximately 98.6 miles of the Project occurs within West Virginia. Counties crossed by Project facilities within West Virginia include Harrison, Lewis, Upshur, Randolph, and Pocahontas Counties (see Appendix A, figure 2). The construction of the Project will result in temporary impacts on wetlands and waterbodies crossed by the pipeline.

2.0 TYPE OF OPERATIONS

The ACP is a proposed natural gas transmission pipeline. Project facilities within West Virginia include:

- approximately 98.6 miles of pipeline;
- Compressor Station 1: a new, natural gas-fired compressor station at approximate MP 7.6 of the AP-1 mainline in Lewis County, West Virginia;
- two metering and regulation stations at approximately MP 7.6 and MP 47.3 located within Lewis County and Randolph County, respectively;

[1] The mileposts used in this application are based on three-dimensional changes in topography (elevation) along the proposed pipeline routes. The straight-line distance between two mileposts depicted on two-dimensional route maps and figures may be less than 5,280 feet. The mileposts are reference points along the routes.

- seven valve sites within Lewis, Upshur, Randolph, and Pocahontas Counties, at MPs 7.5, 24.3, 41.3, 47.3, 59.6, 69.2, and 81.0; and
- one pig launcher/receiver site located at MP 0.0 in Harrison County, West Virginia.

Typical Design Drawings (Appendix F) and Compressor Station 1 Grading Design Plan (Appendix G) are provided as supplemental detail.

3.0 ACTIVITY PROPOSED IN STREAMS (WATERBODIES) OR WETLANDS

Atlantic began conducting wetland field surveys during the 2014 field season, on properties where survey permission was granted by the landowner, to identify and delineate wetlands within the ACP pipeline construction corridors and other work areas. The wetland delineation study area for the ACP consisted of a 300-foot-wide corridor centered on the proposed pipeline, a 50-foot-wide corridor centered over access roads, and the construction footprints at aboveground facility sites. Results of surveys within the study area are included in the Wetland and Waterbody Delineation Report included in Appendix B. Where field surveys were not able to be completed, due to lack of access to properties, a desktop assessment was completed to delineate wetlands and waterbodies using a combination of National Wetlands Inventory(NWI) data, U.S. Geological Survey (USGS) topographic maps, Soil Survey Geographic Database (SSURGO) data, and high resolution aerial photography. These features are identified under the “Desktop Features” portion of tables 4 and 6, and overall represent just 3.5 percent of the route remaining to be surveyed.

The ACP mainline pipeline and associated facilities will cross 98 perennial, 225 intermittent, and 76 ephemeral waterbodies; 17 open water ponds; 274 palustrine emergent wetlands (PEM); 20 palustrine scrub-shrub wetlands (PSS); and 30 palustrine forested wetlands (PFO) within West Virginia, as outlined in tables 4 and 6. Impacts resulting in permanent loss of waters are not anticipated as a result of mainline pipeline construction. However, permanent loss of waters will occur as a result of access road improvements. Permanent loss of 3.99 acres of wetland is anticipated as a result of the construction, maintenance, and operation of permanent access roads. Existing access roads will be utilized where feasible. Where access road improvements are necessary for use, loss of waters will be minimized to the maximum extent practicable, and will be minimized below 0.5 acre for each single and complete crossing to conform to U.S. Army Corps of Engineers (USACE) Nationwide Permit 12 thresholds.

The West Fork River and Greenbrier River are Section 10 Navigable Rivers, and additional details are provided in section 8.0, table 5, along with a site-specific drawing in Appendix C. A summary description of the anticipated direct and indirect environmental effects to waterbodies and wetlands within West Virginia that will result from the construction of the Project is provided below.

3.1 WATERBODIES

Atlantic will use the open cut, flume, dam-and-pump, or cofferdam methods to construct the pipeline across waterbodies. In West Virginia, the open cut, conventional bore, and horizontal directional drill methods are not currently proposed for use for waterbody crossings. A list of proposed crossing methods is included in table 4. Construction methods for waterbodies that isolate the pipeline trench from flowing water (e.g., flume, dam-and-pump, cofferdam) will be utilized where these methods are proposed and perceptible water flow is present at the time of construction across the waterbody. In each case and for each method, Atlantic will adhere to the measures specified in FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures) [2] unless site-specific modifications to the Procedures are requested by Atlantic and approved by FERC. Atlantic will also adhere to any additional requirements identified in Federal or State waterbody crossing permits. A description of the waterbody construction methods is provided in subsequent sections.

During the clearing and grading phase of construction, temporary bridges will be installed across waterbodies in accordance with the Procedures to allow construction equipment and personnel to cross. The bridges may include clean rock fill over culverts, timber mats supported by flumes, railcar flatbeds, flexi-float apparatuses, or other types of spans. Construction equipment will be required to use the bridges, except that the clearing and bridge installation crews will be allowed one pass through waterbodies before bridges are installed. The temporary bridges will be removed when construction and restoration activities are complete.

Additional temporary workspace (ATWS) will be required on both sides of waterbody crossings to stage construction equipment, fabricate the pipeline, and store construction materials outside of the narrowed workspace at crossings. The ATWS will be located at least 50 feet away from the water's edge (100 feet in the National Forests) at each waterbody (with the exception of site-specific modifications as requested by Atlantic and approved by FERC and where the adjacent upland consists of cultivated or rotated cropland or other disturbed land).

Clearing adjacent to waterbodies will involve the removal of trees and brush from the construction right-of-way and ATWS areas. Woody vegetation within the construction right-of-way will be cut to ground level with stumps in place, while stumps over the trench will be removed. Stumps along the waterbody banks will only be removed over the trench or where necessary for installation of bridges/timber mats for safety reasons. Sediment barriers may be installed at the top of the bank if no herbaceous strip exists. Initial grading of the herbaceous strip will be limited to the extent needed to create a safe approach to the waterbody and to install temporary bridges.

During clearing, sediment barriers will be installed and maintained across the right-of-way adjacent to waterbodies and within ATWS to minimize the potential for sediment runoff. Erosion control devices located across the working side of the right-of-way will be removed during the day when vehicle traffic is present, and will be replaced each night. Alternatively, drivable berms may be installed and maintained across the right-of-way in lieu of silt fences.

Typically, equipment refueling and lubricating at waterbodies will take place in upland areas that are 100 feet or more from the edge of the waterbody and any adjacent wetlands. However, there will be certain instances where equipment refueling and lubricating may be necessary in or near waterbodies. For example, stationary equipment, such as water pumps for withdrawing hydrostatic test water, may need to be operated continuously on the banks of waterbodies and may require refueling in place. Atlantic's *Spill Prevention, Control, and Countermeasures Plan* (SPCC Plan) will address, among other items, the handling of fuel and other materials associated with the Project. As required by the Procedures, the SPCC Plan will be available during construction on each construction spread. The SPCC Plan is included in Appendix D.

[2] Copies of FERC's Plan and Procedures are available on FERC's website at http://www.ferc.gov/industries/gas/enviro/guidelines.asp.

After the pipeline is installed across a waterbody using one of the methods described below, the trench will be backfilled with native material excavated from the trench. The top 12 inches of substrate will be segregated and returned to the surface at original grade after pipeline installation. If present and moved prior to construction, larger rocks or boulders will be replaced in the stream channel within the construction area following backfill of the trench. The streambed will be restored to pre-existing profile to prevent scouring. The stream banks will then be restored as near as practicable to pre-existing conditions and stabilized. Stabilization measures could include seeding, tree planting, installation of erosion control blankets, or installation of riprap materials, as appropriate. Jute thatching or bonded fiber blankets will be installed on banks of waterbodies or road crossings to stabilize seeded areas. Temporary erosion controls will be installed immediately following bank restoration. The waterbody crossing area will be inspected and maintained until restoration of vegetation is complete.

3.1.1 Flume Method

The flume crossing method consists of isolating and temporarily diverting the flow of water across the trenching area through one or more large-diameter, steel flume pipes placed in the waterbody. This method allows for trenching to occur within a relatively dry stream or riverbed (i.e., beneath the flume pipes containing the water flow) thereby avoiding sedimentation and turbidity in the waterbody. The flume method is typically used to cross small to intermediate flowing waterbodies that support coldwater or other significant fisheries.

For each waterbody where the flume method is implemented, a sufficient number of adequately sized flume pipes will be installed to accommodate the highest anticipated flows during construction. Atlantic and DTI will use stream gauge data from the USGS to determine the highest anticipated flows during the time the flume crossing is in effect. The duration of in-stream construction activities (excluding blasting or hoe-ramming, if required) will be limited to 24 hours across minor waterbodies and 48 hours across intermediate waterbodies. In the absence of stream gauge data, Atlantic and DTI engineers and Environmental Inspectors will estimate the highest anticipated flows based on the width of the waterbody at the ordinary high water mark, the depth of the waterbody, existing flows at the time of the crossing, and the weather forecast at the time of the crossing. As a contingency, Atlantic and DTI will stage additional flume pipes at the crossing in the event that the volume of flow increases due to a precipitation event.

Prior to installation, Atlantic and DTI will visually inspect the flume pipes to confirm that they are free of dirt, grease, oil, or other pollutants. After placing the pipes in the waterbody, sand- or pea gravel-filled bags, water bladders, or metal wing deflectors will be placed in the waterbody around the flume pipes upstream and downstream of the proposed trench. These devices will serve to dam the stream and divert the water flow through the flume pipes thereby isolating the water flow from the construction work area between the dams.

After installation of the flume pipes, the remaining standing water between the dams will be pumped out. Pump intakes will be appropriately screened to prevent entrainment of aquatic species. Any fish trapped in the dewatered area will be removed and returned to the flowing waterbody. Leakage from the dams or subsurface flow from below the waterbody bed may cause water to accumulate in the trench once trenching has begun. If water accumulates in this area, it may be periodically pumped out and discharged into energy dissipation/sediment filtration devices as required by the Procedures. Such devices include geotextile filter bags or straw bale (weed-free) structures. Alternatively, the water will be discharged into well-vegetated areas away from the edge of the waterbody, to prevent silt-laden water from entering the waterbody.

Backhoe-type excavators located on the banks of the waterbody, where feasible, will be used to excavate a trench under the flume pipe across the dewatered streambed. Spoil excavated from the waterbody trench will be stored on the bank above the high water mark and a minimum of 10 feet from the edge of the waterbody. Once the trench is excavated, a prefabricated segment of pipe will be installed beneath the flume pipes. The trench will then be backfilled with the native material excavated from the trench across the waterbody bed. The banks will be stabilized before removing the dams and flume pipes and returning flow to the waterbody channel.

The flume method has proven to be an effective technique for constructing pipelines across sensitive waterbodies. The potential for the introduction of turbidity or suspended sediments is limited, because sediment generated during trench excavation and backfilling operations is isolated to the dewatered area between dams. When flumes are installed properly, the operation of the flume is generally stable and can be left in place for periods prior to and following the installation of the waterbody pipeline crossing. The flume method also provides for continued fish passage through the construction work area via the flume pipes during the crossing.

3.1.2 Dam-and-Pump Method

The dam-and-pump method generally is preferred for smaller waterbodies, where mechanical pumps can dependably convey stream flows. In this approach, pumps and hoses are used instead of flume pipes to isolate and transport the stream flow around the construction work area. Similar to the flume method, the objective of the dam-and-pump method is to create a relatively dry work area to avoid or minimize the transportation of sediment and turbidity downstream of the crossing during in-stream work.

As the first step in implementing the dam-and-pump method, one or more pumps and hoses of sufficient size to transport anticipated flows will be installed adjacent to the waterbody. Additional back-up pumps will be on site at all times as a contingency, in case of pump failure. Once the pumps are operational, the waterbody upstream and downstream of the construction area will be dammed with sandbags and/or steel plates. As the dams are installed, the pumps will be started to maintain continuous flow in the waterbody.

Following the installation of the dams, the pumps will be run continuously until the pipeline is installed across the waterbody and the streambed and banks are restored. Pump intakes above the upstream dam will be appropriately screened to prevent entrainment or impingement of aquatic species. Energy-dissipation devices, such as splash blocks, filter bags, or energy dissipation sleeves, will be used to prevent scouring of the streambed at the discharge location. Water flow will be maintained through all but a short reach of the waterbody at the actual crossing location.

Backhoe-type excavators located on the banks of the waterbody will be used to excavate a trench across the waterbody. Spoil removed from the trench will be placed and stored on the bank above the high water mark at a minimum of 10 feet from the edge of the water. Trench plugs will be maintained between the upland trench and the waterbody crossing. After backfilling, the dams will be removed and the banks restored and stabilized as described above.

3.1.3 Cofferdam

Some waterbodies will be crossed using the cofferdam method. In this method, a temporary diversion structure is installed from the bank around half the width of the crossing to isolate that section of the stream from the rest of the waterbody. Once the temporary diversion structure is installed, water is pumped from the isolated section to allow excavation of the pipe trench from the bed of the waterbody in the dry. After the pipe is installed in the trench in the isolated section of stream, the temporary diversion structure is disassembled and then reinstalled from the opposite bank of the crossing and the process is repeated. The cofferdam method allows waterbodies to be crossed in the dry in discrete sections while water flows unimpeded around the temporary diversion structure. The method is sometimes favored for wide, relatively shallow waterbodies or waterbodies containing sensitive fisheries because it allows water and fish to pass around the temporary diversion structure.

For waterbodies crossed using the cofferdam method, sections of steel frame for the temporary diversion structure will be assembled in an upland area adjacent to the crossing. Depending on size, the frame sections will be placed in the waterbody either manually or by crane. The frame sections will be positioned around a predetermined perimeter in the waterbody extending from one of the banks. The spacing of frame sections will be based on the depth of the water, but a typical spacing will be 15 to 30 inches. The frame sections may be reinforced, as necessary, with steel poles or other supports to increase stability of the structure, especially in waterbodies with soft substrate. Fabric sheets will then be attached to the top of the frame and unrolled down and out onto the bed of the waterbody on the exterior side of the frame. The fabric sheets will create a liner around the frame with a seal on the bed of the waterbody. The fabric may be covered in soft sediments or sandbags to help create the seal.

After the temporary diversion structure is installed, one or more pumps will be used to dewater the area within the temporary diversion structure. Pump intakes will be appropriately screened to prevent entrainment of aquatic species. Water will be discharged to the waterbody outside the structure through an energy-dissipating device to prevent scouring of the bed at locations of discharge. Once dewatering is complete, any fish trapped in the temporary diversion structure will be removed and returned to the flowing waterbody. Construction equipment will enter the isolated section of the waterbody from the adjacent bank. This construction equipment will be used to excavate the trench, install a pre-assembled section of pipe, backfill the trench, and restore the bed as near as practicable to pre-construction contours. The equipment is removed from the temporary diversion structure via the adjacent bank.

After the section of pipeline is installed, the enclosed area within the temporary diversion structure will be flooded. Then the fabric sheets and steel frame sections will be disassembled. The structure will be reinstalled from the opposite bank, with enough overlap of the initial excavation area so that the installed section is accessible for tie-in to the next section of pipe. The dewatering and construction process is then repeated from the opposite bank, to complete the crossing of the waterbody.

3.1.4 Access Roads

Atlantic has identified roads which will be used to provide access to the Project construction rights-of-way, permanent easement, and other facilities during construction and operation of the ACP. Atlantic will utilize existing roads to the extent practicable, but some new roads may need to be built in remote areas. Additionally, new roads will need to be built to provide access to aboveground facility sites (i.e., compressor and M&R stations, valves, and pig launcher/receiver assemblies) during operations. In some cases, existing roads will require improvement (such as grading, gravelling, replacing or installing culverts, minor widening, and/or clearing of overhead vegetation) to safely accommodate construction equipment and vehicles. A sufficient number of roads with regular spacing is needed to minimize congestion of construction vehicles and equipment on the right-of-way, which otherwise would increase the duration of construction and create unsafe work conditions for workers. If any existing roads are damaged during construction, Atlantic will restore these roads to preconstruction condition or better.

Access road locations were identified based on the needs of construction and operations to provide sufficient ingress and egress to and from the proposed pipeline rights-of-way and aboveground facility sites. Impacts on wetlands and waterbodies will be avoided to the extent practicable by skirting wetlands or waterbodies, and where feasible necking down the access road. Along temporary access roads temporary timber construction mats, temporary bridges, culverts, or temporary rip rap will be utilized as a temporary means to stabilize access roads for use during construction. Permanent access roads however may require improvements, such as placement of culverts or widening of the roadbed that will remain in place for operation of the pipeline and associated facilities. The locations of access roads are provided on the aerial maps in Appendix A-4. For purposes of analysis of impacts, a maximum width of 30 feet for the access road has been assumed. Table 4 and 6 identifies access roads that are anticipated to impact waterbodies and wetlands during construction and/or operational activities.

3.2 WETLANDS

Construction across wetlands will be conducted in accordance with the Procedures, site-specific modifications to the Procedures requested by Atlantic and approved by FERC, and any additional requirements identified in Federal or State wetland crossing permits. Typical methods for construction across wetlands are described below.

In accordance with the Procedures, the width of the construction right-of-way will be limited to 75 feet through wetlands, with ATWS on both sides of wetland crossings to stage construction equipment and materials, fabricate the pipeline, and store materials and excavated temporary side-cast. ATWS will be located in upland areas a minimum of 50 feet from the wetland edge (with the exception of site-specific modifications as requested by Atlantic and approved by FERC and where the adjacent upland consists of cultivated or rotated cropland or other disturbed land).

Wetland boundaries will be clearly marked in the field prior to the start of construction with signs and flagging. Construction equipment working in wetlands will be limited to what is essential for right-of-way clearing, excavating the trench, fabricating and installing the pipeline, backfilling the trench, and restoring the right-of-way. In areas where there is no reasonable access to the right-of-way except through wetlands, non-essential equipment will be allowed to travel through wetlands once, unless the ground is firm enough or has been stabilized to avoid rutting.

Clearing of vegetation in wetlands will be limited to trees and shrubs, which will be cut flush with the surface of the ground and removed from the wetland. To avoid excessive disruption of wetland soils and the native seed and rootstock within the topsoil, stump removal, grading, topsoil segregation, and excavation will be limited to the area immediately over the trenchline, although a limited amount of stump removal and grading may be conducted in wetlands if required to address safety concerns. Topsoil segregation over the trenchline will only occur if the wetland soils are not saturated at the time of construction.

During clearing, sediment barriers such as silt fences or other approved sediment barriers will be installed and maintained adjacent to wetlands and within ATWS areas as necessary to minimize the potential for sediment runoff. Sediment barriers will be installed across the full width of the construction right-of-way at the base of slopes adjacent to wetland boundaries. Erosion control devices installed across the working side of the right-of-way will be removed during the day when vehicle traffic is present, and will be replaced each night. Alternatively, drivable berms may be installed and maintained across the right-of-way in lieu of silt fences. Sediment barriers will also be installed within wetlands along the edge of the right-of-way, where necessary, to minimize the potential for sediment to run off the construction right-of-way and into wetlands outside the work area. If trench dewatering is necessary, it will be conducted in accordance with the Procedures and applicable permits. Silt-laden trench water will be discharged into an energy dissipation/sediment filtration device, such as a geotextile filter bag and straw bale structure, to minimize the potential for erosion and sedimentation.

The method of pipeline construction used in wetlands will depend on site-specific weather conditions, soil saturation, and soil stability at the time of construction. If wetland soils are not excessively saturated at the time of construction and can support construction equipment on equipment mats, they will be crossed using conventional open-trench construction. This will occur in a manner similar to conventional upland cross-country construction techniques. In unsaturated wetlands, topsoil from the trenchline will be stripped and stored separately from subsoil.

Where wetland soils are saturated or in inundated lowlands areas where soils cannot support conventional pipe-laying equipment, the pipeline may be installed using the push-pull method. This method will involve stringing and welding the pipeline outside of the wetland and excavating and backfilling the trench using a backhoe supported by equipment mats. A prefabricated section of pipeline will be installed in the wetland by equipping it with buoys and pushing or pulling it across the water-filled trench. After the pipeline is floated into place, the floats will be removed and the pipeline will sink into place. In most cases, the pipeline will be coated with concrete (in uplands) or equipped with set-on weights to provide negative buoyancy. Once the pipeline is in place, the trench will be backfilled. The push-pull construction method minimizes the number of equipment passes, reducing wetland impacts and soil compaction in lowland areas.

Because little or no grading will occur in wetlands, restoration of contours will be accomplished during backfilling. Prior to backfilling, trench breakers will be installed, where necessary, to prevent subsurface drainage of water from wetlands. Where topsoil is segregated, the subsoil will be backfilled first followed by the topsoil. Topsoil will be replaced to the original ground level leaving no crown over the trenchline. In areas where wetlands overlie rocky soils, the pipe will be padded with rock-free soil or sand before backfilling with native bedrock and soil. Equipment mats, gravel fill, and/or geotextile fabric will be removed from wetlands following backfilling.

Where wetlands are located at the base of slopes, permanent slope breakers will be constructed across the right-of-way in upland areas adjacent to the wetland boundary. Temporary sediment barriers will be installed where necessary until revegetation of adjacent upland areas is successful. Once revegetation is successful, sediment barriers will be removed from the right-of-way and disposed of at an approved disposal facility.

Temporary access roads through wetlands will be altered for use during construction by using timber construction mats or other removable materials to minimize rutting in wetlands. Where intended for temporary use, the access road improvements within wetlands will be removed after construction and restoration is complete. Permanent access road improvements will require minor fill of wetlands. Where feasible, Dominion will continue to minimize impacts through necking down permanent access roads or improving areas within adjacent uplands to minimize wetland impacts. However, the loss of 3.99 acres of wetlands along access roads in West Virginia is anticipated due to permanent access road improvements.

4.0 PROJECT PURPOSE

The ACP is a proposed interstate natural gas transmission pipeline that will serve the growing energy needs of multiple public utilities and local distribution companies in Virginia and North Carolina. The natural gas transported by the ACP will be used as a fuel to generate electricity for industrial, commercial, and residential uses. The natural gas will also be used directly for residential, commercial, and industrial uses. By providing access to additional low-cost natural gas supplies, the ACP will increase the reliability and security of natural gas supplies in Virginia and North Carolina.

To meet the natural gas demand of its customers, the ACP will connect the growing demand areas in Virginia and North Carolina with growing supplies. Interstate natural gas pipelines act as common carriers to transport natural gas; they are not part of natural gas exploration or production activities. The Supply Header Project (SHP) links ACP with access to multiple supply basins throughout the United

States. The ACP and SHP will connect growing demand areas in Virginia and North Carolina with growing supply areas in the Appalachian region and provide access to the Dominion South Point supply hub, consisting of abundant supplies on the DTI system that are sourced from a wide variety of upstream pipeline interconnects and diverse production areas. More specifically, the ACP will provide up to 1.5 MMDth/d of natural gas transportation service into West Virginia, Virginia, and North Carolina.

The ACP will receive gas on behalf of its customers at two new interconnections: one between the ACP and the associated SHP (both existing facilities and new facilities proposed for the SHP) in Harrison County, West Virginia, to be known as the Marts Junction Interconnection; and one between the ACP and existing Transcontinental Gas Pipe Line Company, LLC (Transco) facilities in Buckingham County, Virginia, to be known as the Buckingham Interconnect. The natural gas will be delivered to various new customer interconnects in West Virginia, Virginia, and North Carolina. Additionally, the ACP will lease capacity on a pipeline owned and operated by Piedmont Natural Gas Co., Inc., to enable certain deliveries in North Carolina.

Of the new firm transportation capacity of up to 1.5 MMDth/d proposed by the ACP, 1.44 MMDth/d (96 percent) is currently subscribed pursuant to precedent agreements with six customers. These customers are major utilities and local distribution companies in the region. The precedent agreements demonstrate the need for the Projects, the demand for new gas supplies indicated in the studies noted above, and the desire for access to a new supply region. The remaining unsubscribed capacity will be awarded and contracted for in accordance with FERC policies applicable to open-access interstate pipelines and the provisions of applicable FERC gas tariffs. The natural gas supplied to each delivery point will be provided to local distribution companies (LDC), power generators, and other interstate pipeline companies.

5.0 PROJECT LOCATION

5.1 COUNTY

The project will be located in Harrison, Lewis, Upshur, Randolph, and Pocahontas Counties, West Virginia. Table 1 provides the length of the ACP in each of the counties in West Virginia crossed.

TABLE 1

Proposed Pipeline Facilities for the Atlantic Coast Pipeline [a]

Pipeline Facility	County/City and State	Begin Milepost [b]	End Milepost [b]	Length (miles)
AP-1	Harrison County, WV	0.0	1.1	1.1
	Lewis County, WV	1.1	21.4	19.9
	Upshur County, WV	21.4	43.9	22.2
	Randolph County, WV	43.9	66.6	30.2
	Pocahontas County, WV	66.6	83.9	25.2
			Total	**98.6**

[a] The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.

[b] The mileposts used in the initial FERC Application, which was filed on September 18, 2015 (FERC Accession Number 20150918-5212), were based on three-dimensional changes in topography along the proposed pipeline routes. In areas where a pipeline route has changed due to the adoption of an alternative, the mileposts in the affected area have been scaled to account for the resulting difference in the length of the route. For these reasons, the straight-line distance between consecutive mileposts as indicated or depicted in tables and figures in this application may be greater than or less than 5,280 feet. The mileposts should be considered as reference points only.

5.2 NEAREST TOWN

The project is a linear natural gas pipeline, which traverses approximately 98.6 miles of primarily rural land. The largest community near which ACP runs nearest is Buckhannon, West Virginia, approximately 2 miles from pipeline MP 27. See Appendix A, figure 1, figure 2, and figure set 3 for project location information pertaining to other municipalities near the project route.

5.3 COORDINATES

The ACP Project route origin at approximate MP 0.0 is located at coordinates 39.171061^{o} N, -80.560087^{o} W, and the project exits the state of West Virginia into Virginia at approximately MP 83.9, at coordinates 38.305039^{o} N, -79.810142^{o} W. Coordinates for the approximate center of each waterbody and wetland crossed are included in tables 4 and 6.

5.4 DIRECTIONS TO SITE

Much of the Project is located in rural and remote areas of West Virginia, and due to the linear nature of the Project, providing a descriptive list of directions to the Project site is not practical. In lieu of a description to the project area, public roads are illustrated on maps included in Appendix A, figure 2 and figure sets 3, 4, and 5: these maps identify major roads in proximity to the Project.

In addition table 2 provides the USGS topographic quadrangle map names crossed by approximate milepost.

TABLE 2

U.S. Geological Survey 7.5-Minute Quadrangle Maps Crossed by the Atlantic Coast Pipeline in West Virginia

USGS 7.5-Minute Quadrangle Name	Approximate Mileposts [a]
Big Isaac	0.0 – 5.3
West Milford	5.3 - 9.6
Weston	9.6 - 16.7
Berlin	16.7 – 24.2
Adrian	24.2 – 30.5
Buckhannon	30.5 – 37.4
Alton	37.4 – 42.3
Cassity	42.3 – 48.6
Adolph	448.6– 52.0
Pickens	52.0 – 56.0
Samp	56.0 – 61.8
Valley Head	61.8 – 64.0
Mingo	64.0 – 71.6
Edray	71.6 – 75.4
Clover Lick	75.4 – 80.9
Paddy Knob	80.9 – 83.9

[a] The mileposts used in the initial FERC Application, which was filed on September 18, 2015 (FERC Accession Number 20150918-5212), were based on three-dimensional changes in topography along the proposed pipeline routes. In areas where a pipeline route has changed due to the adoption of an alternative, the mileposts in the affected area have been scaled to account for the resulting difference in the length of the route. For these reasons, the straight-line distance between consecutive mileposts as indicated or depicted in tables and figures in this application may be greater than or less than 5,280 feet. The mileposts should be considered as reference points only.

6.0 WATERSHED NAME AND SIZE

The USGS has organized watersheds of the United States into seven successively smaller levels of subdivisions using hydrologic unit codes (HUC). The project occurs within four HUC 8 watersheds. Information on the watersheds crossed by the proposed ACP facilities within West Virginia is summarized in table 3.

TABLE 3

Watersheds Crossed by the Atlantic Coast Pipeline in West Virginia

HUC 8 Watershed	Approximate Mileposts [a]	Watershed Size (acres)
West Fork Watershed (05020002)	0–21.1; 24.9–25.0; 26.3–27.1	563,046
Tygart Valley Watershed (05020001)	21.1–24.9; 25.0–26.3; 27.0–56.2; 63.0–66.1	879,747
Elk Watershed (05050007)	56.2–63.0; 66.1–71.7	1,604,945
Greenbrier Watershed (05050003)	71.7–83.9	1,052,062

[a] The mileposts used in the initial FERC Application, which was filed on September 18, 2015 (FERC Accession Number 20150918-5212), were based on three-dimensional changes in topography along the proposed pipeline routes. In areas where a pipeline route has changed due to the adoption of an alternative, the mileposts in the affected area have been scaled to account for the resulting difference in the length of the route. For these reasons, the straight-line distance between consecutive mileposts as indicated or depicted in tables and figures in this application may be greater than or less than 5,280 feet. The mileposts should be considered as reference points only.

7.0 NAME OF STREAM(S) WHERE WORK WILL OCCUR AND RECEIVING STREAMS TO WHICH THEY DRAIN

Table 4 includes the location information, name of the waterbody, physical characteristics, crossing methods, and length of the waterbody that will be temporarily affected during construction. In addition, the waterbodies are grouped according to the HUC 8 watershed within which they occur to identify the major tributary to which each waterbody drains. Field surveys have been completed on the majority of the Project in West Virginia (approximately 96.5 percent complete), and these features are identified under the “Field Survey Features” portion of the table. No impacts are anticipated at the aboveground facilities. Where access road improvements are necessary for use, loss of waters will be minimized to the maximum extent practicable, and will be minimized below 0.5 acre for each single and complete crossing to conform to USACE Nationwide Permit 12 thresholds.

TABLE 4-1

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Pipeline Construction Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID [a]	Waterbody Name [b]	Flow Regime	Approximate Pipeline Crossing Width (feet)	Temporary Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
HUC 8 - 05020002									
0.0	shaa002	Tanner Fork	Perennial	N/A	27	Not Crossed by Centerline	B1	39.17110	-80.55983
0.0	shaa001	UNT to Tanner Fork	Perennial	3	128	1) Dam and Pump 2) Flume	UNT to B1	39.17127	-80.56065
0.5	shaa003	UNT to Tanner Fork	Intermittent	4	91	Dam and Pump	UNT to B1	39.16563	-80.55982
1.1	slea001	Kincheloe Creek	Perennial	13	137	1) Dam and Pump 2) Flume	B1, HQS	39.15935	-80.55267
1.5	slea002	Sand Fork	Perennial	12	139	1) Dam and Pump 2) Flume	B1, HQS	39.15434	-80.55410
2.4	slea003	UNT to Kincheloe Creek	Intermittent	21	169	Dam and Pump	UNT to B1	39.14792	-80.54485
4.0	sleb001	UNT to Hog Camp Run	Intermittent	5	161	Dam and Pump	UNT to B1	39.14071	-80.52109
4.0	sleb002	Hog Camp Run	Perennial	40	132	1) Flume 2) Dam and Pump	B1	39.14002	-80.52038
5.0	sleb004	Elk Lick	Intermittent	4	133	Dam and Pump	B1	39.14131	-80.50501
5.7	sleb005	Turkeypen Creek	Perennial	8	126	1) Dam and Pump 2) Flume	B1	39.14298	-80.49261
5.7	sleb006	UNT to Turkeypen Creek	Intermittent	N/A	52	Not Crossed by Centerline	UNT to B1	39.14276	-80.49226
7.2	sleb105e	UNT to Hollick Run	Ephemeral	N/A	99	Not Crossed by Centerline	UNT to B1	39.14111	-80.47120
7.5	oleb100	UNT to Kincheloe Creek	Pond	N/A	N/A	Compressor Station - Temporary Impact	N/A	39.14110	-80.46346
7.6	sleb008	UNT to Hollick Run	Intermittent	N/A	708	Compressor Station - Temporary Impact	UNT to B1	39.13731	-80.46424
7.7	sleb104i	UNT to Hollick Run	Intermittent	N/A	474	Compressor Station - Temporary Impact	UNT to B1	39.13946	-80.46236

TABLE 4-1

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Pipeline Construction Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID [a]	Waterbody Name [b]	Flow Regime	Approximate Pipeline Crossing Width (feet)	Temporary Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
7.7	sleb104	UNT to Hollick Run	Intermittent	N/A	396	Compressor Station - Temporary Impact	UNT to B1	39.13856	-80.46148
7.7	slea004	Hollick Run	Perennial	9	1613	Compressor Station - Temporary Impact	B1	39.13727	-80.46288
8.2	sleb009	West Fork River	Perennial	91	125	Cofferdam	A, B1, HQS	39.13531	-80.45625
9.4	slea008	Broad Run	Perennial	11	189	1) Dam and Pump 2) Flume	B1	39.12738	-80.44372
10.2	slea009	UNT to Broad Run	Intermittent	4	130	Dam and Pump	UNT to B1	39.11743	-80.44136
11.8	slea012	UNT to Hackers Creek	Intermittent	4	124	Dam and Pump	UNT to A, B1, HQS	39.10757	-80.41935
11.8	slea013	UNT to Hackers Creek	Intermittent	N/A	88	Not Crossed by Centerline	UNT to A, B1, HQS	39.10733	-80.41959
12.5	sleb013	UNT to West Run	Intermittent	N/A	161	Not Crossed by Centerline	UNT to B1	39.09991	-80.41372
12.5	sleb012	UNT to West Run	Perennial	2	139	Dam and Pump	UNT to B1	39.09952	-80.41272
12.6	sleb011	West Run	Perennial	14	196	1) Flume 2) Dam and Pump	B1	39.09901	-80.41149
13.7	slec002	UNT to Lifes Run	Intermittent	4	75	1) Dam and Pump 2) Flume	UNT to B1	39.08698	-80.40410
13.8	sleh001	UNT to Lifes Run	Intermittent	N/A	46	Not Crossed by Centerline	UNT to B1	39.08589	-80.40291
14.3	sleh002	Lifes Run	Perennial	20	132	1) Flume 2) Dam and Pump	B1	39.08187	-80.39506
14.5	sleh009	UNT to Lifes Run	Perennial	4	76	Dam and Pump	UNT to B1	39.08062	-80.39309
14.8	sleh008	UNT to Hackers Creek	Intermittent	14	231	Dam and Pump	UNT to A, B1, HQS	39.07646	-80.38923
15.0	sleb110	UNT to Hackers Creek	Ephemeral	3	153	1) Dam and Pump 2) Flume	UNT to A, B1, HQS	39.07471	-80.39010
15.0	sleb109	UNT to Hackers Creek	Intermittent	5	80	Dam and Pump	UNT to A, B1, HQS	39.07445	-80.38990

TABLE 4-1

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Pipeline Construction Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID [a]	Waterbody Name [b]	Flow Regime	Approximate Pipeline Crossing Width (feet)	Temporary Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
15.5	sleb111	UNT to Hackers Creek	Perennial	13	133	Dam and Pump	UNT to A, B1, HQS	39.06864	-80.38465
16.3	sleb113	UNT to Hackers Creek	Intermittent	2	124	Dam and Pump	UNT to A, B1, HQS	39.05975	-80.37995
16.4	sleb112	UNT to Hackers Creek	Perennial	4	108	Dam and Pump	UNT to A, B1, HQS	39.05932	-80.37962
17.2	sleb114	UNT to Hackers Creek	Perennial	7	138	1) Dam and Pump 2) Flume	UNT to A, B1, HQS	39.05248	-80.36840
18.1	sleb116	UNT to Laurel Lick	Intermittent	N/A	14	Not Crossed by Centerline	UNT to B1	39.04573	-80.35770
18.1	sleb115	Laurel Lick	Intermittent	5	130	1) Flume 2) Dam and Pump	B1	39.04589	-80.35726
19.9	slea023	UNT to Buckhannon Run	Intermittent	4	129	Dam and Pump	UNT to B1	39.03572	-80.33635
20.3	sleb018	Buckhannon Run	Perennial	6	9	Dam and Pump	B1	39.03467	-80.32937
20.6	sleb019	UNT to Buckhannon Run	Intermittent	3	148	Dam and Pump	UNT to B1	39.03410	-80.32405
HUC 8 – 05020001									
23.3	supa001	Fink Run	Perennial	10	125	1) Dam and Pump 2) Flume	B1	39.01086	-80.29260
24.0	supa002	UNT to Fink Run	Intermittent	4	82	Dam and Pump	UNT to B1	39.00207	-80.29121
24.6	supa003	UNT to Brushy Fork	Intermittent	4	225	Dam and Pump	UNT to B1	38.99400	-80.28770
24.7	supa005	UNT to Brushy Fork	Intermittent	2	78	Dam and Pump	UNT to B1	38.99318	-80.28773
25.4	supb001	UNT to Brushy Fork	Intermittent	1	90	Dam and Pump	UNT to B1	38.98437	-80.28438
25.8	supb003	UNT to Brushy Fork	Intermittent	2	125	Dam and Pump	UNT to B1	38.98213	-80.27824
25.8	supc102	UNT to Brushy Fork	Intermittent	N/A	560	Contractor/ Pipeyard - Temporary Impact	B1	38.99292	-80.27031
26.0	supb004	Brushy Fork	Perennial	16	87	1) Flume 2) Dam and Pump	B1	38.98032	-80.27538
28.4	supb005	UNT to Lick Run	Intermittent	2	131	Dam and Pump	UNT to B1	38.95390	-80.25327
28.5	oupa001	Unnamed Pond	Pond	N/A	N/A	Not Crossed by Centerline	N/A	38.95351	-80.25312
29.2	supb006	Cutright Run	Perennial	23	221	1) Dam and Pump 2) Flume	B1	38.94494	-80.25168

TABLE 4-1

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Pipeline Construction Impacts

	Waterbody				Crossing		Special Designations		
Milepost	Feature ID [a]	Waterbody Name [b]	Flow Regime	Approximate Pipeline Crossing Width (feet)	Temporary Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
29.9	supb007	UNT to French Creek	Perennial	6	76	1) Flume 2) Dam and Pump	UNT to B2, HQS	38.93544	-80.25547
30.5	supa006	UNT to French Creek	Perennial	N/A	91	Not Crossed by Centerline	UNT to B2, HQS	38.92920	-80.24897
30.9	supa007	UNT to French Creek	Intermittent	3	107	Dam and Pump	UNT to B2, HQS	38.92647	-80.24441
31.1	supa008	French Creek	Perennial	39	126	Cofferdam	B2, HQS	38.92619	-80.24017
31.7	supa009	Buckhannon River	Perennial	89	125	Cofferdam	A, B2, HQS	38.92500	-80.23079
32.1	supa011	UNT to Trubie Run	Intermittent	6	143	Dam and Pump	UNT to B1	38.92393	-80.22396
33.0	supb009	UNT to Trubie Run	Perennial	5	126	Dam and Pump	UNT to B1	38.92149	-80.21113
34.1	supa012	UNT to Buckhannon Run	Ephemeral	3	150	Dam and Pump	UNT to A, B2, HQS	38.90809	-80.20358
34.4	supa013	Grassy Run	Perennial	25	129	1) Flume 2) Dam and Pump	B1	38.90285	-80.20277
36.1	supb010	Gravel Run	Perennial	21	79	1) Flume 2) Dam and Pump	B1	38.88700	-80.18951
36.1	supa014	UNT to Gravel Run	Intermittent	5	85	1) Dam and Pump 2) Flume	UNT to B1	38.88679	-80.18931
36.8	supb011	Laurel Run	Perennial	21	0	1) Dam and Pump 2) Flume	B1	38.88035	-80.18424
37.8	supa016	Tenmile Creek	Perennial	17	128	1) Dam and Pump 2) Flume	HQS	38.87164	-80.17576
37.9	supa017	UNT to Tenmile Creek	Intermittent	8	126	Dam and Pump	UNT to HQS	38.86978	-80.17562
37.9	oupa003	Unnamed Pond	Pond	N/A	N/A	Not Crossed by Centerline	N/A	38.86917	-80.17596
39.6	supa019	Tenmile Creek	Intermittent	8	169	Dam and Pump	HQS	38.85318	-80.15903
40.5	supb013	UNT to Leonard Run	Intermittent	2	139	Dam and Pump	UNT to B1	38.84774	-80.14482
40.7	supb012	UNT to Leonard Run	Intermittent	5	119	Dam and Pump	UNT to B1	38.84692	-80.14189
41.3	supa015	Right Fork Middle Fork River	Perennial	44	130	1) Flume 2) Cofferdam	B2, HQS	38.84055	-80.13498
45.4	srab101	UNT to Jenks Fork	Intermittent	4	128	Dam and Pump	Unclassified	38.79706	-80.09550
47.0	srab103	UNT to Long Run	Intermittent	4	132	Dam and Pump	UNT to HQS	38.77529	-80.09485
47.1	sraa066	UNT to Long Run	Intermittent	4	145	1) Flume 2) Dam and Pump	UNT to HQS	38.77382	-80.09302

TABLE 4-1

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Pipeline Construction Impacts

	Waterbody				Crossing		Special Designations		
Milepost	Feature ID [a]	Waterbody Name [b]	Flow Regime	Approximate Pipeline Crossing Width (feet)	Temporary Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
47.4	srab104	UNT to Sugar Run	Intermittent	5	129	Dam and Pump	UNT to B1	38.76990	-80.09222
50.2	srac100	UNT to Dry Run	Intermittent	N/A	61	Not Crossed by Centerline	UNT to B1	38.72214	-80.10986
50.4	srac101	UNT to Dry Run	Intermittent	6	169	1) Dam and Pump 2) Flume	UNT to B1	38.71939	-80.11041
50.4	srac102	UNT to Dry Run	Ephemeral	3	71	1) Dam and Pump 2) Flume	UNT to B1	38.71921	-80.11035
50.5	srac103	Dry Run	Perennial	23	129	Dam and Pump	B1	38.71629	-80.11225
50.6	sraa400	UNT to Dry Run	Intermittent	N/A	11	Not Crossed by Centerline	UNT to B1	38.71532	-80.11366
50.7	sraa401	UNT to Dry Run	Intermittent	4	82	1) Dam and Pump 2) Flume	UNT to B1	38.71264	-80.11387
50.8	sraa403	UNT to Dry Run	Intermittent	N/A	92	Not Crossed by Centerline	UNT to B1	38.71163	-80.11428
50.8	sraa402	Dry Run	Intermittent	7	130	1) Dam and Pump 2) Flume	UNT to B1	38.71141	-80.11403
50.9	srae002	UNT to Dry Run	Intermittent	4	127	1) Dam and Pump 2) Flume	UNT to B1	38.70900	-80.11267
51.4	sraa405	UNT to Lick Run	Intermittent	4	213	1) Flume 2) Dam and Pump	UNT to B1	38.70032	-80.11595
51.6	sraa407	UNT to Lick Run	Intermittent	6	138	1) Dam and Pump 2) Flume	UNT to B1	38.69705	-80.11803
52.1	sraa408	Beech Run	Perennial	27	130	1) Dam and Pump 2) Flume	HQS	38.68978	-80.12691
54.3	sraa409	phillips camp run	Perennial	29	131	1) Dam and Pump 2) Flume	HQS	38.65575	-80.14989
55.0	sraa411	short run	Perennial	9	149	1) Dam and Pump 2) Flume	UNT to B1	38.64453	-80.15512
55.3	srap001	UNT to Long Run	Intermittent	5	133	1) Dam and Pump 2) Flume	HQS	38.63768	-80.15674
55.3	srap002	Long Run	Perennial	13	128	1) Dam and Pump 2) Flume	HQS	38.63758	-80.15702
56.1	srap007	UNT to Left Fork Buckhannon R	Intermittent	4	273	1) Dam and Pump 2) Flume	UNT to HQS	38.62186	-80.15583
HUC 8 – 05050007									

TABLE 4-1

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Pipeline Construction Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID [a]	Waterbody Name [b]	Flow Regime	Approximate Pipeline Crossing Width (feet)	Temporary Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
56.3	srae136	UNT to Left Fork Buckhannon	Intermittent	8	96	Dam and Pump	UNT to HQS	38.61917	-80.15636
56.3	orap001	Unnamed Pond	Pond	N/A	N/A	Not Crossed by Centerline	N/A	38.61905	-80.15595
56.5	srap010	UNT to Back Fork Elk River	Intermittent	3	114	1) Dam and Pump 2) Flume	Unclassified	38.61566	-80.15599
56.7	srae103	UNT to Back Fork Elk River	Intermittent	4	127	1) Dam and Pump 2) Flume	Unclassified	38.61009	-80.15612
57.0	srae100	UNT to Back Fork Elk River	Intermittent	5	120	1) Dam and Pump 2) Flume	Unclassified	38.60590	-80.15886
57.1	srae101	UNT to Back Fork Elk River	Intermittent	14	142	1) Dam and Pump 2) Flume	Unclassified	38.60460	-80.16219
57.2	srae102	UNT to Back Fork Elk River	Intermittent	N/A	64	Not Crossed by Centerline	Unclassified	38.60359	-80.16459
58.2	srae159	Back Fork Elk River	Perennial	30	131	1) Dam and Pump 2) Flume	Unclassified	38.58545	-80.15926
60.7	srae110	UNT to Valley Fork	Intermittent	8	243	1) Dam and Pump 2) Flume	Unclassified	38.53996	-80.13665
60.7	srae111	Valley Fork	Perennial	50	125	1) Dam and Pump 2) Flume	Unclassified	38.53958	-80.13642
60.7	srae112	UNT to Valley Fork	Intermittent	8	135	1) Dam and Pump 2) Flume	Unclassified	38.53938	-80.13631
60.8	srae118	UNT to Valley Fork	Ephemeral	7	146	1) Flume 2) Dam and Pump	Unclassified	38.53774	-80.13603
60.8	srae119	UNT to Valley Fork	Ephemeral	9	131	1) Dam and Pump 2) Flume	Unclassified	38.53750	-80.13589
60.9	srae120	UNT to Valley Fork	Ephemeral	11	296	1) Dam and Pump 2) Flume	Unclassified	38.53597	-80.13560
61.0	srae121	UNT to Valley Fork	Ephemeral	6	152	1) Dam and Pump 2) Flume	Unclassified	38.53303	-80.13468
61.1	srae122	UNT to Valley Fork	Ephemeral	6	246	1) Dam and Pump 2) Flume	Unclassified	38.53222	-80.13463
61.3	srae134	UNT to Elk River	Intermittent	N/A	69	Not Crossed by Centerline	UNT to HQS	38.52927	-80.13456

TABLE 4-1

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia Pipeline Construction Impacts

	Waterbody				Crossing		Special Designations		
Milepost	Feature ID [a]	Waterbody Name [b]	Flow Regime	Approximate Pipeline Crossing Width (feet)	Temporary Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
61.7	orae113	Unnamed Pond	Pond	N/A	N/A	Not Crossed by Centerline	N/A	38.52408	-80.12603
62.0	srae131	UNT to Elk River	Intermittent	N/A	116	Not Crossed by Centerline	UNT to HQS	38.52056	-80.12347
62.0	srae130	UNT to Elk River	Intermittent	7	144	1) Dam and Pump 2) Flume	UNT to HQS	38.51954	-80.12274
62.2	srae129	UNT to Elk River	Intermittent	3	75	1) Dam and Pump 2) Flume	UNT to HQS	38.51691	-80.12129
62.2	srae128	UNT to Elk River	Ephemeral	N/A	25	Not Crossed by Centerline	UNT to HQS	38.51628	-80.12127
62.9	orae112	Unnamed Pond	Pond	N/A	N/A	Not Crossed by Centerline	N/A	38.51229	-80.10812
64.2	orae111	Unnamed Pond	Pond	N/A	N/A	Not Crossed by Centerline	N/A	38.49914	-80.08786
64.2	orae110	Unnamed Pond	Pond	N/A	N/A	Not Crossed by Centerline	N/A	38.49908	-80.08775
HUC 8 – 05020001									
63.0	srae206	UNT to Elkwater Fork	Intermittent	N/A	0	Contractor/ Pipeyard - Temporary Impact	UNT to HQS	38.54927	-80.07677
65.3	srac112	UNT to Mingo Run	Intermittent	19	164	1) Dam and Pump 2) Flume	B1	38.48633	-80.06913
65.5	srae124	UNT to Mingo Run	Intermittent	9	151	1) Dam and Pump 2) Flume	UNT to B1	38.48377	-80.06641
HUC 8 – 05050007									
66.6	DKSF_WV_013	UNT to Douglas Fork	Intermittent	5	123	1) Dam and Pump 2) Flume	UNT to B1	38.46445	-80.06038
66.7	DKSF_WV_012	Douglas Fork	Intermittent	10	217	1) Dam and Pump 2) Flume	B1	38.46420	-80.06046
67.5	spoe017	Dry Fork	Intermittent	5	139	1) Dam and Pump 2) Flume	Unclassified	38.45017	-80.05730
69.0	DKSF_WV_016	UNT to Big Spring Fork	Intermittent	6	142	1) Dam and Pump 2) Flume	UNT to HQS	38.42330	-80.05016

TABLE 4-1

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Pipeline Construction Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID [a]	Waterbody Name [b]	Flow Regime	Approximate Pipeline Crossing Width (feet)	Temporary Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
69.0	DKSF_WV_017	UNT to Big Spring Fork	Intermittent	5	125	1) Dam and Pump 2) Flume	UNT to HQS	38.42294	-80.04986
69.2	spoe007	Big Spring Fork	Perennial	19	127	1) Dam and Pump 2) Flume	HQS	38.41948	-80.04869
70.4	spoy001	UNT to Mill Run	Intermittent	3	110	1) Flume 2) Dam and Pump	UNT to B1	38.39668	-80.04805
70.8	spoe004	UNT to Big Spring Fork	Intermittent	5	294	1) Dam and Pump 2) Flume	UNT to HQS	38.38860	-80.04939
HUC 8 – 05050003									
71.8	spoe001	UNT to Clover Creek	Ephemeral	N/A	0	Not Crossed by Centerline	Unclassified	38.37249	-80.06320
72.8	spoc107	UNT to Clover Creek	Ephemeral	N/A	78	Not Crossed by Centerline	Unclassified	38.35903	-80.05179
72.8	spoc106	UNT to Clover Creek	Perennial	23	127	1) Dam and Pump 2) Flume	Unclassified	38.35885	-80.05064
74.6	spoc120	UNT to Clover Creek	Perennial	19	95	1) Dam and Pump 2) Flume	Unclassified	38.34550	-80.01155
75.2	spoe032	UNT to Clover Creek	Intermittent	8	139	1) Flume 2) Dam and Pump	Unclassified	38.33434	-80.00334
75.5	spoc101	Clover Creek	Perennial	55	128	1) Dam and Pump 2) Flume	Unclassified	38.33377	-79.99574
75.5	spoc102	UNT to Clover Creek	Intermittent	7	136	1) Dam and Pump 2) Flume	Unclassified	38.33389	-79.99535
76.0	spoc104	Glade Run	Perennial	19	126	1) Dam and Pump 2) Flume	B1	38.33737	-79.98318
76.5	spoc119	UNT to Greenbrier River	Ephemeral	2	84	1) Dam and Pump 2) Flume	UNT to B1	38.33627	-79.97117
76.6	spoc118	Greenbrier River	Perennial	177	125	Cofferdam	B1, HQS	38.33429	-79.96853
76.9	spoe012	UNT to Laurel Run	Intermittent	8	144	1) Dam and Pump 2) Flume	UNT to B1, HQS	38.33227	-79.96226
77.3	spoe008	UNT to Mile Branch	Intermittent	6	138	1) Dam and Pump 2) Flume	UNT to B1	38.33212	-79.95208
77.3	spoe009	Mile Branch	Perennial	13	162	Dam and Pump	B1	38.33175	-79.95112
79.3	spoe013	Thomas Creek	Perennial	9	134	Dam and Pump	B1	38.31855	-79.90965

TABLE 4-1

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Pipeline Construction Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID [a]	Waterbody Name [b]	Flow Regime	Approximate Pipeline Crossing Width (feet)	Temporary Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
79.3	spoe014	Powder Lick Run	Intermittent	8	141	1) Dam and Pump 2) Flume	UNT to B1	38.31802	-79.90925
79.8	spoe010	UNT to Thomas Creek	Intermittent	6	143	1) Dam and Pump 2) Flume	UNT to B1	38.31497	-79.89884
80.9	spoe019	UNT to Sugar Camp Run	Intermittent	N/A	36	Not Crossed by Centerline	Unclassified	38.30258	-79.87533
81.0	spoe016	UNT to Sugar Camp Run	Intermittent	4	71	1) Dam and Pump 2) Flume	Unclassified	38.30159	-79.87320
81.1	spoe015	UNT to Sugar Camp Run	Intermittent	8	138	1) Dam and Pump 2) Flume	Unclassified	38.30039	-79.86933
81.5	spoa402	UNT to Sugar Camp Run	Intermittent	4	143	1) Dam and Pump 2) Flume	Unclassified	38.30221	-79.86047
82.0	spoa400	UNT to Shock Run	Perennial	12	134	1) Dam and Pump 2) Flume	UNT to Tier 3	38.30190	-79.84753
				Total	**20,647**				

[a] Waterbodies with a Feature ID starting with DKS represent waterbodies that are based on desktop review, and widths have been assumed as 10 feet wide for perennial and 5 feet wide for intermittent waterbodies in this dataset.

[b] UNT = Unnamed Tributary

[c] Affected Stream Length is a linear length of the waterbody, generally the centerline of the stream or one bank length within the project area. Waterbodies with an Affected Stream Length of N/A are ponds that were not assess for stream length impacts.

[d] West Virginia State Water Quality Classifications

- West Virginia Stream Water Use Categories:
- Category A—Public Water; Category B1—Warm Water Fishery; Category B2—Trout Waters;
- State Water Quality Classifications were determined using West Virginia Code of State Regulations, Title 47, Series 2 and communication with West Virginia Department of Environmental Protection (WVDEP) staff (Peterson, 2015). WVDEP considers all waters of the state Category A, B, and C waters. Waterbodies are assumed to be capable of supporting public water use. Those waterbodies listed in the table as Category A waters are waterbodies listed in appendices to West Virginia CSR, Title 47.
- High Quality Streams (HQS) are based on the Sixth Edition of the West Virginia High Quality Streams prepared by the Wildlife Resources Section of the West Virginia Division of Natural Resources.
- State regulations require the classification to extend into adjacent tributaries, indicated by UNT to [Stream Class] to indicate connected tributaries to classified waters.

TABLE 4-2

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Access Road Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID[a]	Waterbody Name[b]	Flow Regime	Potential Temporary Affected Stream Length [c] (feet)	Permanent Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
HUC 8 - 05020002									
0.0	shaa001	UNT to Tanner Fork	Perennial	31		Perm AR	UNT to B1	39.17127	-80.56065
0.4	shab101	Tanner Fork	Perennial	30		Perm AR	B1	39.16644	-80.55710
1.1	slea001	Kincheloe Creek	Perennial		43	Perm AR	B1, HQS	39.15935	-80.55267
2.4	slea003	UNT to Kincheloe Creek	Intermittent		188	Temp AR	UNT to B1	39.14792	-80.54485
2.5	sleb117	Kincheloe Creek	Perennial		30	Perm AR	B1, HQS	39.14958	-80.54139
3.0	sleb118	UNT to Hog Camp Run	Perennial	228		Perm AR	UNT to B1	39.14175	-80.53616
3.8	slea084	Hog Camp Run	Perennial		44	Perm AR	B1	39.14295	-80.51998
5.0	sleb119	UNT to Elk Lick	Intermittent		43	Perm AR	UNT to B1	39.14242	-80.50516
5.0	sleb004	Elk Lick	Perennial		40	Perm AR	B1	39.14241	-80.50498
9.9	sleb121	UNT to Broad Run	Intermittent	280		Perm AR	UNT to B1	39.12032	-80.43671
10.2	sleb120	Broad Run	Perennial	30		Perm AR	B1	39.11977	-80.43689
10.9	sleb120i	Broad Run	Intermittent		121	Perm AR	B1	39.11570	-80.43269
12.6	sleb011	West Run	Perennial	31		Perm AR	B1	39.09901	-80.41149
13.6	slec001	UNT to Lifes Run	Ephemeral		39	Perm AR	UNT to B1	39.08466	-80.40999
14.2	olec002	Unnamed Pond	Pond	NA	NA	Perm AR	NA	39.08389	-80.39627
14.3	slec005	Lifes Run	Perennial	30		Perm AR	B1	39.08508	-80.39192
14.4	slec003	UNT to Lifes Run	Intermittent	62		Perm AR	UNT to B1	39.08243	-80.39281
14.8	slea081	UNT to Hackers Creek	Intermittent		32	Temp AR	UNT to A, B1, HQS	39.07757	-80.38344
14.8	sleh008	UNT to Hackers Creek	Intermittent		33	Temp AR	UNT to A, B1, HQS	39.07646	-80.38923
14.8	slea082	UNT to Hackers Creek	Intermittent	32		Perm AR	UNT to A, B1, HQS	39.07578	-80.38630
15.3	slea079	UNT to Hackers Creek	Intermittent	32		Perm AR	UNT to A, B1, HQS	39.06638	-80.39202
15.4	olea075	Unnamed Pond	Pond	NA	NA	Perm AR	NA	39.06590	-80.38883
15.5	slea076	UNT to Hackers Creek	Intermittent	4		Perm AR	UNT to A, B1, HQS	39.06717	-80.38615
15.5	slea075	UNT to Hackers Creek	Intermittent	253		Perm AR	UNT to A, B1, HQS	39.06640	-80.38660

TABLE 4-2

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Access Road Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID[a]	Waterbody Name[b]	Flow Regime	Potential Temporary Affected Stream Length [c] (feet)	Permanent Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
15.6	slea080	Hackers Creek	Perennial	30		Perm AR	A, B1, HQS	39.07219	-80.38113
15.8	slea077	UNT to Hackers Creek	Ephemeral	74		Perm AR	UNT to A, B1, HQS	39.06551	-80.38727
15.9	slea078	UNT to Hackers Creek	Ephemeral	31		Perm AR	UNT to A, B1, HQS	39.06448	-80.38759
HUC 8 – 05020001									
24.0	supa002	UNT to Fink Run	Intermittent		31	Temp AR	UNT to B1	39.00207	-80.29121
25.6	supb102	Brushy Fork	Intermittent	33		Perm AR	B1	38.98422	-80.28080
26.0	supe012	UNT to Left Fork Brushy Fork	Perennial	12		Perm AR	UNT to B1	38.99420	-80.25986
29.3	supa050	UNT to Cutright Run	Intermittent		52	Perm AR	UNT to B1	38.94352	-80.25390
30.6	supb052	UNT to French Creek	Intermittent	30		Perm AR	UNT to B2, HQS	38.93093	-80.24659
30.7	supb053	UNT to French Creek	Intermittent	32		Perm AR	UNT to B2, HQS	38.93103	-80.24268
33.0	supb009	UNT to Trubie Run	Perennial		68	Perm AR	UNT to B1	38.92149	-80.21113
33.0	supb103	Trubie Run	Perennial		0	Perm AR	B1	38.92267	-80.21173
35.9	supe011	Gravel Run	Perennial		23	Perm AR	B1	38.88928	-80.19354
36.4	supe010	Laurel Run	Perennial		34	Perm AR	B1	38.88125	-80.19199
36.7	supa051	UNT to Laurel Run	Intermittent		109	Perm AR	UNT to B1	38.88250	-80.18265
36.8	supb011	Laurel Run	Perennial		141	Perm AR	B1	38.88035	-80.18424
37.1	supa053	UNT to Tenmile Creek	Intermittent		42	Temp AR	UNT to HQS	38.87673	-80.18149
37.5	supa052	UNT to Tenmile Creek	Intermittent		13	Temp AR	UNT to HQS	38.87332	-80.18223
37.8	supa016	Tenmile Creek	Perennial	58		Temp AR	HQS	38.87164	-80.17576
37.8	supb050	UNT to Tenmile Creek	Perennial	33		Perm AR	UNT to HQS	38.87148	-80.17451
37.8	oupa002	UNP to Tenmile Creek	Pond	NA		Temp AR	Unnamed Pond to HQS	38.87119	-80.17537
37.8	supb051	UNT to Tenmile Creek	Perennial	30		Perm AR	UNT to HQS	38.87054	-80.17153
41.4	supb106	UNT to Middle Fork	Intermittent	17		Temp AR	UNT to B2, HQS	38.83886	-80.13481
41.9	supb105	UNT to Jackson Fork	Ephemeral	290		Perm AR	Unclassified	38.83629	-80.12373

TABLE 4-2

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Access Road Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID[a]	Waterbody Name[b]	Flow Regime	Potential Temporary Affected Stream Length [c] (feet)	Permanent Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
41.9	supb104	Jackson Fork	Perennial	38		Perm AR	Unclassified	38.83587	-80.12425
45.4	srac001	UNT to Jenks Fork	Intermittent	35		Perm AR	Unclassified	38.79636	-80.09459
49.3	srae202	UNT to Light Run	Intermittent	7		Perm AR	UNT to B1	38.73948	-80.09572
49.3	srae203	UNT to Light Run	Intermittent	3		Perm AR	UNT to B1	38.73877	-80.09462
49.3	srae204	UNT to Light Run	Intermittent	170		Perm AR	UNT to B1	38.73930	-80.07544
50.4	sraa429	UNT to Dry Run	Intermittent	69		Perm AR	UNT to B1	38.71737	-80.10764
50.4	sraa428	UNT to Dry Run	Intermittent		465	Perm AR	UNT to B1	38.71637	-80.10663
50.5	sraa427	Dry Run	Intermittent		39	Perm AR	B1	38.71563	-80.10739
50.5	sraa426	UNT to Dry Run	Intermittent	146		Perm AR	UNT to B1	38.71503	-80.10748
50.7	srae201	UNT to Left Fork Buckhannon River	Perennial	39		Perm AR	UNT to HQS	38.71270	-80.13068
50.8	sraa403	UNT to Dry Run	Intermittent		31	Perm AR	UNT to B1	38.71163	-80.11428
50.8	sraa402	Dry Run	Intermittent	41		Perm AR	UNT to B1	38.71141	-80.11403
51.2	srae179	UNT to Lick Run	Ephemeral		41	Perm AR	UNT to B1	38.70252	-80.11224
51.3	srae180	UNT to Lick Run	Ephemeral		32	Perm AR	UNT to B1	38.70281	-80.11565
51.4	sraa412	UNT to Lick Run	Intermittent	75		Perm AR	UNT to B1	38.69972	-80.11273
51.4	sraa405	UNT to Lick Run	Intermittent		86	Perm AR	UNT to B1	38.70032	-80.11595
51.4	sraa413	UNT to Lick Run	Intermittent	274		Perm AR	UNT to B1	38.69808	-80.11247
51.6	sraa414	UNT to Lick Run	Intermittent	168		Perm AR	UNT to B1	38.69564	-80.11424
51.7	sraa415	UNT to Lick Run	Intermittent	598		Perm AR	UNT to B1	38.69200	-80.11593
51.8	sraa416	UNT to Lick Run	Perennial	43		Perm AR	UNT to B1	38.69043	-80.11686
51.8	sraa417	UNT to Lick Run	Intermittent	111		Perm AR	UNT to B1	38.69020	-80.11735
52.1	sraa418	UNT to Lick Run	Intermittent	431		Perm AR	UNT to B1	38.68904	-80.12204
52.1	sraa419	UNT to Beech Run	Perennial	31		Perm AR	UNT to HQS	38.69409	-80.13145
52.1	sraa420	Beech Run	Perennial		30	Perm AR	HQS	38.69342	-80.13215
52.5	sraa421	UNT to Beech Run	Intermittent	587		Perm AR	UNT to HQS	38.68355	-80.12929
52.8	sraa422	UNT to Beech Run	Intermittent	479		Perm AR	UNT to HQS	38.67917	-80.13116
52.8	sraa423	UNT to Beech Run	Intermittent	150		Perm AR	UNT to HQS	38.67772	-80.13166
53.0	sraa424	UNT to Beech Run	Intermittent	47		Perm AR	UNT to HQS	38.67568	-80.13208
53.1	srac113	Left Fork Buckhannon River	Perennial	0		Perm AR	HQS	38.67208	-80.14659

TABLE 4-2

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Access Road Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID[a]	Waterbody Name[b]	Flow Regime	Potential Temporary Affected Stream Length [c] (feet)	Permanent Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
53.1	srac114	UNT to Left Fork Buckhannon River	Ephemeral	33		Perm AR	UNT to HQS	38.67232	-80.14646
54.0	srac116	UNT to Left Fork Buckhannon River	Perennial	32		Perm AR	UNT to HQS	38.66900	-80.14625
54.0	srac117	UNT to Left Fork Buckhannon River	Intermittent	1		Perm AR	UNT to HQS	38.66905	-80.14608
54.0	srac118	Left Fork Buckhannon River	Perennial	0		Perm AR	HQS	38.66693	-80.14832
54.1	srac119	Left Fork Buckhannon River	Perennial		171	Perm AR	HQS	38.66168	-80.15102
54.1	srac125	Left Fork Buckhannon River	Perennial		54	Perm AR	HQS	38.66184	-80.15139
54.1	srac120	UNT to Left Fork Buckhannon River	Intermittent	46		Perm AR	UNT to HQS	38.66107	-80.15063
54.2	srac121	Left Fork Buckhannon River	Perennial	0		Perm AR	HQS	38.66076	-80.15098
54.2	srac122	UNT to Left Fork Buckhannon River	Intermittent	0		Perm AR	HQS	38.66025	-80.15083
54.3	srac123	UNT to Left Fork Buckhannon River	Perennial	68		Perm AR	HQS	38.65919	-80.15114
54.3	srac124	UNT to Left Fork Buckhannon River	Perennial	37		Perm AR	HQS	38.65689	-80.15166
55.1	srac128	UNT to Left Fork Buckhannon River	Perennial		36	Perm AR	HQS	38.64275	-80.16490
55.1	srac129	Long Run	Intermittent		41	Perm AR	HQS	38.64086	-80.16106
55.3	srap002	Long Run	Perennial	38		Perm AR	HQS	38.63758	-80.15702
55.3	srac131	UNT to Long Run	Intermittent	62		Perm AR	B1	38.63916	-80.16048
55.3	srac130	UNT to Long Run	Intermittent	30		Perm AR	UNT to HQS	38.63933	-80.16064
HUC 8 – 05050007									
56.3	orap001	Unnamed Pond	Pond	NA		Perm AR	NA	38.61905	-80.15595
56.3	srap009	UNT to Left Fork Buckhannon River	Intermittent	26		Perm AR	UNT to HQS	38.61890	-80.15555
56.4	srae198	UNT to Sugar Creek	Perennial	37		Perm AR	UNT to HQS	38.61642	-80.16596
56.5	srae197	UNT to Sugar Creek	Intermittent	49		Perm AR	UNT to HQS	38.61502	-80.16544
56.7	orae119	Unnamed Pond	Pond	NA		Perm AR	NA	38.61268	-80.16422

TABLE 4-2

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Access Road Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID[a]	Waterbody Name[b]	Flow Regime	Potential Temporary Affected Stream Length [c] (feet)	Permanent Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
57.0	srae100	UNT to Back Fork Elk River	Intermittent		26	Perm AR	Unclassified	38.60590	-80.15886
57.1	srac108	UNT to Left Fork Back Fork Elk River	Intermittent		38	Perm AR	Unclassified	38.60752	-80.16341
57.2	orae118	Unnamed Pond	Pond	NA		Perm AR	NA	38.60994	-80.16573
57.3	srac109	Mitchell Run	Intermittent	35		Perm AR	B1	38.60504	-80.17234
57.3	srac110	Mitchell Run	Perennial	101		Perm AR	B1	38.60338	-80.17336
57.3	srac111	UNT to Mitchell Run	Intermittent	9		Perm AR	UNT to B1	38.60343	-80.17328
57.3	srae174	UNT to Mitchell Run	Ephemeral		69	Perm AR	UNT to B1	38.60224	-80.17342
57.4	srae173	UNT to Mitchell Run	Intermittent		168	Perm AR	UNT to B1	38.60168	-80.17359
57.4	srae171	UNT to Mitchell Run	Ephemeral		568	Perm AR	UNT to B1	38.59897	-80.17413
57.4	srae172	UNT to Mitchell Run	Ephemeral		207	Perm AR	UNT to B1	38.60057	-80.17367
57.5	srae170	UNT to Mitchell Run	Ephemeral		59	Perm AR	UNT to B1	38.59752	-80.17450
57.6	srae168	UNT to Mitchell Run	Intermittent	32		Perm AR	UNT to B1	38.59623	-80.18123
57.6	srae167	UNT to Mitchell Run	Intermittent	56		Perm AR	UNT to B1	38.59617	-80.18167
57.6	srae165	UNT to Mitchell Run	Intermittent	33		Perm AR	UNT to B1	38.59593	-80.18331
57.6	srae164	UNT to Mitchell Run	Intermittent	92		Perm AR	UNT to B1	38.59583	-80.18356
57.6	srae166	UNT to Mitchell Run	Ephemeral	4		Perm AR	UNT to B1	38.59580	-80.18261
57.6	srae163	UNT to Mitchell Run	Intermittent		50	Perm AR	UNT to B1	38.59572	-80.18375
57.6	srae169	UNT to Mitchell Run	Ephemeral	183		Perm AR	UNT to B1	38.59523	-80.17953
57.6	srae162	UNT to Mitchell Run	Intermittent		239	Perm AR	UNT to B1	38.59481	-80.18472
57.6	srae161	UNT to Mitchell Run	Intermittent	69		Perm AR	UNT to B1	38.59419	-80.18540
57.6	srae160	UNT to Mitchell Run	Intermittent	36		Perm AR	UNT to B1	38.59411	-80.18549
57.7	srae155	UNT to Mitchell Run	Ephemeral	342		Perm AR	UNT to B1	38.59389	-80.18430
57.7	srae156	UNT to Mitchell Run	Intermittent	31		Perm AR	UNT to B1	38.59357	-80.18499
57.7	srae154	UNT to Mitchell Run	Ephemeral	153		Perm AR	UNT to B1	38.59318	-80.18443
57.7	srae153	UNT to Mitchell Run	Intermittent	339		Perm AR	UNT to B1	38.59245	-80.18509
57.8	srae148	Mitchell Run	Perennial	43		Perm AR	Unclassified	38.59093	-80.18504
57.8	srae196	Back Fork Elk River	Perennial	31		Temp AR	Unclassified	38.58684	-80.17133
58.1	srae195	UNT to Back Fork Elk River	Intermittent	24		Temp AR	Unclassified	38.58612	-80.16621
58.1	srae194	UNT to Back Fork Elk River	Ephemeral	10		Temp AR	Unclassified	38.58443	-80.16473

TABLE 4-2

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Access Road Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID[a]	Waterbody Name[b]	Flow Regime	Potential Temporary Affected Stream Length [c] (feet)	Permanent Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
58.1	srae193	UNT to Back Fork Elk River	Intermittent	37		Temp AR	Unclassified	38.58403	-80.16437
58.2	srae192	UNT to Back Fork Elk River	Ephemeral	36		Temp AR	Unclassified	38.58343	-80.16353
58.2	srae191	UNT to Back Fork Elk River	Intermittent	203		Temp AR	Unclassified	38.58304	-80.16253
58.3	srae189	UNT to Hewett Fork	Ephemeral	21		Temp AR	UNT to B1	38.58271	-80.15683
58.4	srae190	UNT to Back Fork Elk River	Intermittent	42		Temp AR	Unclassified	38.58161	-80.15971
58.7	srae186	UNT to Hewett Fork	Intermittent	49		Perm AR	UNT to B1	38.57809	-80.15023
59.4	srac106	UNT to Hickorylick Run	Intermittent	109		Perm AR	Unclassified	38.56045	-80.15061
59.6	srae185	UNT to Hewett Fork	Intermittent	94		Perm AR	UNT to B1	38.56252	-80.13629
59.6	srae184	UNT to Hewett Fork	Intermittent	98		Perm AR	UNT to B1	38.56180	-80.13580
59.7	srae183	UNT to Hewett Fork	Intermittent	30		Perm AR	UNT to B1	38.56088	-80.13590
59.7	srac105	UNT to Hickorylick Run	Ephemeral	77		Perm AR	Unclassified	38.55735	-80.14186
60.7	srae188	Valley Fork	Perennial	0		Perm AR	Unclassified	38.53902	-80.13229
60.8	srae118	UNT to Valley Fork	Ephemeral	40		Perm AR	Unclassified	38.53774	-80.13603
61.0	srae187	UNT to Valley Creek	Intermittent	110		Perm AR	Unclassified	38.53612	-80.13125
63.0	orae120	Unnamed Pond	Pond	NA		Perm AR	NA	38.51260	-80.10736
63.2	srac159e	UNT to Falling Spring Run	Ephemeral		45	Perm AR	UNT to B1	38.50712	-80.10938
63.2	srac159i	UNT to Falling Spring Run	Intermittent	158		Perm AR	UNT to B1	38.50636	-80.11091
63.2	srac158	UNT to Falling Spring Run	Intermittent	50		Perm AR	UNT to B1	38.50609	-80.11177
63.3	srac157	UNT to Falling Spring Run	Ephemeral		155	Perm AR	UNT to B1	38.50427	-80.11466
63.4	srac156	UNT to Falling Spring Run	Intermittent	36		Perm AR	UNT to B1	38.49612	-80.11416
63.5	sray001	UNT to Falling Spring Run	Intermittent	30		Perm AR	UNT to B1	38.48307	-80.11393
63.7	srac133	UNT to Falling Spring Run	Ephemeral		111	Perm AR	UNT to B1	38.48536	-80.10786
63.7	srac134	Falling Spring Run	Perennial	31		Perm AR	B1	38.48593	-80.10710
63.8	srac136	Falling Spring Run	Perennial	977		Perm AR	B1	38.48663	-80.10312
63.8	srae175	UNT to Falling Spring Run	Intermittent		596	Perm AR	UNT to B1	38.49757	-80.09779
63.8	srac138	UNT to Falling Spring Run	Intermittent	47		Perm AR	UNT to B1	38.48681	-80.10032
63.9	srac155	UNT to Falling Spring Run	Ephemeral	689		Perm AR	UNT to B1	38.49597	-80.09664
63.9	srac139	UNT to Falling Spring Run	Intermittent	38		Perm AR	UNT to B1	38.48712	-80.09905
64.1	srac154	UNT to Falling Spring Run	Ephemeral		370	Perm AR	UNT to B1	38.49518	-80.09192

TABLE 4-2

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Access Road Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID[a]	Waterbody Name[b]	Flow Regime	Potential Temporary Affected Stream Length [c] (feet)	Permanent Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
64.2	srae176	UNT to Falling Spring Run	Ephemeral		30	Perm AR	UNT to B1	38.49701	-80.08900
64.3	srac153	UNT to Falling Spring Run	Intermittent	31		Perm AR	UNT to B1	38.49561	-80.08931
64.4	srac152	UNT to Falling Spring Run	Ephemeral	449		Perm AR	UNT to B1	38.49446	-80.08852
64.5	srac151	UNT to Falling Spring Run	Ephemeral	10		Perm AR	UNT to B1	38.49218	-80.08723
64.5	srac150	UNT to Falling Spring Run	Intermittent	52		Perm AR	UNT to B1	38.49186	-80.08730
64.5	srac140	UNT to Falling Spring Run	Ephemeral	35		Perm AR	UNT to B1	38.48672	-80.09453
64.5	srac149	UNT to Falling Spring Run	Ephemeral	682		Perm AR	UNT to B1	38.48975	-80.08871
64.5	srac141	UNT to Falling Spring Run	Intermittent	55		Perm AR	UNT to B1	38.48613	-80.09155
64.5	srac142	UNT to Falling Spring Run	Intermittent		33	Perm AR	UNT to B1	38.48571	-80.08979
64.6	srac143	UNT to Falling Spring Run	Intermittent	191		Perm AR	UNT to B1	38.48517	-80.08896
64.6	srac148	UNT to Falling Spring Run	Intermittent		50	Perm AR	UNT to B1	38.48762	-80.08699
64.6	srae113	UNT to Falling Spring Run	Ephemeral	34		Perm AR	UNT to B1	38.49107	-80.08348
64.6	srac146	UNT to Falling Spring Run	Intermittent	31		Perm AR	UNT to B1	38.48445	-80.08686
64.6	srac147	UNT to Falling Spring Run	Ephemeral	6		Perm AR	UNT to B1	38.48529	-80.08680
64.7	srae115	UNT to Falling Spring Run	Ephemeral	33		Perm AR	UNT to B1	38.49405	-80.07834
64.7	srae116	UNT to Falling Spring Run	Ephemeral	74		Perm AR	UNT to B1	38.49418	-80.07831
64.8	srae117	UNT to Falling Spring Run	Intermittent	114		Perm AR	UNT to B1	38.49561	-80.07647
64.9	srae137	UNT to Falling Spring Run	Intermittent	0		Perm AR	UNT to B1	38.49460	-80.07381
64.9	srae138	UNT to Falling Spring Run	Intermittent		105	Perm AR	UNT to B1	38.49502	-80.07344
64.9	srae139	UNT to Falling Spring Run	Ephemeral	53		Perm AR	UNT to B1	38.49526	-80.07296
64.9	srae140	UNT to Falling Spring Run	Ephemeral		66	Perm AR	UNT to B1	38.49548	-80.07233
HUC 8 – 05020001									
65.0	srae141	UNT to Falling Spring Run	Intermittent	46		Perm AR	UNT to B1	38.49536	-80.07095
65.0	srae142	UNT to Falling Spring Run	Ephemeral		40	Perm AR	UNT to B1	38.49510	-80.07071
65.4	srae208	Mingo Run	Perennial	146		Perm AR	B1	38.48737	-80.06602
65.4	srae207	UNT to Mingo Run	Intermittent	38		Perm AR	UNT to B1	38.48572	-80.06630
65.7	DKSF_WV_010	UNT to Mingo Run	Intermittent		63	Perm AR	UNT to B1	38.48176	-80.05845
65.7	DKSF_WV_011	UNT to Mingo Run	Intermittent		31	Perm AR	UNT to B1	38.48304	-80.05501

TABLE 4-2

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Access Road Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID[a]	Waterbody Name[b]	Flow Regime	Potential Temporary Affected Stream Length [c] (feet)	Permanent Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
HUC 8 – 05050007									
66.6	DKSF_WV_012	Douglas Fork	Intermittent	10		Perm AR	B1	38.46448	-80.06156
66.7	DKSF_WV_012	Douglas Fork	Intermittent	10		Perm AR	B1	38.46420	-80.06046
68.9	DKSF_WV_014	UNT to Big Spring Fork	Intermittent	11		Perm AR	UNT to HQS	38.42674	-80.04324
69.1	spoe046	Big Spring Fork	Perennial	30		Perm AR	HQS	38.41781	-80.05930
69.2	DKSF_WV_019	UNT to Big Spring Fork	Intermittent	21		Perm AR	UNT to HQS	38.40957	-80.07078
69.2	spoa442	UNT to Big Spring Fork	Intermittent	32		Temp AR	UNT to HQS	38.41836	-80.05138
69.3	spoe022	Big Spring Fork	Perennial		31	Perm AR	HQS	38.41768	-80.04238
69.6	spoe045	Mill Run	Intermittent		63	Perm AR	B1	38.40938	-80.05450
69.6	DKSF_WV_022	UNT to Mill Run	Intermittent		31	Perm AR	UNT to B1	38.40875	-80.06080
69.6	DKSF_WV_020	UNT to Mill Run	Intermittent		57	Perm AR	UNT to B1	38.40722	-80.06642
69.6	DKSF_WV_021	UNT to Mill Run	Intermittent		36	Perm AR	UNT to B1	38.40725	-80.06375
70.3	DKSF_WV_024	UNT to Mill Run	Intermittent		41	Perm AR	UNT to B1	38.40377	-80.05961
70.3	spoe044	Mill Run	Intermittent		31	Perm AR	B1	38.40140	-80.05417
70.3	DKSF_WV_025	UNT to Mill Run	Intermittent		30	Perm AR	UNT to B1	38.40255	-80.05912
70.4	spoe043	UNT to Mill Run	Intermittent		35	Perm AR	UNT to B1	38.39888	-80.05555
70.4	spoe041	UNT to Mill Run	Ephemeral		170	Perm AR	UNT to B1	38.39831	-80.05629
70.4	spoe042	UNT to Mill Run	Ephemeral		190	Perm AR	UNT to B1	38.39862	-80.05565
70.4	spoe040	UNT to Mill Run	Intermittent	31		Perm AR	UNT to B1	38.39752	-80.05654
70.4	spoe039	UNT to Mill Run	Intermittent	4		Perm AR	UNT to B1	38.39632	-80.05619
70.4	spoe038	UNT to Mill Run	Intermittent	34		Perm AR	UNT to B1	38.39602	-80.05644
70.5	spoe037	UNT to Mill Run	Intermittent	31		Perm AR	UNT to B1	38.39464	-80.05615

TABLE 4-2

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Access Road Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID[a]	Waterbody Name[b]	Flow Regime	Potential Temporary Affected Stream Length [c] (feet)	Permanent Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
70.5	spoe036	UNT to Mill Run	Ephemeral	93		Perm AR	UNT to B1	38.39445	-80.05609
70.5	spoy006	UNT to Mill Run	Intermittent		424	Perm AR	UNT to B1	38.39423	-80.05070
70.5	spoy007	UNT to Mill Run	Ephemeral	5		Perm AR	UNT to B1	38.39392	-80.05060
70.5	spoe035	UNT to Mill Run	Intermittent	33		Perm AR	UNT to B1	38.39428	-80.05587
70.5	spoe034	UNT to Mill Run	Intermittent	31		Perm AR	UNT to B1	38.39360	-80.05416
70.5	spoy009	UNT to Mill Run	Intermittent	33		Perm AR	UNT to B1	38.39348	-80.05096
70.5	spoy011	UNT to Mill Run	Intermittent	38		Perm AR	UNT to B1	38.39325	-80.05240
70.8	spoe004	UNT to Big Spring Fork	Intermittent	34		Perm AR	UNT to HQS	38.38860	-80.04939
70.8	spoe031	UNT to Big Spring Fork	Ephemeral		19	Perm AR	UNT to HQS	38.38706	-80.04795
71.0	spoe028	UNT to Big Spring Fork	Intermittent		32	Perm AR	UNT to HQS	38.38464	-80.04711
71.0	spoe027	UNT to Big Spring Fork	Intermittent		34	Perm AR	UNT to HQS	38.38429	-80.04669
71.0	spoe029	UNT to Big Spring Fork	Ephemeral		30	Perm AR	UNT to HQS	38.38431	-80.04905
71.1	spoe030	UNT to Big Spring Fork	Ephemeral	3		Perm AR	UNT to HQS	38.38345	-80.04464
71.1	spoe026	UNT to Big Spring Fork	Intermittent	51		Perm AR	UNT to HQS	38.38171	-80.04482
71.9	spoa418	UNT to Slaty Fork	Ephemeral	3		Perm AR	UNT to HQS, UNT to Tier 3	38.37305	-80.07023
71.9	spoa422	UNT to Slaty Fork	Ephemeral	39		Perm AR	UNT to HQS, UNT to Tier 3	38.37576	-80.07682
71.9	spoa423	UNT to Slaty Fork	Ephemeral	33		Perm AR	UNT to HQS, UNT to Tier 3	38.37732	-80.07730
71.9	spoa424	UNT to Slaty Fork	Intermittent	75		Perm AR	UNT to HQS, UNT to Tier 3	38.37760	-80.07745
71.9	spoa425	UNT to Slaty Fork	Intermittent	30		Perm AR	UNT to HQS, UNT to Tier 3	38.37773	-80.07740
71.9	spoa427	UNT to Slaty Fork	Intermittent	33		Perm AR	UNT to HQS, UNT to Tier 3	38.37998	-80.08643
71.9	spoa428	UNT to Slaty Fork	Perennial	48		Perm AR	UNT to HQS, UNT to Tier 3	38.37801	-80.08779
71.9	spoa421	UNT to Slaty Fork	Ephemeral	33		Perm AR	UNT to HQS, UNT to Tier 3	38.37366	-80.07586

TABLE 4-2

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Access Road Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID[a]	Waterbody Name[b]	Flow Regime	Potential Temporary Affected Stream Length [c] (feet)	Permanent Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
71.9	spoa429	UNT to Slaty Fork	Intermittent	31		Perm AR	UNT to HQS, UNT to Tier 3	38.37763	-80.08832
72.0	spoa420	UNT to Slaty Fork	Intermittent	32		Perm AR	HQS, Tier 3	38.37288	-80.07580
72.0	spoa430	UNT to Slaty Fork	Intermittent	119		Perm AR	UNT to HQS, UNT to Tier 3	38.37341	-80.08702
72.0	spoa431	UNT to Slaty Fork	Intermittent	81		Perm AR	UNT to HQS, UNT to Tier 3	38.37297	-80.08655
72.0	spoa432	UNT to Slaty Fork	Intermittent	34		Perm AR	UNT to HQS, UNT to Tier 3	38.37266	-80.08635
72.0	spoa433	UNT to Slaty Fork	Intermittent		147	Perm AR	UNT to HQS, UNT to Tier 3	38.37214	-80.08640
72.0	spoa434	UNT to Slaty Fork	Intermittent	241		Perm AR	UNT to HQS, UNT to Tier 3	38.37152	-80.08672
72.0	spoa435	UNT to Slaty Fork	Intermittent	150		Perm AR	UNT to HQS, UNT to Tier 3	38.37156	-80.08800
72.0	spoa436	UNT to Slaty Fork	Perennial	33		Perm AR	UNT to HQS, UNT to Tier 3	38.37205	-80.08802
72.0	spoa437	UNT to Slaty Fork	Intermittent	222		Perm AR	UNT to HQS, UNT to Tier 3	38.37232	-80.08942
72.0	spoa438	UNT to Slaty Fork	Intermittent	179		Perm AR	UNT to HQS, UNT to Tier 3	38.37253	-80.09039
72.0	spoa439	UNT to Slaty Fork	Intermittent	30		Perm AR	UNT to HQS, UNT to Tier 3	38.37207	-80.08987
72.0	spoa440	UNT to Slaty Fork	Intermittent	151		Perm AR	UNT to HQS, UNT to Tier 3	38.37182	-80.08896
72.0	spoa441	UNT to Slaty Fork	Perennial	0		Perm AR	UNT to HQS, UNT to Tier 3	38.37165	-80.08886
HUC 8 – 05050003									
72.3	spoc111	UNT to Clover Creek	Intermittent	36		Perm AR	Unclassified	38.36797	-80.05850
72.4	spoc110	UNT to Clover Creek	Ephemeral	37		Perm AR	Unclassified	38.36607	-80.05786
72.5	spoc109	UNT to Clover Creek	Ephemeral	31		Perm AR	Unclassified	38.35868	-80.05880
72.8	spoc107	UNT to Clover Creek	Ephemeral		31	Perm AR	Unclassified	38.35903	-80.05179

TABLE 4-2

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Access Road Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID[a]	Waterbody Name[b]	Flow Regime	Potential Temporary Affected Stream Length [c] (feet)	Permanent Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
72.8	spoc106	UNT to Clover Creek	Perennial	39		Perm AR	Unclassified	38.35885	-80.05064
74.6	spoe048	Clover Creek	Perennial	30		Perm AR	Unclassified	38.34865	-80.00847
75.2	spoe032	UNT to Clover Creek	Intermittent	37		Perm AR	Unclassified	38.33434	-80.00334
75.2	spoe033	UNT to Clover Creek	Ephemeral		60	Perm AR	Unclassified	38.33538	-80.00305
76.6	DKSF_WV_033	Greenbrier River	Perennial	0		Perm AR		38.33278	-79.96886
76.7	spoe049	UNT to Greenbrier River	Ephemeral		35	Perm AR	UNT to B1, HQS	38.33542	-79.96503
76.8	spoe050	UNT to Greenbrier River	Ephemeral		17	Perm AR	UNT to B1, HQS	38.32943	-79.96605
77.1	spoe051	UNT to Greenbrier River	Ephemeral	12		Perm AR	UNT to B1, HQS	38.32653	-79.95428
77.1	spoe052	UNT to Greenbrier River	Ephemeral	41		Perm AR	UNT to B1, HQS	38.32580	-79.95456
77.3	spoe053	UNT to Greenbrier River	Ephemeral	10		Perm AR	UNT to B1, HQS	38.31908	-79.95048
77.9	spoe054	UNT to Greenbrier River	Ephemeral	30		Perm AR	UNT to B1, HQS	38.31662	-79.95062
78.1	spoe055	UNT to Greenbrier River	Ephemeral	173		Perm AR	UNT to B1, HQS	38.31511	-79.94904
78.1	spoe056	UNT to Little Thorny Creek	Ephemeral		4	Perm AR	UNT to B1, HQS	38.31324	-79.95110
78.1	spoe057	UNT to Little Thorny Creek	Ephemeral		8	Perm AR	UNT to B1, HQS	38.31178	-79.95103
78.1	spoe059	Little Thorny Creek	Perennial	30		Perm AR	UNT to B1, HQS	38.30604	-79.94352
78.1	opoe003	Seneca Lake	Pond		NA	Perm AR	UNT to B1, HQS	38.30634	-79.94282
79.2	spoc113	UNT to Thorn Creek	Ephemeral		481	Perm AR	UNT to B1	38.29917	-79.93220
81.0	opoe002	Unnamed Pond	Pond		NA	Perm AR	NA	38.29998	-79.87186
81.2	spoa408	UNT to Sugar Camp Run	Intermittent	52		Perm AR	Unclassified	38.29268	-79.87054
81.9	spoa410	UNT to Sugar Camp Run	Ephemeral		33	Perm AR	Unclassified	38.30042	-79.85170

TABLE 4-2

Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia
Access Road Impacts

	Waterbody			Crossing			Special Designations		
Milepost	Feature ID[a]	Waterbody Name[b]	Flow Regime	Potential Temporary Affected Stream Length [c] (feet)	Permanent Affected Stream Length [c] (feet)	Method [b]	State Water Quality Classification [d]	Latitude	Longitude
83.5	spoa407	UNT to Knapp Creek	Intermittent	100		Perm AR	UNT to HQS	38.30387	-79.81789
83.8	spoa406	UNT to Knapp Creek	Intermittent	48		Perm AR	UNT to HQS	38.30074	-79.81142
84.1	spoa405	UNT to Knapp Creek	Intermittent	89		Perm AR	UNT to HQS	38.29738	-79.80642
84.1	spoa404	UNT to Knapp Creek	Perennial	42		Perm AR	UNT to HQS	38.29738	-79.80618
84.4	spoa403	UNT to Knapp Creek	Intermittent	36		Perm AR	UNT to HQS	38.29472	-79.80504
			Total	**15,424**	**7,341**				

[a] Waterbodies with a Feature ID starting with DKS represent waterbodies that are based on desktop review, and widths have been assumed as 10 feet wide for perennial and 5 feet wide for intermittent waterbodies in this dataset.

[b] UNT = Unnamed Tributary

[c] Affected Stream Length is a linear length of the waterbody, generally the centerline of the stream or one bank length within the project area. Potential Temporary Affected Stream Length includes waterbodies in near proximity to access roads that will be used or improved, but no direct fill or loss of waters is planned. Where the measurement is 0 (zero) the waterbody shows up on the very edge of the access road area of analysis but no direct impacts are planned. Permanent Affected Stream Lengths include waterbodies where permanent improvements are planned for access roads. Waterbodies with an Affected Stream Length of N/A are ponds that were not assess for stream length impacts.

[d] West Virginia State Water Quality Classifications

- West Virginia Stream Water Use Categories:
- Category A—Public Water; Category B1—Warm Water Fishery; Category B2—Trout Waters;
- State Water Quality Classifications were determined using West Virginia Code of State Regulations, Title 47, Series 2 and communication with West Virginia Department of Environmental Protection (WVDEP) staff (Peterson, 2015). WVDEP considers all waters of the state Category A, B, and C waters. Waterbodies are assumed to be capable of supporting public water use. Those waterbodies listed in the table as Category A waters are waterbodies listed in appendices to West Virginia CSR, Title 47.
- High Quality Streams (HQS) are based on the Sixth Edition of the West Virginia High Quality Streams prepared by the Wildlife Resources Section of the West Virginia Division of Natural Resources.

State regulations require the classification to extend into adjacent tributaries, indicated by UNT to [Stream Class] to indicate connected tributaries to classified waters.

8.0 LENGTH AND WIDTH OF SECTION 10 IMPACTS

The West Fork River and Greenbrier River are the two Section 10 waterbodies crossed by the ACP in West Virginia. Atlantic has developed Section 10 site-specific construction plans, included as Appendix C. Table 5 provides information on the West Fork River and Greenbrier River crossings.

TABLE 5

Navigable Waterbodies Crossed and Crossing Methods for the Atlantic Coast Pipeline

	Waterbody				Crossing	Special Designations		
Milepost	Feature ID	Waterbody Name	Flow Regime	Approximate Crossing Width (feet)	Method	State Water Quality Classification [a]	Latitude	Longitude
8.2	sleb009	West Fork River	Perennial	91	1) Cofferdam	A, HQS, B1	39.13536	-80.45627
76.6	spoc118	Greenbrier River	Perennial	177	1) Cofferdam	HQS, B1	38.33429	-79.96853

[a] West Virginia State Water Quality Classifications
West Virginia Stream Water Use Categories:
Category A—Public Water
Category B1 – Warmwater Fishery
HQS—High Quality Stream
State Water Quality Classifications were determined using West Virginia Code of State Regulations, Title 47, Series 2, and communication with West Virginia Department of Environmental Protection (WVDEP) staff (Peterson, 2015). WVDEP considers all waters of the state Category A, B, and C waters. Waterbodies are assumed to be capable of supporting public water use. Those waterbodies listed in the table as Category A waters are waterbodies listed in appendices to West Virginia CSR, Title 47.

9.0 WETLANDS ON PROJECT SITE/ IMPACTED WETLANDS

Table 6 includes the location information, Cowardin classification, crossing methods, and both temporary impacts due to construction activities within the 75-foot-wide construction right-of-way. A total of 31.18 acres of temporary wetland impacts to PFO, PSS, and PEM wetlands will occur during construction. In addition, the FERC Procedures require limiting post-construction maintenance of vegetation to removal of trees with roots that could compromise the integrity of the pipeline within 15 feet of the pipeline centerline, and the maintenance of a 10-foot-wide corridor centered over the pipeline as herbaceous vegetation. Based on the post-construction maintenance of the permanent pipeline easement, there will be PFO and PSS type conversion impacts. A total of 0.39 acre of PFO wetland will be converted to PEM or PSS wetlands, and a total of 0.02 acre of PSS wetland will be converted to PEM wetland, excluding desktop delineated wetlands as a result of long-term maintenance of the permanent right-of-way. Temporary wetland areas outside of these converted acreages will be allowed to naturally recolonize and establish pre-construction wetland conditions.

TABLE 6

Wetlands Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia

Unique ID	Milepost	County	Hydrologic Unit Code (HUC8)	Cowardin Classification [a]	Crossing Length (feet)	Temporary Construction Impacts (acres) [b]	Permanent Operational Impacts (acres) [c]	Construction Method [d]	Latitude	Longitude
FIELD SURVEYED FEATURES PIPELINE										
whab001e	0.0	Harrison	05020002	PEM	0	0.03	0	Open Cut	39.17128	-80.56027
whab001s	0.0	Harrison	05020002	PSS	0	<0.01	0	NA	39.17107	-80.55978
whab001s	0.0	Harrison	05020002	PSS	0	<0.01	0	NA	39.17113	-80.56000
whab001s	0.0	Harrison	05020002	PSS	0	<0.01	0	NA	39.17089	-80.55985
whab001e	0.0	Harrison	05020002	PEM	3	<0.01	0	Open Cut	39.17095	-80.56012
whab001e	0.0	Harrison	05020002	PEM	0	<0.01	0	Open Cut	39.17094	-80.56013
whab002e	0.5	Harrison	05020002	PEM	7	0.03	0	Open Cut	39.16550	-80.56006
wleb001e	1.1	Harrison	05020002	PEM	0	<0.01	0	NA	39.15924	-80.55328
wleb001e	1.1	Lewis	05020002	PEM	25	0.04	0	Open Cut	39.15916	-80.55328
wlea003e	5.7	Lewis	05020002	PEM	0	<0.01	0	NA	39.14358	-80.49334
wlea002e	5.7	Lewis	05020002	PEM	53	0.04	0	Open Cut	39.14326	-80.49334
wlea004e	5.8	Lewis	05020002	PEM	44	0.06	0	Open Cut	39.14286	-80.49145
wlea005e	7.2	Lewis	05020002	PEM	9	0.01	0	Open Cut	39.14188	-80.47064
wleb003e	8.2	Lewis	05020002	PEM	0	0.01	0	NA	39.13524	-80.45594
wlea006e	9.2	Lewis	05020002	PEM	6	0.01	0	Open Cut	39.13078	-80.44381
wleb004e	9.2	Lewis	05020002	PEM	0	<0.01	0	Open Cut	39.13046	-80.44350
wleb201e	9.6	Lewis	05020002	PEM	0	0.04	0	NA	39.12435	-80.44338
wleb006s	10.3	Lewis	05020002	PSS	24	0.04	0.01	Open Cut	39.11695	-80.44132
wlea007e	11.8	Lewis	05020002	PEM	26	0.07	0	Open Cut	39.10776	-80.41958
wleh006e	14.5	Lewis	05020002	PEM	0	<0.01	0	NA	39.08020	-80.39321
wlea085e	14.8	Lewis	05020002	PEM	0	<0.01	0	NA	39.07625	-80.38521
wleb106e	15.0	Lewis	05020002	PEM	0	<0.01	0	NA	39.07427	-80.39032
wleb107e	15.3	Lewis	05020002	PEM	11	0.02	0	Open Cut	39.07082	-80.38819
wleb108e	16.4	Lewis	05020002	PEM	16	0.02	0	Open Cut	39.05919	-80.37980
wleb108e	16.4	Lewis	05020002	PEM	0	<0.01	0	Open Cut	39.05935	-80.37938
wlea011e	19.9	Lewis	05020002	PEM	0	0.02	0	Open Cut	39.03466	-80.33559
wlea012f	20.7	Lewis	05020002	PFO	0	<0.01	0	NA	39.03400	-80.32297
wupa001e	24.0	Upshur	05020001	PEM	26	0.05	0	Open Cut	39.00228	-80.29105
wupa001e	24.0	Upshur	05020001	PEM	29	0.05	0	Open Cut	39.00210	-80.29100
wupa002e	24.3	Upshur	05020001	PEM	12	0.02	0	Open Cut	38.99811	-80.28830
wupa003e	24.7	Upshur	05020001	PEM	25	0.05	0	Open Cut	38.99323	-80.28781
wupa003e	24.7	Upshur	05020001	PEM	15	0.02	0	Open Cut	38.99308	-80.28749

TABLE 6

Wetlands Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia

Unique ID	Milepost	County	Hydrologic Unit Code (HUC8)	Cowardin Classification [a]	Crossing Length (feet)	Temporary Construction Impacts (acres) [b]	Permanent Operational Impacts (acres)[c]	Construction Method[d]	Latitude	Longitude
wupb001e	25.4	Upshur	05020001	PEM	39	0.07	0	Open Cut	38.98440	-80.28460
wupb001e	25.4	Upshur	05020001	PEM	5	<0.01	0	Open Cut	38.98433	-80.28409
wupb002e	25.7	Upshur	05020001	PEM	0	<0.01	0	NA	38.98196	-80.27967
wupb003e	25.9	Upshur	05020001	PEM	429	0.73	0	Open Cut	38.98069	-80.27595
wupb004e	26.0	Upshur	05020001	PEM	874	1.48	0	Open Cut	38.97953	-80.27429
wupa005e	26.3	Upshur	05020002	PEM	72	0.11	0	Open Cut	38.97614	-80.27144
wupa004e	26.6	Upshur	05020002	PEM	39	0.08	0	Open Cut	38.97301	-80.26921
wupa006e	26.8	Upshur	05020002	PEM	8	0.01	0	Open Cut	38.97046	-80.26762
wupb006e	29.1	Upshur	05020001	PEM	56	0.06	0	Open Cut	38.94544	-80.25141
wupb007e	29.3	Upshur	05020001	PEM	100	0.15	0	Open Cut	38.94346	-80.25310
wupa007e	30.5	Upshur	05020001	PEM	0	0.01	0	Open Cut	38.92920	-80.24916
wupa007e	30.6	Upshur	05020001	PEM	3	0.01	0	Open Cut	38.92917	-80.24908
wupa008e	30.9	Upshur	05020001	PEM	21	0.05	0	Open Cut	38.92619	-80.24460
wupa008e	30.9	Upshur	05020001	PEM	0	<0.01	0	NA	38.92642	-80.24429
wupb009f	36.1	Upshur	05020001	PFO	1	0.01	0	Open Cut	38.88700	-80.18924
wupa010f	36.1	Upshur	05020001	PFO	16	0.02	0.01	Open Cut	38.88693	-80.18937
wupa010f	36.1	Upshur	05020001	PFO	1	<0.01	0	Open Cut	38.88686	-80.18954
wupa010f	36.1	Upshur	05020001	PFO	0	<0.01	0	NA	38.88665	-80.18926
wupb009f	36.1	Upshur	05020001	PFO	18	0.04	0.02	Open Cut	38.88668	-80.18997
wupb010e	36.8	Upshur	05020001	PEM	0	<0.01	0	NA	38.88034	-80.18423
wupb050e	37.8	Upshur	05020001	PEM	0	<0.01	0	NA	38.87165	-80.17473
wupb011e	37.9	Upshur	05020001	PEM	0	<0.01	0	NA	38.86899	-80.17534
wupa012e	39.4	Upshur	05020001	PEM	141	0.13	0	Open Cut	38.85449	-80.16280
wupa015f	39.6	Upshur	05020001	PFO	0	<0.01	0	NA	38.85352	-80.15914
wupa011e	41.3	Upshur	05020001	PEM	23	0.04	0	Open Cut	38.84032	-80.13497
wrac102e	44.8	Randolph	05020001	PEM	0	<0.01	0	NA	38.86526	-79.88091
wrac103e	44.8	Randolph	05020001	PEM	0	<0.01	0	NA	38.86328	-79.88302
wrac105e	44.8	Randolph	05020001	PEM	0	<0.01	0	NA	38.86564	-79.88319
wraa104e	47.3	Randolph	05020001	PEM	22	0.04	0	Open Cut	38.77212	-80.09227
wrab102e	47.3	Randolph	05020001	PEM	0	<0.01	0	NA	38.77199	-80.09349
wrae227e	47.3	Randolph	05020001	PEM	40	<0.01	0	Open Cut	38.77127	-80.09280
wrab103e	47.4	Randolph	05020001	PEM	22	0.06	0	Open Cut	38.76979	-80.09197
wraf002e	48.4	Randolph	05020001	PEM	0	0.04	0	Open Cut	38.75338	-80.09970

TABLE 6

Wetlands Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia

Unique ID	Milepost	County	Hydrologic Unit Code (HUC8)	Cowardin Classification [a]	Crossing Length (feet)	Temporary Construction Impacts (acres) [b]	Permanent Operational Impacts (acres)[c]	Construction Method[d]	Latitude	Longitude
wrac099e	48.8	Randolph	05020001	PEM	62	0.09	0	Open Cut	38.74570	-80.10172
wrac100e	50.2	Randolph	05020001	PEM	58	0.10	0	Open Cut	38.72220	-80.10960
wrac100e	50.2	Randolph	05020001	PEM	0	<0.01	0	NA	38.72207	-80.11000
wrac101e	50.3	Randolph	05020001	PEM	22	0.05	0	Open Cut	38.72045	-80.11005
wraa402f	50.7	Randolph	05020001	PFO	12	0.07	0.02	Open Cut	38.71266	-80.11434
wraa402f	50.7	Randolph	05020001	PFO	0	<0.01	0	NA	38.71274	-80.11419
wraa402f	50.7	Randolph	05020001	PFO	4	<0.01	0	Open Cut	38.71258	-80.11380
wraa403e	50.8	Randolph	05020001	PEM	11	0.02	0	Open Cut	38.71126	-80.11348
wrae001e	50.8	Randolph	05020001	PEM	17	0.03	0	Open Cut	38.71053	-80.11353
wraa404f	50.9	Randolph	05020001	PFO	32	0.05	0.02	Open Cut	38.71011	-80.11295
wraa404e	50.9	Randolph	05020001	PEM	125	0.22	0	Open Cut	38.70956	-80.11330
wraa405f	51.0	Randolph	05020001	PFO	0	0.05	0	NA	38.70706	-80.11247
wraa406e	51.2	Randolph	05020001	PEM	14	0.02	0	Open Cut	38.70422	-80.11324
wraa407e	51.2	Randolph	05020001	PEM	11	0.02	0	Open Cut	38.70431	-80.11394
wraa408f	51.4	Randolph	05020001	PFO	0	0.03	0	Open Cut	38.70126	-80.11570
wraa409e	51.4	Randolph	05020001	PEM	0	<0.01	0	NA	38.70064	-80.11597
wraa409e	51.4	Randolph	05020001	PEM	0	0.02	0	NA	38.70060	-80.11587
wraa410f	51.4	Randolph	05020001	PFO	29	0.04	0.02	Open Cut	38.69995	-80.11601
wraa411f	51.5	Randolph	05020001	PFO	31	0.03	0.02	Open Cut	38.69857	-80.11803
wraa412f	51.6	Randolph	05020001	PFO	30	0.04	0.02	Open Cut	38.69821	-80.11829
wraa413f	51.6	Randolph	05020001	PFO	14	0.03	0.01	Open Cut	38.69697	-80.11793
wraa414e	51.7	Randolph	05020001	PEM	8	0.02	0	Open Cut	38.69524	-80.11938
wraa418e	51.8	Randolph	05020001	PEM	0	0.02	0	Open Cut	38.69481	-80.12043
wraa417e	51.9	Randolph	05020001	PEM	19	0.02	0	Open Cut	38.69388	-80.12244
wraa416e	52.0	Randolph	05020001	PEM	0	0.03	0	Open Cut	38.69216	-80.12448
wraa415f	52.0	Randolph	05020001	PFO	30	0.05	0.02	Open Cut	38.69133	-80.12543
wraa420f	52.1	Randolph	05020001	PFO	31	0.05	0.02	Open Cut	38.69007	-80.12692
wraa423e	52.2	Randolph	05020001	PEM	0	<0.01	0	NA	38.68892	-80.12831
wraa422e	52.3	Randolph	05020001	PEM	0	<0.01	0	NA	38.68667	-80.13003
wraa421e	53.3	Randolph	05020001	PEM	71	0.10	0	Open Cut	38.66937	-80.13427
wraa424e	53.7	Randolph	05020001	PEM	29	0.05	0	Open Cut	38.66038	-80.13744
wraa429e	54.3	Randolph	05020001	PEM	71	0.12	0	Open Cut	38.65652	-80.14925
wraa430s	54.4	Randolph	05020001	PSS	21	0.04	0	Open Cut	38.65530	-80.14998

TABLE 6

Wetlands Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia

Unique ID	Milepost	County	Hydrologic Unit Code (HUC8)	Cowardin Classification [a]	Crossing Length (feet)	Temporary Construction Impacts (acres) [b]	Permanent Operational Impacts (acres)[c]	Construction Method[d]	Latitude	Longitude
wrap001e	55.1	Randolph	05020001	PFO	16	0.06	0.02	Open Cut	38.64261	-80.15533
wrap003e	55.3	Randolph	05020001	PEM	0	<0.01	0	NA	38.63785	-80.15727
wrap004e	55.4	Randolph	05020001	PEM	31	0.02	0	Open Cut	38.63724	-80.15733
wrap005e	55.8	Randolph	05020001	PEM	0	0.02	0	Open Cut	38.62820	-80.15638
wrap007e	55.9	Randolph	05020001	PEM	0	<0.01	0	NA	38.62611	-80.15579
wrap008e	55.9	Randolph	05020001	PEM	16	<0.01	0	Open Cut	38.62615	-80.15542
wrap009e	56.0	Randolph	05020001	PEM	32	0.07	0	Open Cut	38.62552	-80.15531
wrap011e	56.0	Randolph	05020001	PEM	0	<0.01	0	NA	38.62389	-80.15517
wrap012e	56.1	Randolph	05020001	PEM	135	0.27	0	Open Cut	38.62254	-80.15595
wrap012e	56.1	Randolph	05020001	PEM	0	0.03	0	NA	38.62191	-80.15616
wrap017e	56.3	Randolph	05050007	PEM	0	0.02	0	NA	38.61811	-80.15627
wrap019e	56.4	Randolph	05050007	PEM	0	<0.01	0	NA	38.61748	-80.15600
wrap020e	56.4	Randolph	05050007	PEM	0	0.04	0	Open Cut	38.61727	-80.15652
wrap020s	56.4	Randolph	05050007	PSS	0	0.16	0	Open Cut	38.61679	-80.15647
wrap022e	56.4	Randolph	05050007	PEM	0	0.01	0	NA	38.61617	-80.15648
wrap024s	56.5	Randolph	05050007	PSS	0	<0.01	0	NA	38.61483	-80.15585
wrap025e	56.5	Randolph	05050007	PEM	0	0.01	0	NA	38.61429	-80.15610
wrap026e	56.7	Randolph	05050007	PEM	14	0.01	0	Open Cut	38.61198	-80.15548
wrap027e	56.7	Randolph	05050007	PEM	10	0.05	0	Open Cut	38.61164	-80.15535
wrap028e	56.7	Randolph	05050007	PEM	8	0.03	0	Open Cut	38.61155	-80.15571
wrap029e	56.7	Randolph	05050007	PEM	11	0.01	0	Open Cut	38.61061	-80.15590
wrap030e	56.8	Randolph	05050007	PEM	0	<0.01	0	NA	38.61016	-80.15650
wrae200e	56.8	Randolph	05050007	PEM	0	0.02	0	NA	38.60903	-80.15636
wrae201e	57.3	Randolph	05050007	PEM	0	<0.01	0	NA	38.60249	-80.16608
wrae202e	57.4	Randolph	05050007	PEM	0	<0.01	0	NA	38.60178	-80.16625
wrae203e	57.4	Randolph	05050007	PEM	10	0.02	0	Open Cut	38.60151	-80.16625
wrae205e	57.4	Randolph	05050007	PEM	0	<0.01	0	Open Cut	38.60081	-80.16590
wrae204e	57.4	Randolph	05050007	PEM	0	0.02	0	NA	38.60040	-80.16632
wrac104e	57.4	Randolph	05050007	PEM	76	0.08	0	Open Cut	38.59951	-80.16602
wrae240e	57.9	Randolph	05050007	PEM	11	0.03	0	Open Cut	38.59082	-80.16268
wrae239e	57.9	Randolph	05050007	PEM	0	0.01	0	Open Cut	38.59056	-80.16240
wrae237e	58.2	Randolph	05050007	PEM	8	0.03	0	Open Cut	38.58456	-80.15888
wrae236e	58.3	Randolph	05050007	PEM	0	<0.01	0	NA	38.58420	-80.15888

TABLE 6

Wetlands Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia

Unique ID	Milepost	County	Hydrologic Unit Code (HUC8)	Cowardin Classification [a]	Crossing Length (feet)	Temporary Construction Impacts (acres) [b]	Permanent Operational Impacts (acres)[c]	Construction Method[d]	Latitude	Longitude
wrae235e	58.3	Randolph	05050007	PEM	99	0.21	0	Open Cut	38.58326	-80.15847
wrae207e	60.3	Randolph	05050007	PEM	15	0.02	0	Open Cut	38.54621	-80.13641
wrae209e	61.2	Randolph	05050007	PEM	0	0.01	0	NA	38.52964	-80.13445
wrae225e	61.7	Randolph	05050007	PEM	0	<0.01	0	Open Cut	38.52474	-80.12699
wrae223e	62.2	Randolph	05050007	PEM	45	0.11	0	Open Cut	38.51700	-80.12193
wrae222e	62.2	Randolph	05050007	PEM	110	0.21	0	Open Cut	38.51631	-80.12082
wrae220s	62.4	Randolph	05050007	PSS	0	<0.01	0	NA	38.51378	-80.12082
wrae220e	62.4	Randolph	05050007	PEM	14	0.03	0	Open Cut	38.51347	-80.12052
wrae219e	62.4	Randolph	05050007	PEM	0	0.05	0	Open Cut	38.51319	-80.12015
wrae218e	62.6	Randolph	05050007	PEM	0	0.02	0	Open Cut	38.51388	-80.11639
wrae217e	62.6	Randolph	05050007	PEM	31	0.03	0	Open Cut	38.51394	-80.11444
wrae216e	62.8	Randolph	05050007	PEM	86	0.20	0	Open Cut	38.51242	-80.11034
wrae215f	63.0	Randolph	05020001	PFO	49	0.09	0.03	Open Cut	38.51189	-80.10769
wrae214e	63.0	Randolph	05020001	PEM	78	0.11	0	Open Cut	38.51072	-80.10732
wrae212e	63.3	Randolph	05020001	PEM	16	0.02	0	Open Cut	38.50665	-80.10494
wrae213f	63.3	Randolph	05020001	PFO	0	<0.01	0	NA	38.50658	-80.10472
wrae211e	63.5	Randolph	05020001	PEM	28	0.04	0	Open Cut	38.50291	-80.10216
wrae210e	63.8	Randolph	05020001	PEM	26	0.01	0	Open Cut	38.50086	-80.09515
wpoe002e	71.0	Pocahontas	05050007	PEM	6	<0.01	0	Open Cut	38.38450	-80.05199
wpoa406e	71.7	Pocahontas	05050003	PEM	0	<0.01	0	NA	38.37385	-80.06140
wpoa404e	71.7	Pocahontas	05050003	PEM	0	<0.01	0	NA	38.37404	-80.06196
wpoa404e	71.7	Pocahontas	05050003	PEM	0	<0.01	0	NA	38.37403	-80.06212
wpoa403e	71.7	Pocahontas	05050003	PEM	345	0.45	0	Open Cut	38.37366	-80.06229
wpoc105f	72.2	Pocahontas	05050003	PFO	181	0.31	0.12	Open Cut	38.36568	-80.06474
wpoc109e	74.6	Pocahontas	05050003	PEM	53	0.05	0	Open Cut	38.34562	-80.01146
wpoc109e	74.6	Pocahontas	05050003	PEM	0	<0.01	0	NA	38.34576	-80.01128
wpoc100e	75.5	Pocahontas	05050003	PEM	70	0.12	0	Open Cut	38.33370	-79.99639
wpoc101e	75.6	Pocahontas	05050003	PEM	25	0.05	0	Open Cut	38.33318	-79.99483
wpoc102e	75.7	Pocahontas	05050003	PEM	961	1.70	0	Open Cut	38.33510	-79.98917
wpoc103e	76.2	Pocahontas	05050003	PEM	38	0.25	0	Open Cut	38.33738	-79.97897
wpoc103e	76.3	Pocahontas	05050003	PEM	147	0.29	0	Open Cut	38.33748	-79.97534
wpoc104e	76.4	Pocahontas	05050003	PEM	16	0.11	0	Open Cut	38.33702	-79.97265
wpoc106e	76.4	Pocahontas	05050003	PEM	27	0.04	0	Open Cut	38.33634	-79.97199

TABLE 6

Wetlands Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia

Unique ID	Milepost	County	Hydrologic Unit Code (HUC8)	Cowardin Classification [a]	Crossing Length (feet)	Temporary Construction Impacts (acres) [b]	Permanent Operational Impacts (acres) [c]	Construction Method [d]	Latitude	Longitude
wpoc107s	76.5	Pocahontas	05050003	PSS	17	0.02	0	Open Cut	38.33565	-79.97161
wpoc107s	76.5	Pocahontas	05050003	PSS	23	0.05	0.01	Open Cut	38.33566	-79.97147
wpoe011e	81.0	Pocahontas	05050003	PEM	8	<0.01	0	Open Cut	38.30156	-79.87318
wpoe011e	81.0	Pocahontas	05050003	PEM	14	0.07	0	Open Cut	38.30143	-79.87315
wpoe011e	81.0	Pocahontas	05050003	PEM	0	<0.01	0	NA	38.30118	-79.87319
wpoe010e	81.1	Pocahontas	05050003	PEM	26	0.03	0	Open Cut	38.30064	-79.87070
wpoa400e	82.7	Pocahontas	05050003	PEM	0	0.02	0	Open Cut	38.29589	-79.83426
FIELD SURVEYED FEATURES ACCESS ROADS										
wleb110e	2.4	Lewis	05020002	PEM	0	<0.01	0	Temp AR	39.14765	-80.5455
wleb109e	2.4	Lewis	05020002	PEM	68	0.05	0	Temp AR	39.14813	-80.5451
wleb109e	2.4	Lewis	05020002	PEM	97	0.06	0	Temp AR	39.14842	-80.5447
wleb111e	3.0	Lewis	05020002	PEM	282	0.13	0.13 [e]	Perm AR	39.14158	-80.5358
wleb105e	6.8	Lewis	05020002	PEM	13	0.01	0	Temp AR	39.13860	-80.4731
wlea088e	12.7	Lewis	05020002	PEM	0	<0.01	<0.01 [e]	Perm AR	39.10147	-80.4099
wlec001e	13.6	Lewis	05020002	PEM	0	0.01	0.01 [e]	Perm AR	39.08487	-80.4097
wlea079e	14.5	Lewis	05020002	PEM	3	0.02	0.02 [e]	Perm AR	39.08495	-80.3881
wlea079e	14.5	Lewis	05020002	PEM	0	<0.01	<0.01 [e]	Perm AR	39.08494	-80.3880
wlea080e	14.5	Lewis	05020002	PEM	0	<0.01	<0.01 [e]	Perm AR	39.08337	-80.3886
wlea080e	14.5	Lewis	05020002	PEM	0	<0.01	<0.01 [e]	Perm AR	39.08338	-80.3885
wlea081e	14.7	Lewis	05020002	PEM	28	0.03	0.03 [e]	Perm AR	39.08125	-80.3866
wlea082e	14.7	Lewis	05020002	PEM	0	<0.01	<0.01 [e]	Perm AR	39.08057	-80.3858
wlea082e	14.7	Lewis	05020002	PEM	0	<0.01	<0.01 [e]	Perm AR	39.08064	-80.3858
wlea083e	14.7	Lewis	05020002	PEM	0	<0.01	<0.01 [e]	Perm AR	39.08050	-80.3856
wlea083e	14.7	Lewis	05020002	PEM	0	<0.01	<0.01 [e]	Perm AR	39.08056	-80.3855
wlea084e	14.8	Lewis	05020002	PEM	0	<0.01	0	Temp AR	39.07760	-80.3835
wlea084e	14.8	Lewis	05020002	PEM	0	<0.01	0	Temp AR	39.07758	-80.3835
wlea085e	14.8	Lewis	05020002	PEM	198	0.12	0.02 [e]	Perm AR	39.07625	-80.3852
wlea085e	14.8	Lewis	05020002	PEM	198	0.12	0	Temp AR	39.07625	-80.3852
wlea087e	14.8	Lewis	05020002	PEM	0	<0.01	<0.01 [e]	Perm AR	39.07505	-80.3838
wlea087e	14.9	Lewis	05020002	PEM	0	<0.01	<0.01 [e]	Perm AR	39.07498	-80.3838
wlea086e	15.3	Lewis	05020002	PEM	72	0.04	0.04 [e]	Perm AR	39.07354	-80.3825
wleb107e	15.3	Lewis	05020002	PEM	0	<0.01	<0.01 [e]	Perm AR	39.07047	-80.3885
wlea076e	15.5	Lewis	05020002	PEM	0	0.01	0.01 [e]	Perm AR	39.06686	-80.3867

TABLE 6

Wetlands Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia

Unique ID	Milepost	County	Hydrologic Unit Code (HUC8)	Cowardin Classification [a]	Crossing Length (feet)	Temporary Construction Impacts (acres) [b]	Permanent Operational Impacts (acres) [c]	Construction Method [d]	Latitude	Longitude
wlea076e	15.5	Lewis	05020002	PEM	0	<0.01	<0.01 [e]	Perm AR	39.06682	-80.3866
wlea076e	15.5	Lewis	05020002	PEM	0	<0.01	<0.01 [e]	Perm AR	39.06706	-80.386
wlea077e	16.5	Lewis	05020002	PEM	287	0.19	0.19 [e]	Perm AR	39.05526	-80.3836
wlea075e	17.3	Lewis	05020002	PEM	0	<0.01	<0.01 [e]	Perm AR	39.05059	-80.3693
wlec005e	19.0	Lewis	05020002	PEM	38	0.02	0.02 [e]	Perm AR	39.03255	-80.3488
wlec006e	20.2	Lewis	05020002	PEM	33	0.03	0.03 [e]	Perm AR	39.03516	-80.3328
wlec006e	20.2	Lewis	05020002	PEM	95	0.06	0.06 [e]	Perm AR	39.03528	-80.3324
wupb101e	24.0	Upshur	05020001	PEM	0	0.02	0	Temp AR	39.00398	-80.288
wupa001e	24.0	Upshur	05020001	PEM	21	0.01	0	Temp AR	39.00228	-80.2911
wupa001e	24.0	Upshur	05020001	PEM	25	0.02	0	Temp AR	39.00210	-80.2910
wupc001e	26.8	Upshur	05020002	PEM	0	0.02	0.02 [e]	Perm AR	38.97005	-80.2690
wupc001e	26.8	Upshur	05020002	PEM	0	0.01	0.01 [e]	Perm AR	38.97011	-80.2688
wupc001e	26.8	Upshur	05020002	PEM	0	<0.01	<0.01 [e]	Perm AR	38.96996	-80.2691
wupc001e	26.8	Upshur	05020002	PEM	0	<0.01	<0.01 [e]	Perm AR	38.9699	-80.2692
wupb007e	29.3	Upshur	05020001	PEM	42	0.03	0.03 [e]	Perm AR	38.94346	-80.2531
wupb009f	36.1	Upshur	05020001	PFO	68	0.01	0.01 [e]	Perm AR	38.88668	-80.1900
wupa050e	37.1	Upshur	05020001	PEM	89	0.07	0	Temp AR	38.87592	-80.1826
wupb050e	37.8	Upshur	05020001	PEM	17	0.01	<0.01 [e]	Perm AR	38.87165	-80.1747
wupb050e	37.8	Upshur	05020001	PEM	17	0.01	0	Temp AR	38.87165	-80.1747
wupb103e	41.9	Upshur	05020001	PEM	87	0.03	0.03 [e]	Perm AR	38.83634	-80.1236
wraa059f	47.1	Randolph	05020001	PFO	67	0.04	0.04 [e]	Perm AR	38.77300	-80.0961
wrab102e	47.3	Randolph	05020001	PEM	0	0.02	0.02 [e]	Perm AR	38.77202	-80.0938
wraa404e	50.9	Randolph	05020001	PEM	411	0.22	0.22 [e]	Perm AR	38.70956	-80.1133
wraa431s	51.4	Randolph	05020001	PSS	0	<0.01	<0.01 [e]	Perm AR	38.69968	-80.1139
wraa432s	51.8	Randolph	05020001	PSS	0	0.02	0.02 [e]	Perm AR	38.6902	-80.1176
wraa434s	52.2	Randolph	05020001	PSS	19	0.01	0.01 [e]	Perm AR	38.69064	-80.1302
wraa423e	52.2	Randolph	05020001	PEM	56	0.04	0.04 [e]	Perm AR	38.68961	-80.1288
wraa423s	52.2	Randolph	05020001	PSS	132	0.08	0.08 [e]	Perm AR	38.68978	-80.1293
wraa435e	52.3	Randolph	05020001	PEM	115	0.07	0.07 [e]	Perm AR	38.68533	-80.1284
wraa435e	52.3	Randolph	05020001	PEM	0	<0.01	<0.01 [e]	Perm AR	38.68461	-80.1288
wraa436e	53.2	Randolph	05020001	PEM	0	0.03	0.03 [e]	Perm AR	38.66995	-80.1321
wraa436e	53.3	Randolph	05020001	PEM	0	<0.01	<0.01 [e]	Perm AR	38.66859	-80.1324
wraa436e	53.3	Randolph	05020001	PEM	0	<0.01	<0.01 [e]	Perm AR	38.66861	-80.1327

TABLE 6

Wetlands Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia

Unique ID	Milepost	County	Hydrologic Unit Code (HUC8)	Cowardin Classification [a]	Crossing Length (feet)	Temporary Construction Impacts (acres) [b]	Permanent Operational Impacts (acres) [c]	Construction Method [d]	Latitude	Longitude
wraa436e	53.3	Randolph	05020001	PEM	0	<0.01	<0.01 [e]	Perm AR	38.66827	-80.1320
wrac113e	54.2	Randolph	05020001	PEM	0	0.02	0.02 [e]	Perm AR	38.66101	-80.1518
wrac110e	54.3	Randolph	05020001	PEM	0	0.02	0.02 [e]	Perm AR	38.65876	-80.1511
wrac112e	54.3	Randolph	05020001	PEM	0	<0.01	<0.01 [e]	Perm AR	38.65787	-80.1507
wrac114e	55.1	Randolph	05020001	PEM	0	<0.01	<0.01 [e]	Perm AR	38.64268	-80.1628
wrac114e	55.1	Randolph	05020001	PEM	0	<0.01	<0.01 [e]	Perm AR	38.64234	-80.1624
wrac108e	57.3	Randolph	05050007	PEM	0	<0.01	<0.01 [e]	Perm AR	38.60465	-80.1716
wrae201e	57.3	Randolph	05050007	PEM	8	<0.01	<0.01 [e]	Perm AR	38.60249	-80.1661
wrae202e	57.4	Randolph	05050007	PEM	111	0.05	0.05 [e]	Perm AR	38.60178	-80.1663
wrae203e	57.4	Randolph	05050007	PEM	29	0.02	0.02 [e]	Perm AR	38.60151	-80.1662
wrae232e	57.7	Randolph	05050007	PEM	0	<0.01	<0.01 [e]	Perm AR	38.59398	-80.1843
wrae233e	57.7	Randolph	05050007	PEM	0	<0.01	<0.01 [e]	Perm AR	38.59358	-80.1850
wrae233e	57.7	Randolph	05050007	PEM	124	0.10	0.10 [e]	Perm AR	38.59289	-80.1860
wrae241e	57.7	Randolph	05050007	PEM	0	<0.01	<0.01 [e]	Perm AR	38.59269	-80.1862
wrae241e	57.7	Randolph	05050007	PEM	0	0.01	0.01 [e]	Perm AR	38.59255	-80.1864
wrae230e	57.7	Randolph	05050007	PEM	0	<0.01	<0.01 [e]	Perm AR	38.59232	-80.1853
wrae230e	57.7	Randolph	05050007	PEM	3	0.01	0.01 [e]	Perm AR	38.59228	-80.1854
wrae231e	57.7	Randolph	05050007	PEM	33	0.03	0.03 [e]	Perm AR	38.59210	-80.1854
wrae235e	57.8	Randolph	05050007	PEM	0	<0.01	0	Temp AR	38.58719	-80.1676
wrae235e	58.1	Randolph	05050007	PEM	0	<0.01	0	Temp AR	38.58686	-80.1672
wrae235e	58.1	Randolph	05050007	PEM	839	0.62	0	Temp AR	38.58407	-80.1645
wrae235e	58.3	Randolph	05050007	PEM	431	0.26	0	Temp AR	38.58248	-80.1609
wrae235e	58.3	Randolph	05050007	PEM	395	0.20	0	Temp AR	38.58326	-80.1585
wrae235e	58.3	Randolph	05050007	PEM	119	0.11	0	Temp AR	38.58255	-80.1594
wrae235e	58.4	Randolph	05050007	PEM	10	0.04	0	Temp AR	38.58175	-80.1596
wrac106e	59.9	Randolph	05050007	PEM	0	<0.01	<0.01 [e]	Perm AR	38.55460	-80.1398
wrae214e	63.0	Randolph	05020001	PEM	36	0.02	0.02 [e]	Perm AR	38.51072	-80.1073
wrac115e	63.1	Randolph	05050007	PEM	0	<0.01	<0.01 [e]	Perm AR	38.50917	-80.1087
wrae212e	63.3	Randolph	05020001	PEM	0	<0.01	<0.01 [e]	Perm AR	38.50695	-80.1046
wpoa404e	71.7	Pocahontas	05050003	PEM	0	<0.01	<0.01 [e]	Perm AR	38.37404	-80.0620
wpoa404e	71.7	Pocahontas	05050003	PEM	288	0.16	0.16 [e]	Perm AR	38.37403	-80.0621
wpoa403e	71.7	Pocahontas	05050003	PEM	93	0.02	0.02 [e]	Perm AR	38.37366	-80.0623
wpoa403e	71.7	Pocahontas	05050003	PEM	6	<0.01	<0.01 [e]	Perm AR	38.37386	-80.0622

TABLE 6

Wetlands Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia

Unique ID	Milepost	County	Hydrologic Unit Code (HUC8)	Cowardin Classification [a]	Crossing Length (feet)	Temporary Construction Impacts (acres) [b]	Permanent Operational Impacts (acres) [c]	Construction Method [d]	Latitude	Longitude
wpoa413e	71.9	Pocahontas	05050007	PEM	0	<0.01	<0.01 [e]	Perm AR	38.38239	-80.0809
wpoa414e	71.9	Pocahontas	05050007	PEM	0	<0.01	<0.01 [e]	Perm AR	38.38281	-80.0827
wpoa411e	71.9	Pocahontas	05050007	PEM	12	<0.01	<0.01 [e]	Perm AR	38.37770	-80.0773
wpoa415e	71.9	Pocahontas	05050007	PEM	25	0.01	0.01 [e]	Perm AR	38.38239	-80.0846
wpoa415e	71.9	Pocahontas	05050007	PEM	0	<0.01	<0.01 [e]	Perm AR	38.38251	-80.0843
DESKTOP/PROVISIONAL FEATURES PIPELINE										
wrae262e	51.1	Randolph	05020001	PEM	0	0.22	0	-	38.69306	-79.99245
wrae263e	51.1	Randolph	05020001	PEM	0	1.64	0	-	38.69355	-79.99325
wrae264e	51.1	Randolph	05020001	PEM	0	0.34	0	-	38.69335	-79.99469
DKWF_WV_006f	58.2	Randolph	05050007	PFO	72	0.21	0.12	-	38.58383	-80.16131
wrae261e	63.0	Randolph	05020001	PEM	0	0.04	0	-	38.54814	-80.07685
DSWF_WV_007s	66.6	Pocahontas	05050007	PSS	87	0.25	0.15	-	38.46440	-80.06053
wpoe212e	67.0	Pocahontas	05050007	PEM	31	0.07	0.04	-	38.45749	-80.06179
wpoy002e	70.4	Pocahontas	05050007	PEM	0	0.10	0	-	38.39651	-80.04722
wpoy007e	81.0	Pocahontas	05050003	PEM	0	0.08	0	-	38.16493	-79.97736
wpoy005e	81.0	Pocahontas	05050003	PEM	0	7.69	0	-	38.16609	-79.97623
wpoy004e	81.0	Pocahontas	05050003	PEM	0	0.36	0	-	38.16948	-79.97192
wpoy008e	81.0	Pocahontas	05050003	PEM	0	2.56	0	-	38.16836	-79.97610
wpoy009e	81.0	Pocahontas	05050003	PEM	0	0.05	0	-	38.17057	-79.97362
wpoe214e	81.0	Pocahontas	05050003	PEM	0	1.26	0	-	38.19213	-79.95188
DESKTOP/PROVISIONAL FEATURES ACCESS ROADS										
wupe002e	31.2	Upshur	05020001	PEM	0	0.01	0.01 [e]	Perm AR	38.92940	-80.23789
wupe003e	31.3	Upshur	05020001	PEM	19	0.01	0.01 [e]	Perm AR	38.92660	-80.23757
DKWF_WV_001f	36.0	Upshur	05020001	PFO	134	0.09	0.09 [e]	Perm AR	38.88850	-80.19232
DKWF_WV_002f	50.5	Randolph	05020001	PFO	107	0.07	0.07 [e]	Perm AR	38.71564	-80.10737
DKWF_WV_011f	50.7	Randolph	05020001	PFO	196	0.13	0.13 [e]	Perm AR	38.71245	-80.13088
wrae250e	50.9	Randolph	05020001	PEM	0	<0.01	<0.01 [e]	Perm AR	38.70930	-80.11637
wrae251e	51.5	Randolph	05020001	PEM	33	0.02	0.02 [e]	Perm AR	38.70115	-80.11830

TABLE 6

Wetlands Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia

Unique ID	Milepost	County	Hydrologic Unit Code (HUC8)	Cowardin Classification [a]	Crossing Length (feet)	Temporary Construction Impacts (acres) [b]	Permanent Operational Impacts (acres) [c]	Construction Method [d]	Latitude	Longitude
DKWF_WV_ 010f	51.5	Randolph	05020001	PFO	191	0.13	0.13 [e]	Perm AR	38.70800	-80.13516
DKWF_WV_ 005s	53.6	Randolph	05020001	PSS	187	0.13	0.13 [e]	Perm AR	38.66181	-80.13294
wrae282s	56.2	Randolph	05050007	PSS	0	0.02	0.02 [e]	Perm AR	38.61871	-80.16968
wrae282e	56.2	Randolph	05050007	PEM	0	0.03	0.03 [e]	Perm AR	38.61902	-80.16990
wrae281e	56.7	Randolph	05050007	PEM	0	<0.01	<0.01 [e]	Perm AR	38.61252	-80.16416
wrae280e	57.3	Randolph	05050007	PEM	0	<0.01	<0.01 [e]	Perm AR	38.60473	-80.16596
wrae278e	57.8	Randolph	05050007	PEM	0	<0.01	<0.01 [e]	Perm AR	38.58982	-80.18502
wrae279e	57.8	Randolph	05050007	PEM	0	<0.01	<0.01 [e]	Perm AR	38.59083	-80.18510
wrae267e	57.8	Randolph	05050007	PEM	12	0.02	0.02 [e]	Perm AR	38.58685	-80.17947
wrae275e	57.8	Randolph	05050007	PEM	69	0.05	0.05 [e]	Perm AR	38.58738	-80.18111
wrae274e	57.8	Randolph	05050007	PEM	142	0.07	0.07 [e]	Perm AR	38.58762	-80.17406
wrae273e	57.8	Randolph	05050007	PEM	363	0.14	0.14 [e]	Perm AR	38.58834	-80.17222
wrae266e	57.8	Randolph	05050007	PEM	163	0.18	0.18 [e]	Perm AR	38.58702	-80.17371
wrae265e	57.8	Randolph	05050007	PEM	191	0.08	0.08 [e]	Perm AR	38.58713	-80.17149
wrae272e	57.8	Randolph	05050007	PEM	132	0.05	0.05 [e]	Perm AR	38.58876	-80.17067
wrae271e	57.8	Randolph	05050007	PEM	56	0.03	0.03 [e]	Perm AR	38.58884	-80.16967
wrae270e	57.8	Randolph	05050007	PEM	164	0.07	0.07 [e]	Perm AR	38.58881	-80.16812
wrae269e	57.8	Randolph	05050007	PEM	40	0.02	0.02 [e]	Perm AR	38.58857	-80.16689
wrae268e	58.0	Randolph	05050007	PEM	25	0.03	0.03 [e]	Perm AR	38.58780	-80.16408
wrae256s	58.4	Randolph	05050007	PSS	73	0.05	0.05 [e]	Perm AR	38.58210	-80.15560
wrae253s	58.5	Randolph	05050007	PSS	0	0.01	0.01 [e]	Perm AR	38.57989	-80.15302
wrae257s	58.7	Randolph	05050007	PSS	124	0.12	0.12 [e]	Perm AR	38.57837	-80.15072
wrae258e	58.8	Randolph	05050007	PEM	0	0.01	0.01 [e]	Perm AR	38.57548	-80.14651
wrae259e	59.1	Randolph	05050007	PEM	0	<0.01	<0.01 [e]	Perm AR	38.57151	-80.14339
wrae260e	59.2	Randolph	05050007	PEM	168	0.10	0.10 [e]	Perm AR	38.56775	-80.14096
wrae254e	59.7	Randolph	05050007	PEM	0	0.02	0.02 [e]	Perm AR	38.56147	-80.13587
wrae242e	64.0	Randolph	05050007	PEM	0	0.02	0.02 [e]	Perm AR	38.49776	-80.09237
wrae243e	64.2	Randolph	05050007	PEM	443	0.18	0.18 [e]	Perm AR	38.49786	-80.08850
wpoe213e	67.0	Pocahontas	05050007	PEM	62	0.04	0.04 [e]	Perm AR	38.45849	-80.06283
wpoe212e	67.0	Pocahontas	05050007	PEM	61	0.03	0.03 [e]	Perm AR	38.45749	-80.06179

TABLE 6

Wetlands Crossed and Crossing Methods for the Atlantic Coast Pipeline – West Virginia

Unique ID	Milepost	County	Hydrologic Unit Code (HUC8)	Cowardin Classification [a]	Crossing Length (feet)	Temporary Construction Impacts (acres) [b]	Permanent Operational Impacts (acres) [c]	Construction Method [d]	Latitude	Longitude
DKWF_WV_ 008e	68.8	Pocahontas	05050007	PEM	12	0.02	0.02 [e]	Perm AR	38.42731	-80.04472
wpoa416e	71.9	Pocahontas	05050007	PEM	14	<0.01	<0.01 [e]	Perm AR	38.37792	-80.08781
wpoa417e	71.9	Pocahontas	05050007	PEM	34	0.02	0.02 [e]	Perm AR	38.37753	-80.08826
wpoa418e	72.0	Pocahontas	05050007	PEM	56	0.02	0.02 [e]	Perm AR	38.37176	-80.08650
wpoe216e	75.2	Pocahontas	05050003	PEM	0	<0.01	<0.01 [e]	Perm AR	38.33410	-80.00395
wpoe217e	75.2	Pocahontas	05050003	PEM	0	<0.01	<0.01 [e]	Perm AR	38.33506	-80.00247
WEST VIRGINIA TOTALS					**14,546**	**31.18**	**4.40**			

[a] Wetland types according to Cowardin et al. (1979):
PEM = palustrine emergent
PFO = palustrine forested
PSS = palustrine scrub-shrub

[b] Temporary wetland impacts are associated with a 75-foot-wide construction right-of-way through wetlands. Note that while some temporary impacts exceed 0.5 acre per crossing, no permanent impacts will exceed this threshold under USACE Nationwide Permit 12.

[c] Permanent Operational Impacts include both wetland type conversion as well as permanent loss impacts. Wetland vegetation type conversion impacts are associated with scrub-shrub and forested wetlands. Operational requirements (corrosion/leak surveys) allow a 10-foot-wide corridor centered over the pipeline to be maintained in an herbaceous state, and allow trees within 15 feet on either side of the pipeline with roots that could compromise the integrity of the pipeline to be selectively cut from the right-of-way. To determine conversion impacts on scrub-shrub wetlands, a 10-foot-wide corridor centered over the pipeline was assessed. A 30-foot-wide corridor centered over the pipeline was assessed for forested wetlands. Since the right-of-way will be maintained in an herbaceous state, no conversion impacts will occur in PEM wetlands. Permanent loss impacts will occur where permanent access road improvements are required for operations.

[d] Construction methods are provided for wetlands crossed by the centerline. Wetlands within workspace but not crossing the centerline are included in the table to note wetlands that could be temporarily impacted by construction, but are not anticipated to be directly impacted by dredging or trenching activities. These wetlands are noted as N/A in the Construction Methods column. Impacts associated with permanent access roads are noted as Perm AR, and temporary impacts associated with temporary access roads are noted as Temp AR.

[e] Access road impacts that are anticipated to be permanent loss of wetlands.

Note: Totals shown in this table may not equal the sum of addends due to rounding

10.0 BRIEF DESCRIPTION OF WETLAND FUNCTIONS

Wetlands crossed by the ACP primarily consist of wetlands associated with riparian bottoms at lower elevations of the valleys crossed by the Project. Wetlands crossed in West Virginia consist of palustrine emergent, palustrine scrub-shrub, and palustrine forested wetlands, as classified by the Cowardin Classification System (Cowardin et al., 1979).

Maintenance activities along the pipeline right-of-way will impact approximately 0.39 acre of PFO wetlands and 0.02 acre of PSS wetlands due to the conversion of PFO wetlands to PSS and PEM wetland types, and conversion of PSS wetlands to the PEM wetland type (see table 7). PEM wetlands will be temporarily impacted during construction: no conversion impacts to PEM wetlands will occur. Atlantic and DTI will minimize impacts on wetlands by following the wetland construction and restoration guidelines contained in the Plan and Procedures. The proposed wetland mitigation measures are intended to avoid wetland impacts to the greatest extent practicable, minimize the area and duration of disturbance, reduce soil disturbance, and enhance wetland revegetation after construction. Some of the measures proposed include:

- limiting the construction right-of-way width to 75 feet through wetlands (unless alternative, site-specific measures are requested by Atlantic and DTI and approved by FERC and other applicable agencies);
- locating ATWS at least 50 feet away from wetland boundaries (unless alternative, site-specific measures are requested by Atlantic and DTI and approved by FERC and other applicable agencies);
- limiting the operation of construction equipment within wetlands to only equipment essential for clearing, excavation, pipe installation, backfilling, and restoration;
- preventing the compaction and rutting of wetland soils by operating equipment from atop timber equipment mats or timber riprap in wetlands that are not excessively saturated;
- restricting grading in wetlands to the area directly over the trenchline, except where necessary to provide safety;
- installing trench breakers or trench plugs at the boundaries of wetlands to prevent draining of wetlands;
- segregating topsoil from the trench in non-saturated wetlands and returning topsoil to its original location during backfilling to avoid changes in the subsurface hydrology and promote re-establishment of the original plant community by replacing the seed bank found in the topsoil;
- installing temporary and permanent erosion and sediment control devices, and re-establishing vegetation on adjacent upland areas, to avoid erosion and sedimentation into wetlands;
- removing woody stumps only from areas directly above the trenchline, or where they will create a safety hazard, to facilitate the re-establishment of woody species by existing root structures;

- returning graded areas to their preconstruction contours to the greatest extent practicable, and returning excavated soil from the trench within the wetlands back to their original soil horizon to maintain hydrologic characteristics;
- prohibiting the storage of chemicals, fuels, hazardous materials, and lubricating oils within 100 feet of a wetland;
- prohibiting parking and/or fueling of equipment within 100 feet of a wetland, unless the Environmental Inspector determines there is no reasonable alternative, and appropriate steps (such as secondary containment structure) are taken;
- dewatering the trench at a controlled rate into an energy dissipation/sediment filtration device, such as a geotextile filter bag and properly installed straw bale structure, to minimize the potential for erosion and sedimentation;
- preventing the invasion or spread of undesirable exotic vegetation by implementing a project-specific *Invasive Plant Species Management Plan*;
- limiting post-construction maintenance of vegetation to removal of trees with roots that could compromise the integrity of the pipeline within 15 feet of the pipeline centerline, and the maintenance of a 10-foot-wide corridor centered over the pipeline as herbaceous vegetation; and
- monitoring of the success of wetland revegetation following construction until wetland revegetation is successful.

TABLE 7

Summary of Wetland Functional Types Impacted by of the Atlantic Coast Pipeline in West Virginia

Pipeline Facility/State or Commonwealth	Cowardin Classification [a]	Crossing Length (Feet)	Temporary Construction Impact (acres)[b]	Wetland Conversion (acres)[c]	Permanent Wetland Loss (acres)
	PEM	12,509	28.53	NA	2.81
	PFO	1,330	1.65	0.39	0.59
	PSS	707	1.00	0.02	0.59
West Virginia Subtotal		**14,546**	**31.18**	**0.41**	**3.99**

A Wetland types according to Cowardin et al. (1979):
PEM = palustrine emergent
PFO = palustrine forested
PSS = palustrine scrub-shrub

b Temporary wetland impacts are associated with a 75-foot-wide construction right-of-way through wetlands.

c Wetland vegetation type conversion impacts are associated with scrub-shrub and forested wetlands. Operational requirements (corrosion/leak surveys) allow a 10-foot-wide corridor centered over the pipeline to be maintained in an herbaceous state, and allow trees within 15 feet on either side of the pipeline with roots that could compromise the integrity of the pipeline to be selectively cut from the right-of-way. To determine conversion impacts on scrub-shrub wetlands, a 10-foot-wide corridor centered over the pipeline was assessed. A 30-foot-wide corridor centered over the pipeline was assessed for forested wetlands. However, because the pipeline easement will be maintained in an herbaceous state, there will be no wetland conversion impacts on PEM wetlands.

Restoration/revegetation of wetlands will be considered successful when the affected wetland satisfies the federal definition of a wetland (i.e., soils, hydrology, and vegetation); the vegetation is at least 80 percent of the cover documented for the wetland prior to construction, or at least 80 percent of the cover in adjacent, undisturbed areas of the wetland; or the plant species composition is consistent with early successional wetland plant communities in the affected ecoregion (if natural rather than active revegetation is used); and invasive plant species are absent, unless they are abundant in adjacent areas that were not disturbed by construction.

11.0 TYPE, COMPOSITION, AND QUANTITY OF FILL MATERIAL

After the pipeline is installed across a waterbody or wetland using one of the methods described in sections 3.0 through 3.2 above, the trench will be backfilled with native material excavated from the trench. To minimize impacts on subsurface hydrology in unsaturated wetlands, subsoil will be backfilled first, followed by topsoil. Where necessary, trench plugs will also be installed at the wetland/upland interface to maintain wetland hydrology.

The pipe trench will be excavated by rotary trenching machines, track-mounted backhoes, or other similar equipment. Trench temporary side-cast will be deposited adjacent to the trench within the construction right-of-way. The trench for each pipeline will be excavated to a depth that provides sufficient cover over the pipeline after backfilling. The typical dimensions of each pipeline trench will vary depending on a number of factors, such as the diameter of the pipe being installed and the substrate in the vicinity of the trench. The bottom width of the trench will be sufficient to accommodate the diameter of the pipeline and sufficient pad material around it (typically approximately one foot on either side of the pipeline). The top width will vary to allow the sides of the trench to be adapted to local soil conditions at the time of construction. If trench dewatering is required within or off of the construction right-of-way, it will be conducted in accordance with the Plan and Procedures and applicable permits in a manner that will not cause erosion or result in silt-laden water flowing into a wetland or waterbody.

In areas where topsoil segregation is required, subsoil from trench excavations will be placed adjacent to the topsoil in a separate pile to allow for proper restoration of the soil during backfilling and restoration. Gaps will be left between the topsoil and subsoil piles to prevent stormwater runoff from backing up or flooding. Mixing of topsoil and subsoil piles will be prevented by separating them physically or with a mulch or silt fence barrier, where necessary, to accommodate reduced workspace.

The pipe will be lifted from the temporary supports and lowered into the trench using side-boom tractors. As necessary, trench breakers (stacked sand bags or foam) will be installed in the trench around the pipe in steeply sloped areas to prevent movement of subsurface water along the pipeline. After lowering-in, the trench will be backfilled with previously excavated materials using bladed equipment or backhoes. If the excavated material is rocky, the pipeline will be protected with a rock shield or covered with other suitable fill (e.g., crushed limestone rock). Excavated rock will then be used to backfill the trench to the top of the existing bedrock profile in the trench, except that large rock will be buried on the working side of the two-tone cut where the contractor levels the ground for construction. This will prevent large rocks from migrating into the pad material in the trench and making contact with the pipe. Additionally, excavated rock may be crushed with a rock pulverizer and incorporated into fill or used as gravel to upgrade access roads. Excavated material not required for backfill will be removed and disposed of at approved upland disposal sites.

In some cases, construction of aboveground facilities and access roads will require the permanent filling of wetlands. Existing access roads will be utilized where feasible. Where improvements are necessary for use, waters of the United States loss impacts will be minimized to the maximum extent practicable, and will be kept below the 0.5 acre Nationwide Permit 12 threshold. Where permanent impacts are required, Atlantic and Dominion will comply with all applicable Federal and Commonwealth/State permit requirements.

12.0 NO PRACTICAL ALTERNATIVE DEMONSTRATION

Atlantic has identified and evaluated a number of alternatives to the proposed Projects. These include a no-action alternative; alternative energy sources, including traditional and renewable sources; energy conservation measures; systems alternative; and conceptual collocation route alternatives.

12.1 NO ACTION ALTERNATIVE

Under the no-action alternative, the ACP would not be built and the environmental impacts associated with construction and operation of the proposed facilities would not occur. By not constructing this Project, however, Atlantic would be unable to meet their existing customers' demands for natural gas and the projected demand by other industrial, commercial, and domestic customers (including power-generating facilities) in Virginia and North Carolina. The projected demand is due to a combination of population growth and displacement of coal-fired electric power generation. In addition, other benefits from the Projects, such as future economic development opportunities, reduced energy costs in the region, and the repowering of coal-fired electric generation to gas-fired electric generation, would not be realized.

Under the no-action alternative, other natural gas transmission companies could propose to construct new facilities similar to the Project to meet the demand for new natural gas transportation service in Virginia and North Carolina. Such actions would likely result in impacts similar to or greater than those associated with the ACP, and might not meet the Project's objectives to satisfy demand from existing customers within the proposed time frames. For all these reasons, the no-action alternative is not practical and provides no advantage over the Project.

12.2 ALTERNATIVE ENERGY SOURCES

The use of alternative energy sources is an option to meet some of the short-term and long-term demands for energy in the target market areas. Potential alternative energy sources to natural gas include traditional fuels, such as coal and oil, nuclear energy, and electricity (including electricity generated from oil, coal, and nuclear power); and renewable energy sources, such as wind, solar, hydroelectric, biomass, and tidal and wave. Like the ACP, all of these alternative energy sources, depending on the location of the source, would require new infrastructure, including transmission facilities, to connect supply and demand areas.

12.3 ENERGY CONSERVATION

Energy conservation could help alleviate some of the growing demand for energy in the United States and in the States/Commonwealths to be serviced by the ACP. Commonwealth/ State and Federal energy conservation measures will likely play an important role in slowing the growth of energy demand in the coming decades. However, it is unlikely that these measures will offset the demand for new natural gas sources. The U.S. Energy Information Administration (EIA) predicts that United States energy use per capita will decrease by approximately 8 percent through 2040, as higher efficiency standards for vehicles and appliances take effect. Nevertheless, the EIA indicates that, even with the recently enacted energy efficiency policies, total primary energy consumption, including fuels used for electricity generation, will grow by 8.9 percent from 2013 to 2040 (EIA, 2015). To meet this demand, the EIA predicts that total domestic production of natural gas in the United States will grow from 24.4 trillion cubic feet in 2013 to 35.5 trillion cubic feet by 2040, and that shale gas production will make up 53 percent of total U.S. production in 2040, up from 40 percent in 2012 (EIA, 2014). The anticipated growth in natural gas demand will be driven primarily by its increased use for electric power generation and industrial applications.

Reduction in the need for additional energy is the preferred option wherever possible. Conservation of energy reduces the demand for limited existing reserves. Although energy conservation measures will be important elements in addressing future energy demands, it is unlikely that they will be able to offset more than a fraction of anticipated demand in the foreseeable future. As a result, energy conservation alone (or in conjunction with other alternatives) is not a viable alternative because it does not preclude the need for natural gas infrastructure projects like the ACP and SHP to meet the growing demand for energy.

12.4 SYSTEM ALTERNATIVES

System alternatives would make use of other existing, modified, or proposed pipeline systems to meet the same objectives as the ACP. Use of a system alternative would make it unnecessary to construct all or part of the ACP, though modifications or additions to existing or proposed systems could be required. The modifications or additions would result in environmental impacts that could be less than, similar to, or greater than those associated with the ACP.

Several existing, high-pressure, high-volume natural gas pipeline systems provide transportation services to delivery points in the Mid-Atlantic and southeast regions. These include Transco; Columbia Gas Transmission, LLC (Columbia); and East Tennessee Natural Gas, LLC. Additionally, several new pipeline projects have been proposed to provide natural gas transportation service in the same regions, including the Spectra Energy Carolina Pipeline Project; Mountain Valley, LLC Mountain Valley Pipeline Project; and Transco Appalachian Connector Pipeline Project. Significant modifications to each of these systems would be necessary to access the same supply areas and/or provide transportation service to the same customers or at the same delivery points as the ACP. The environmental impacts associated with the upgrades and new pipeline construction modifying existing or proposed systems would likely be equal to or greater than those of the ACP. Therefore, the theoretical modifications to the existing systems or proposed systems would provide no environmental advantage over the ACP. For this reason, and the fact that the existing system does not meet the ACP's purpose and need, these system alternatives are not considered viable alternative to ACP.

12.5 AVOIDANCE AND MINIMIZATION

Atlantic's analysis of route alternatives and variations used a geographic information system (GIS) to characterize crossings of environmental features and other constraints along the routes. A digital centerline for each route alternative and the corresponding segment of the baseline was compared with a variety of datasets and map resources in the GIS. Features and constraints considered in the analysis included length, public lands crossed, roads crossed, conservation easements crossed, forested lands crossed (based on the National Land Cover Database), wetlands crossed (based on the NWI), waterbodies crossed (based on the National Hydrography Dataset), and known cultural resources sites crossed, such as Civil War battlefields.

Once a baseline route was determined using desktop data, a field oriented routing team consisting of a lead construction router, civil survey staff, and an ecological specialist teamed to adjust the route based on site-specific conditions while weighing competing constraints associated with environmental, tribal, and historical resource protection, constructability, available technology, and logistical constraints. Where practicable, adjustments to the route were made to avoid and/or minimize impacts to wetlands and waterbodies.

As a result of desktop analyses and field surveys, Atlantic identified a number of route alternatives and variations along the proposed pipeline routes to avoid or minimize crossings of sensitive environmental features or to address engineering or other issues. Additional route alternatives or variations may be considered to address issues identified as a result of ongoing environmental and civil field surveys, engineering design work, agency consultations, landowner communications, or other stakeholder input.

In response to letters and consultations with the U.S. Forest Service (USFS) and FERC data requests, Atlantic identified and evaluated an alternative along the AP-1 mainline that reduced impacts to USFS lands. This new route, called GWNF 6, avoids the specific areas such as Cheat and Back Allegheny Mountains, Shenandoah Mountain, and other areas specifically requested by FERC and the USFS to be avoided.

The route alternative, which starts at approximate MP 47.5 of the AP-1 mainline and extends into Virginia to approximate MP 115.2, resulted in a significant change to the route in West Virginia as compared to the original route submitted to the West Virginia Department of Environmental Protection in September 2015. However, by locating the GWNF 6 route south of the originally proposed route, much of the impacts to USFS lands are avoided or reduced. In addition, the route would avoid crossing Shenandoah Mountain, and would therefore avoid sensitive Cow Knob salamander habitats located in high elevation areas along Shenandoah Mountain. In addition, GWNF 6 also avoids all designated and potential wilderness areas, national recreation areas, and recommended wilderness study areas within USFS lands. Within the Monongahela National Forest, the GWNF 6 would avoid big-eared bat habitat, northern flying squirrel habitat, known Cheat Mountain salamander habitat, and crossings of designated recreational sites. Therefore, the GWNF 6 route alternative was adopted as the proposed route through the eastern majority of the route in West Virginia.

In addition to the large route alternative, Atlantic has evaluated numerous route variations and minor route adjustments to optimize the baseline route as a result of ongoing routing, biological, cultural resources, and civil field surveys. The primary criterion for comparing route variations to the baseline route was cumulative impact avoidance relative to the objective of the route variation. The route adjustments were adopted without a formal alternatives analysis, but the need for the adjustment was intuitive and practical (e.g., a slight shift in the centerline to avoid a wetland). Individually, the refinements to the routes are small, but collectively they reduce impacts on environmental resources. Table 8 lists the route alternatives, route variations, and minor route adjustments to date that have been incorporated into the proposed ACP pipeline route within West Virginia and a brief rationale for each adjustment.

After all of the routing constraint analysis and avoidance measures described above, Atlantic also continued to optimize the route at a localized scale to further minimize impacts on wetlands and waterbodies where feasible.

Appendix A includes detailed route maps that illustrate how Atlantic has also minimized impacts to wetlands and waterbodies by reducing workspace at wetland crossings and in the vicinity of wetlands and waterbodies, where feasible. In addition, to avoid impacts to wetlands along the periphery of the construction workspace, modifications to workspace have been incorporated into the project design to minimize impacts to wetlands and waterbodies.

ACP is a FERC regulated pipeline project and subject to certain procedures to avoid and minimize impacts to wetland and waterbody crossings to satisfy FERC's own National Environmental Policy Act (NEPA) requirements that also include minimization of environmental impacts. These procedures are outlined in the Plan and Procedures and are applicable to all FERC regulated pipelines.

Despite Atlantic's efforts to avoid and minimize impacts, there will be impacts that cannot be avoided. These impacts will be offset with compensatory mitigation, discussed in section 15.0.

TABLE 8

Select Route Adjustments Incorporated into the Proposed Atlantic Coast Pipeline Route in West Virginia

Route Adjustment	Approximate Mileposts	State	Rationale
AP-1 MAINLINE			
Hollick Run	7.4 to 8.4	WV	Adjustment to decrease the length of the pipeline and provide better alignment for a river crossing
Wymer Run	9.5 to 9.8	WV	Adjustment to avoid a wetland and a cultural resource site
Life's Run	13.3 to 14.7	WV	Adjustment to reduce crossings of a known mussel stream
Hackers Creek	14.7 to 20.1	WV	Avoid crossing Hackers Creek, avoid impacts to federally listed mussel species
Laurel Lick Road	18.4 to 18.8	WV	Adjustment to reduce tree clearing and reduce side slope construction
Buckhannon Run Road	19.2 to 20.1	WV	Adjustment to avoid a cultural resource site and to reduce tree clearing
Left Fork of French Creek Road	30.3 to 30.9	WV	Adjustment to reduce tree clearing
Queens Road	39.0 to 40.1	WV	Adjustment to avoid a wetland
Long Run M&R Approach	47.1 to 47.4	WV	Adjustment to improve the approach into the Long Run M&R station
GWNF 6 route adjustments	47.5 to 57.0	WV	Adjustments to improve constructability, reduce tree clearing, and reduce side-slope crossings
Thornwood Road	76.3 to 77.2	WV	Adjustment to optimize crossing angle of East Fork Greenbrier River

13.0 WETLANDS DELINEATION

Wetlands were delineated in accordance with the *1987 Corps of Engineers Wetlands Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0) or the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Atlantic and Gulf Coastal Plain Region* (Version 2.0)), as appropriate. Observations of vegetation, hydrology, and soils were recorded, and photographs were taken at each wetland. Wetland and waterbody delineations for the ACP were conducted using a definition of "waters of the U.S." that is consistent with, and at least as stringent as, the final *Clean Water Rule: Definition of "Waters of the United States,"* 80 Federal Register 37054 (June 29, 2015). Atlantic will obtain preliminary jurisdictional determinations from the USACE for these delineations. The wetland and waterbody delineation report and supporting datasheets are included in Appendix B. The report documents the methods and results of field surveys completed to inventory wetlands and waterbodies crossed by the ACP. Where field surveys were not able to be completed, due to lack of access to properties, a desktop assessment was completed to delineate wetlands and waterbodies using a combination of NWI data, USGS topographic maps, SSURGO data, and high resolution aerial photography. These features are identified under the "Desktop /Provisional Features" portion of the table and comprise approximately 3.5 percent of wetlands included herein.

14.0 STREAM RESTORATION PLAN

Atlantic will implement the FERC Plan and Procedures as well as a project-specific *Restoration and Rehabilitation Plan*, attached as Appendix E. The *Restoration and Rehabilitation Plan* addresses erosion control measures, soil restoration, soil compaction, topsoil segregation, replacement, and conditioning, and recontouring. The streambed profile will be restored to pre-existing contours and grade conditions to prevent scouring. The stream banks will then be restored as near as practicable to pre-existing conditions and stabilized. Stabilization measures could include seeding, tree planting, installation of erosion control blankets, or installation of riprap materials, as appropriate. Temporary erosion controls will be installed immediately following bank restoration. The waterbody crossing area will be inspected and maintained until restoration of vegetation is complete.

Vegetative clearing, grading for construction, and soil compaction by heavy equipment near stream banks could promote erosion of the banks and the transport of sediment into waterbodies by stormwater runoff. To minimize these potential impacts, Atlantic will install equipment bridges, mats, and pads, as necessary. Additionally, Atlantic will locate ATWS at least 50 feet from the water's edge (with the exception of site-specific modifications requested by Atlantic and approved by FERC or where adjacent upland areas consist of cultivated or rotated cropland or other disturbed land). Temporary sediment barriers will be installed around disturbed areas as outlined in the Plan and Procedures. Upon completion of construction, Atlantic will install permanent erosion control measures at stream crossing locations to provide long-term protection of water quality according to the Plan and Procedures and all permit requirements.

In-stream construction will typically be completed within 24 to 48 hours at each stream crossing where waterbodies are less than 100 feet in width. After the pipeline is installed across a waterbody using one of the methods described above, the trench will be backfilled with native material excavated from the trench. The streambed profile will be restored to pre-existing contours and grade conditions to prevent scouring. The stream banks will then be restored as near as practicable to pre-existing conditions and stabilized. Stabilization measures could include seeding, tree planting, installation of erosion control blankets, or installation of riprap materials, as appropriate. Temporary erosion controls will be installed immediately following bank restoration. The waterbody crossing area will be inspected and maintained until restoration of vegetation is complete.

Once construction is complete, the pipeline will be buried below the ground surface and, therefore, will not impact water retention or floodplain storage within riparian corridors. Atlantic is routing the proposed pipelines to avoid sharp angle crossings or crossing streams where high stream energy could result in bank erosion. Atlantic will implement measures outlined in the Procedures to minimize impacts on the waterbodies crossed, including the installation of trench plugs to prevent water from flowing along the trenchline during and after construction. These measures will minimize potential impacts on surface and below ground hydrology. All waterbody crossings will be in accordance with the requirements identified in the federal or state waterbody crossing permits obtained for the Projects.

15.0 MITIGATION/COMPENSATION AGREEMENT

Atlantic will compensate for the conversion of forested and scrub-shrub wetlands along the ACP right-of-way and permanent losses of wetlands and/or waterbodies resulting from access roads through the purchase of commercially available mitigation credits from an agency-approved mitigation bank as a first option. In-kind mitigation bank credits will be purchased from mitigation banks servicing the areas (HUC 8 watershed, or approved service area) where the conversion/loss occurs. In the event that a conversion/loss occurs in a service area where mitigation bank credits are not available, Atlantic will seek authorization to purchase credits from outside the service area of the next nearest mitigation bank and/or participate in an agency-approved In-Lieu-Fee program, where credits or opportunities are available. Atlantic is working closely with the USACE to evaluate mitigation bank credit availability and working to address mitigation as required by the USACE under the Clean Water Act, Section 404 Nationwide Permit Program verification for the ACP.

16.0 REFERENCES

Cowardin, L.M., V. Carter, F.C. Golet, E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online. Available online at: http://www.npwrc.usgs.gov/resource/wetlands/classwet/. Accessed October 2014.

Peterson, James. 2015. Phone Communication with West Virginia Department of Environmental Protection, Water and Waste Management Section. Communication on April 7, 2015.

U.S. Energy Information Administration. 2014. Virginia State Profile and Energy Estimates. U.S. Department of Energy, Washington, District of Columbia. Available online at http://www.eia.gov/state/?sid=VA. Accessed June 2015.

U.S. Energy Information Administration. 2015. Annual Energy Outlook 2015 with Projections to 2040. U.S. Department of Energy, Washington, District of Columbia.

West Virginia Code of State Regulations. 2014. Title 47 Legislative Rule: Series 2, Requirements Governing Water Quality Standards. Available online at: http://www.dep.wv.gov/WWE/Programs/wqs/Documents/Rule%20Approved%20Letter%20and%20Rule%20Itself%202014/WVDEP_WQS_2014TriReview_FinalRule47CSR2_June_2014.pdf. Accessed November 2014.

ATLANTIC COAST PIPELINE, LLC
ATLANTIC COAST PIPELINE

INDIVIDUAL WATER QUALITY STATE 401 CERTIFICATION SUPPLEMENTAL INFORMATION

Appendix A
Figures

Appendix A
Figures Set 3

1:12,000 Scale 7.5-Minute USGS Topographic Maps

Appendix A
Figures Set 4

1:6000 Scale Aerial Photograph Maps

Appendix A
Figures Set 5

1:24,000 Scale Aerial Photograph Maps of Access Roads

ATLANTIC COAST PIPELINE, LLC
ATLANTIC COAST PIPELINE

INDIVIDUAL WATER QUALITY STATE 401 CERTIFICATION SUPPLEMENTAL INFORMATION

Appendix B
Wetland and Waterbody Delineation Report

ATLANTIC COAST PIPELINE, LLC
ATLANTIC COAST PIPELINE

INDIVIDUAL WATER QUALITY STATE 401 CERTIFICATION SUPPLEMENTAL INFORMATION

Appendix C
West Fork River and Greenbrier River, Site Specific Drawings (Section 10 Navigable Water)

ATLANTIC COAST PIPELINE, LLC
ATLANTIC COAST PIPELINE

INDIVIDUAL WATER QUALITY STATE 401 CERTIFICATION SUPPLEMENTAL INFORMATION

Appendix D
Spill Prevention, Control and Countermeasures Plan (SPCC Plan)

ATLANTIC COAST PIPELINE, LLC
ATLANTIC COAST PIPELINE

INDIVIDUAL WATER QUALITY STATE 401 CERTIFICATION SUPPLEMENTAL INFORMATION

Appendix E
Restoration and Rehabilitation Plan

ATLANTIC COAST PIPELINE, LLC
ATLANTIC COAST PIPELINE

INDIVIDUAL WATER QUALITY STATE 401 CERTIFICATION SUPPLEMENTAL INFORMATION

Appendix F
Typical Construction Design Drawings

ATLANTIC COAST PIPELINE, LLC
ATLANTIC COAST PIPELINE

INDIVIDUAL WATER QUALITY STATE 401 CERTIFICATION SUPPLEMENTAL INFORMATION

Appendix G
Compressor Station 1 Grading Design