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**DOCKET NO. D-2015-018-1**

**DELAWARE RIVER BASIN COMMISSION**

**Sunoco Pipeline L.P.  
Pennsylvania Pipeline Project**

**Natural Gas Liquids Pipeline**

**South Heidelberg, Spring, Cumru, Brecknock New Morgan and Robeson Townships, Berks County, Pennsylvania; Elverson Borough, West Nantmeal, East Nantmeal, Wallace, Upper Uwchlan, Uwchlan, West Whiteland, East Whiteland, West Goshen, East Goshen and Westtown Townships, Chester County, Pennsylvania; and Thornbury, Edgemont, Middletown, Aston, Brookhaven, Chester and Upper Chichester Townships, Delaware County, Pennsylvania**

**PROCEEDINGS**

This docket is issued in response to an application submitted to the Delaware River Basin Commission (DRBC or Commission) by STV Energy Services, Inc. on behalf of Sunoco Pipeline L.P. (“SPLP” or “docket holder”) on September 2, 2015 (“the Application”), for the approval of a natural gas liquid (NGL) pipeline project referred to as the “Pennsylvania Pipeline Project.” The pipeline is designed to operate at pressures greater than 150 psi and crosses streams in the basin and crosses a recreation area listed in the Commission’s Comprehensive Plan and therefore meets regulatory thresholds that subject the project to Commission review. Federal, State and County regulatory approvals pending include: a permit for waterway and wetland crossings from the United States Army Corps of Engineers (USACE); Water Obstruction and Encroachment Permits from the Pennsylvania Department of Environmental Protection (PADEP); and Pennsylvania Erosion and Sediment Control General Permits from the PADEP, covering construction and post-construction activities in Berks, Chester and Delaware counties, Pennsylvania.

The Application was reviewed for approval under Section 3.8 of the *Delaware River Basin Compact*. The Berks County Planning Commission, Chester County Planning Commission and the Delaware County Planning Department have been notified of pending action on this docket. A public hearing on this project was held by the DRBC on November 10, 2015.

## A. DESCRIPTION

**1. Purpose.** The purpose of this docket is to approve the construction of the Delaware River Basin portion of the docket holder's Pennsylvania Pipeline Project, including: one (1) 20-inch diameter NGL pipeline and one 16-inch diameter NGL pipeline constructed parallel to one another within a single 49.8-mile long right-of-way (ROW); one (1) 2.3 mile long, up to 20-inch diameter lateral pipeline; and nine (9) above ground facilities. The project, taken together with existing SPLP pipeline systems, will provide natural gas liquid (NGL) transportation of up to 700,000 barrels per day total, including the existing and proposed pipelines from the Utica and Marcellus Shale formations for both domestic and foreign markets. The two pipelines will be constructed parallel to one another within a 49.8 mile long, 75-foot wide construction (50-foot permanent) ROW, approximately two thirds of which is located within the docket holder's existing Mariner East pipeline system ROW. The new 2.3 mile long lateral pipeline will be constructed within a new 75-foot wide construction (50-foot wide permanent) ROW. The docket also constitutes a special use permit in accordance with Section 6.3.4 of the Commission's Flood Plain Regulations.

**2. Location.** A 20-inch diameter pipeline would be installed primarily within SPLP's existing 50-foot-wide ROW from Houston, Washington County to SPLP's existing Twin Oaks Station in Upper Chichester Township, Delaware County, Pennsylvania (306 miles) where the pipeline will tie into existing aboveground infrastructure carrying the product to SPLP's Marcus Hook Facility in Marcus Hook Borough, Delaware County, Pennsylvania. A second, 16-inch diameter pipeline, will also be concurrently installed from SPLP's Delmont Station, Westmoreland County, Pennsylvania to the SPLPs Twin Oaks Station (approximately 255 miles), paralleling the above 20-inch pipeline within the same ROW. Approximately 49.8 miles of the ROW for these two pipelines is located in the Delaware River Basin.

The pipelines ROW in the Delaware River Basin is located in South Heidelberg, Spring, Cumru, Brecknock and New Morgan Townships in Berks County, Pennsylvania, Elverson Borough and West Nantmeal, East Nantmeal, Wallace, Upper Uwchlan, Uwchlan, West Whiteland, West Goshen, East Goshen and Westtown Townships in Chester County, Pennsylvania and Thornbury, Edgemont, Middletown, Aston, Brookhaven, Chester and Upper Chichester Townships in Delaware County, Pennsylvania. An access road for the project is also located in Robeson Township, Berks County, Pennsylvania.

In addition, the project includes the installation of a 2.3 mile long, up to 20-inch diameter lateral pipeline within a new 50-foot wide ROW that will connect the proposed mainline pipelines to SPLP's existing pipeline infrastructure located in East Whiteland, Chester County, Pennsylvania.

The project also includes new above ground facilities including tie-ins, block valves, and emergency flow restricting devices (EFRD). These above ground facilities are located along the pipeline ROW in Spring and Cumru Townships, Berks County, Wallace, Upper Uwchlan, West Whiteland and West Goshen Townships, Chester County and Edgemont, Middletown and Upper Chichester Townships, Delaware County, Pennsylvania.

The Project ROW and aboveground facilities are located in the Delaware River Basin drainage areas of the Schuylkill River, Brandywine-Christina River and the Lower Delaware River. A listing of the Hydrologic Unit Code (HUC) 12 watersheds traversed by the pipeline ROW is as follows:

WATERSHEDS CROSSED BY THE PROJECT	
DRAINAGE AREA	HUC 12 WATERSHED
Schuylkill River	Cacoosing Creek
	Wyomissing Creek
	Green Hills Lake - Allegheny Creek
	Hay Creek
	Lower French Creek
Brandywine – Christina	Little Valley Creek - Valley Creek
	Marsh Creek
	Upper East Branch Brandywine Creek
Lower Delaware	Valley Creek
	East Branch Chester Creek
	Ridley Creek
	Chester Creek
	Repaupo Creek - Delaware River

A listing of the individual stream crossings within the Delaware River Basin are included in an attachment to this docket.

3. **Area Served.** The proposed pipelines will provide transportation service of NGLs (e.g., propane, butane and ethane) from the Utica and Marcellus Shale formations for both domestic and foreign markets. NGL’s will be transported via the parallel pipelines to the docket holder’s existing port facility. In addition the project will provide along its route in Pennsylvania various exit points for the supply of propane supplies to local Pennsylvania distributors for use as heating and or cooking fuel by consumers in Pennsylvania and neighboring states. For the purpose of defining Area Served, the Application is incorporated herein by reference consistent with conditions contained in the DECISION section of this docket.

4. **Physical features.**

a. **Design criteria.** The proposed Project consists of a number of components that are necessary to ensure proper and safe operation of a pipeline, and to satisfy SPLP’s objective of providing NGLs to Pennsylvania communities and to an in-demand market that can be served from a distribution center located in Marcus Hook.

The project, taken together with existing SPLP pipeline systems, will provide NGL transportation service of up to 700,000 barrels per day total, including the existing and proposed pipelines with maximum operating pressures (MOPs) of 1,480 pounds per square inch gauge (psig). The pipeline facilities were designed and will be maintained in accordance with U.S. Department of Transportation (DOT) regulations and industry standards. The proposed Project are designed, and will be constructed, operated, and maintained in accordance with DOT federal safety standards, 49 CFR Part 195. The regulations are intended to ensure adequate protection for the public from hazardous liquids pipeline failures. Part 195 Sub Part C specifies material selection and qualification, design requirements, protection from internal, external, and atmospheric corrosion. In addition, SPLP will implement and/or adhere to the following safety practices: 1) SPLP will perform regular leak detection surveys in accordance with DOT regulations, 2) SPLP's cathodic protection system is inspected at regular intervals to ensure proper operating conditions consistent with DOT requirements for corrosion mitigation, 3) New above ground facilities will be fenced with required signs posted and existing facilities will remain securely fenced to prevent unauthorized access, 4) Any potential hazards will be minimized by emergency shutdown and flow restriction in any necessary section of pipeline, 5) Under DOT regulations provided in 49 CFR. §195.402(E), SPLP will establish an Emergency Plan that provides written procedures to minimize hazards from a pipeline emergency, 6) SPLP has a Computational Pipeline Monitoring (CPM) leak detection system in place as required by 49 CFR 195.134, and 7) SPLP has safety brochures and public awareness and community outreach programs to inform and educate the public, emergency responders, affected municipalities, school districts, businesses, residents, appropriate government organizations, and persons about their operations and to enlist their assistance in reducing the potential for emergency situations.

Approximately two thirds of the length of the pipeline ROW in the Delaware River Basin will be located within the docket holder's existing Mariner East pipeline system ROW that is currently used for the transportation of NGLs. The docket holder indicated that deviations from the original pipeline ROW were required at 7 areas due to changes in land use since the construction of the original pipeline. These deviations from the docket holder's existing ROW in the Basin total approximately 15.5 miles.

Construction of the new pipelines will typically require a 75-foot-wide construction ROW consisting of a 50-foot-wide post-construction, permanently maintained ROW and 25 feet of temporary workspace to facilitate installation of the pipelines. Additional temporary workspace areas of varying size are proposed in certain areas to support additional excavation, soil storage, or equipment workspace needs (e.g., road/railroad crossings, areas with steep slopes or side hills, certain stream/wetland crossings, crossovers of existing utilities, etc.). The 25 feet of temporary workspace and all additional temporary workspace areas would be restored and allowed to revert back to its pre-construction condition.

The construction ROW will be reduced to 50 feet when crossing sensitive areas including streams and wetlands to reduce the overall project impacts. In addition, SPLP has modified their construction methods to further reduce environmental impacts; specifically, a number of areas will be horizontal directionally drilled (HDD) (See listing attached to this docket) to minimize

impacts. Any proposed change from HDD to an alternative crossing method (i.e. to a wet or dry crossing) must be approved in writing by the Executive Director (See Condition C.I.f).

**b. Facilities.** The facilities included within the Delaware River Basin consist of two new NGL pipelines (20- and 16-inches in diameter), installed parallel to one another in an approximate 49.8 mile 50-foot wide permanent ROW. Approximately 15.3 miles of the pipeline ROW is located in Berks County, 23.1 miles in Chester County and 11.4 miles in Delaware County, Pennsylvania. The project also includes an approximate 2.3 mile long, up to 20-inch diameter pipeline lateral that will connect the mainline in West Whiteland Township to existing pipeline infrastructure located in East Whiteland Township, Chester County, Pennsylvania. The locations of the pipelines are shown on site plan drawings submitted as part of the Application.

The project also includes several new facilities and modifications to existing aboveground facilities as noted in the following table.

<b>Above ground Facilities (Sunoco Pipeline, L.P. – Pennsylvania Pipeline Project)</b>			
<b>Facility Name</b>	<b>TYPE</b>	<b>DESCRIPTION</b>	<b>MUNICIPALITY</b>
Montello Valve and Tie-in	Tie-in / Block Valve	Co-located with existing station	Spring Township, Berks County
Wyomissing	Block Valve	New	Cumru Township, Berks County
Fairview Road	EFRD	New	Wallace Township, Chester County
Eagle Station	EFRD	Co-located with existing station	Upper Uwchlan Township, Chester County
Exton Junction Valve	Block Valve	New	West Whiteland Township, Chester County
Boot Road	EFRD	New	West Goshen Township, Chester County
Slitting Mill Road	EFRD	New	Edgemont Township, Delaware County
West Baltimore Pike Road	EFRD	New	Middletown Township, Delaware County
Twin Oaks Station	Meters/Valves	Co-located with existing station	Upper Chichester Township, Delaware County

Typically, new block valve stations and Emergency Flow Restricting Device (EFRD) sites are 60 feet by 90 feet and will consist of a gravel pad/area with a chain-link fence installed for public safety. Pump station modifications depend on site conditions and the land area required to install the new equipment but typically require 4 to 8 acres of additional land.

**c. Water Withdrawals and Discharges.** This project will require water for dust control, pipeline cleaning, horizontal directional drilling and hydrostatic testing of the pipeline and mainline valves. All water for these activities within the Delaware River Basin will be sourced from existing DRBC docketed water withdrawal sources. The docket holder is not approved to

withdraw water from surface sources within the Delaware River Basin for this project. The docket holder estimates a total of approximately 1.115 million gallons of water will be needed for the hydrostatic testing of the pipeline within the Delaware River Basin and approximately 1.393 million gallons of water will be needed for the HDD sections in the Delaware River Basin.

The existing DRBC docketed water withdrawal sources have not been identified at this time. Condition C.I.c. in the Decision section of this docket requires that the docket holder submit the list of DRBC docketed water withdrawal sources to the Commission at least 14 days prior to the initial purchase of water. The docket holder shall not withdrawal, purchase, or receive any water from any sources until they notify us and receive written approval from the DRBC Executive Director.

All water used for hydrostatic testing of the pipeline and mainline valves within the Delaware River Basin will be discharged to the Delaware County Regional Water Quality Control Authority, most recently approved by DRBC Docket No. D-1992-018 CP-2 on September 21, 2011 via existing Sunoco facilities at Marcus Hook, Delaware County, Pennsylvania. The docket holder shall not convey wastewater from the hydrostatic testing of the pipeline to any wastewater treatment facility other than the Delaware County Regional Water Quality Control Authority (DRBC Docket No. D-1992-018 CP-2), until they notify the Executive Director in writing and receive written approval from the DRBC Executive Director

**d. Cost.** Due to the confidential nature of certain aspects of this project, SPLP did not disclose the costs for the project. The docket holder paid a project review fee of \$75,000 in accordance with the Commission's fee schedule set forth in Resolution No. 2009-2, adopted May 6, 2009.

## **B. FINDINGS**

The purpose of this docket is to approve the construction of the Delaware River Basin portion of the docket holder's Pennsylvania Pipeline Project, including: one (1) 20-inch diameter NGL pipeline and one 16-inch diameter NGL pipeline constructed parallel to one another within a single 49.8-mile long right-of-way (ROW); one (1) 2.3 mile long, up to 20-inch diameter lateral pipeline; and nine (9) above ground facilities. The project, taken together with existing SPLP pipeline systems, will provide natural gas liquid (NGL) transportation of up to 700,000 barrels per day total, including the existing and proposed pipelines from the Utica and Marcellus Shale formations for both domestic and foreign markets. The two pipelines will be constructed parallel to one another within a 49.8 mile long, 75-foot wide construction (50-foot permanent) ROW, the majority of which is located within the docket holder's existing Mariner East pipeline system ROW. The new 2.3 mile long lateral pipeline will be constructed within a new 75-foot wide construction (50-foot wide permanent) ROW. The docket also constitutes a special use permit in accordance with Section 6.3.4 of the Commission's Flood Plain Regulations.

Sunoco Pipeline, L.P. will construct, restore, and maintain the Pennsylvania Pipeline Project according to the measures described in its project-specific Erosion and Sediment Control Plan (E&S Plan) and Spill Prevention, Control, and Countermeasures Plan (SPCC Plan). These

plans are currently being reviewed by the Berks, Chester, and Delaware County Conservation Districts and PADEP. PADEP will provide the authorization for coverage under PADEP's Erosion and Sediment Control General Permit 2 (ESCGP-2). Sunoco submitted its ESCGP-2 application for coverage in the three counties to PADEP in August 2015.

Final E&S Plans and Restoration Plans will be submitted to the Commission and all State, County and Federal Permits prior to any site clearing or construction.

### **Project Land and Wetland Disturbance**

Erosion and Sediment Control Plan approval and ESCGP-2 approvals from the Berks, Chester and Delaware County Conservation Districts and PADEP are pending. Construction of the project will affect a total of approximately 410 acres (161 acres in Berks County, 166 acres in Chester County and 83 acres in Delaware County, Pennsylvania). This total includes the permanent pipeline ROW, temporary pipeline construction workspace, above ground facilities and access roads. The disturbance acreage does not include off-site support sites, which are described below. Following construction of the pipeline, a total of approximately 205 acres of the 410 acres of affected land area will be retained as permanent ROW along the Pennsylvania Pipeline Project. The remaining 205 acres of temporary work areas and access roads will be allowed to revert, or be restored to, pre-construction conditions. Pre-existing forested areas in the temporary workspace will be allowed to recover through a natural regrowth of trees.

Access to the Project area will primarily be limited to existing non-public roads, driveways, and farm lanes that will require either no improvements or just minor improvements. Permanent access roads to new valve settings, typically 12 feet wide, will be required. Additional support sites, such as pipe/contractor yards will be necessary during the construction of the project. The number of and specific location of off-site support sites have not been determined and will be selected by the pipeline contractor. The support sites typically range from 5 to 15 acres in size and will be sited on previously disturbed areas. Following construction, temporary roads and work areas will be allowed to revert, or be restored to, pre-construction conditions. Pre-existing forested areas in the temporary workspace will be allowed to recover through a natural regrowth of trees.

The Rules of Practice and Procedure (RPP) require Commission review for projects that “involve a significant disturbance of ground cover affecting water resources”. In determining whether a “significant disturbance” would occur, the DRBC Project Review staff is guided by two other land disturbance thresholds established by RPP section 2.3.5 A: those that, respectively, exclude from review projects involving “[a] change in land cover on major ground water infiltration areas when the amount of land that would be altered is less than three square miles” (RPP § 2.3.5 A.6); and projects that involve “[d]raining, filling or otherwise altering marshes or wetlands when the area affected is less than 25 acres” (RPP § 2.3.5 A.15). In our view, these thresholds indicate the general magnitude of disturbance that the Commission decided warrants basin-wide review. The project’s total limit of disturbance area in the Delaware River Basin is approximately 0.64 square miles, which does not exceed the 3 square mile threshold. Additionally, the alteration of wetland associated with the project does not exceed 25 acres as discussed in the following paragraphs.

A total of 66 wetlands totaling approximately 7.00 acres are located within the project's permanent and temporary construction ROW. The docket holder has proposed to cross 19 of these wetlands by utilizing an HDD or bore crossing method. Any proposed change from an HDD to an alternative crossing method requires the written approval of the Executive Director prior to initiating construction of the alternative (see Condition C.I.f.) The wetland areas include approximately 6.74 acres of palustrine emergent (PEM), 0.06 acres of Palustrine Scrub/Shrub (PSS), 0.18 acres of palustrine forested (PFO) wetlands and 0.02 acres of Palustrine Unconsolidated Bottom (PuB). Three (3) forested wetlands, Wetland BB42 in Berks County and Wetlands H15 and Q75 in Chester County will have a 0.052 acre permanent conversion of forested cover type to emergent wetland cover type. All other wetland impacts will be allowed to revert to their pre-construction vegetative successional stage or be planted to their original cover type.

SPLP will implement wetland crossing procedures and wetland protection measures outlined in the Project's Erosion and Sedimentation Control Plan's BMPs. Erosion and sedimentation controls will be installed and maintained in accordance with Pennsylvania's Erosion and Sediment Control Regulations and PADEP's Erosion and Sediment Control Best Management Practice (BMP) Manual, as well as consideration of the Federal Energy Regulatory Commission's (FERC's) erosion and sedimentation control measures, to minimize impacts on wetlands. SPLP will limit the construction ROW width to 50 feet in wetlands and will implement a number of HDDs to avoid impacts as much as possible to EV and forested wetland areas. Disturbance will be further minimized by restricting equipment access in sensitive wetlands to machinery needed for actual pipeline installation, and by limiting the number of crossings. SPLP will implement erosion and sediment control measures to prevent soils disturbed by construction activities from leaving the construction area and entering wetlands. This will include implementing spill prevention and response procedures to avoid impacts from refueling of equipment and fuel storage within the vicinity of wetlands. Erosion control techniques, including installation of silt fences, slope breakers, trench plugs, rip-rapping, terracing, netting, restoration, and revegetation will be used in upland areas to restrict sediment runoff into adjacent wetlands.

Following construction, preconstruction wetland conditions in the ROW will be restored to the extent possible to promote revegetation by natural succession. In addition, wetland contours will be restored and wetlands will be allowed to revert to naturally indigenous vegetation. Restoration seeding will consist of temporary/annual herbaceous vegetation (annual rye grass) to quickly stabilize the soils, while allowing the indigenous vegetation to naturally reestablish itself over time in the wetland. To minimize the temporary loss of trees and shrubs in forested and scrub-shrub wetland areas located in the temporary construction ROW, SPLP will replant all temporarily impacted scrub-shrub in the permanent right-of-way and temporary workspaces. The scrub-shrub wetland areas will be planted with tree/shrub species consisting of two- to three-foot whip sized individuals in a variety of facultative wetland species. Forested wetland areas located in the temporary right-of-way will be planted with containerized tree (approximately 1-inch diameter at breast height) species native to the area and commonly found in the local wetlands.

SPLP's restoration planting program will be conducted after all major pipeline construction activities have been completed and the workspace has been restored to pre-existing contours and soil morphology. Monitoring of these planted wetland areas will occur as part of SPLP's annual wetland monitoring program and will be in accordance with PADEP and USACE permit conditions regarding monitoring.

### **Relationship to Reservoirs, Proposed Reservoirs or Recreation Project Areas**

The project crosses under the Marsh Creek State Park which is a recreation project area designated in the Commission's Comprehensive Plan. Approximately 0.09 miles of the pipeline ROW is located within the northernmost portion of the state park boundary north of the Pennsylvania Turnpike in Upper Uwchlan Township, Chester County Pennsylvania. Marsh Creek State Park is administered by the Pennsylvania Department of Conservation and Natural Resources (PADCNR). The entire length of pipeline within the boundary of Marsh Creek State Park will be installed using HDD thereby avoiding surface impacts to one wetland and two unnamed tributaries to Marsh Creek present in the park crossing area. The pipeline does not cross under the Marsh Creek Reservoir. The docket holder is currently obtaining the required license agreement from PADCNR for the ROW in the Marsh Creek State Park.

### **Stream Crossings**

PADEP Water Obstruction and Encroachment Permits and USACE wetland and waterway crossings (Section 404) Permits are pending. The project will cross or run adjacent to a total of 170 streams and/or floodways of nearby streams in the Delaware River Basin (48 in Berks County, 65 in Chester County and 57 in Delaware County, Pennsylvania disturbing a total of 18.929 acres of floodway (6.65 acres of temporary disturbance and 12.279 acres of permanent floodway disturbance). A total of 68 of the 170 stream/floodway crossings listed above will be completed using HDD or bore methods which would not result in stream or floodway disturbance above the boreholes. Any proposed change from an HDD to an alternative crossing method requires the written approval of the Executive Director prior to initiating construction of the alternative (see Condition C.I.f.). At 36 other locations, the stream is adjacent to the work area and only its floodway extends into the construction workspace. At one other additional location the work will involve a temporary equipment bridge off of the pipeline ROW. The project will cross the remaining 65 streams using a dry crossing method and result in approximately 0.83 acres of direct stream disturbance, which is based on the area of the streams within the 50-foot-wide workspace.

The application submitted by the docket holder assumed the floodway to extend 50 feet from each bank if not previously mapped. Permanent disturbances are those areas affected by a water obstruction or encroachment that consist of both direct and indirect impacts that result from the placement or construction of a water obstruction or encroachment and include areas necessary for the operation and maintenance of the water obstruction or encroachment located in, along or across, or projecting into the floodway and include the area within the permanent ROW. Permanent impacts include HDD crossings that are calculated based on the width of the bore (3 feet) multiplied by the length of crossing. Temporary disturbances are those areas affected during the construction of a water obstruction or encroachment that consists of both direct and indirect impacts located in, along or across, or projecting into a watercourse, floodway or body

of water that are restored upon completion of construction such as additional temporary workspaces and temporary access roads.

Of the 170 streams and/or floodways that the pipelines will cross or run adjacent to 64 of the streams are perennial, 44 streams are intermittent and 62 streams are classified as ephemeral. A total of 12 of the stream crossings are designated by the PADEP as High Quality-Cold Water Fishery (HQ-CWF), 17 of the streams have a designated use as Exceptional Value (EV), 40 of the streams have a designated use as High Quality-Trout Stocked Fishery (HQ-TSF), 12 of the streams have a designated use as Warm Water Fishery (WWF), 44 streams have a designated use as Cold Water Fishery (CWF) and 45 are designated as Trout Stocked Fishery. Additionally, a total of 13 streams are designated as Approved Trout Waters, which designates waters that contain sufficient portions that are open to public fishing and are stocked with trout by PAFBC, 24 are designated as Trout Natural Reproduction, 9 are designated as Approved Trout Waters and Trout Natural Reproduction, 9 are designated as Approved Trout Waters, Class A, and Trout Natural Reproduction, 1 stream is designated as Class A and Approved Trout Waters and 53 are designated as Stocked Trout Streams and Approved Trout Waters, which designates waters that contain sufficient portions that are open to public fishing and are stocked with trout by PAFBC.

SPLP will construct stream crossings in accordance with all PADEP and USACE restrictions and conditions set forth with the authorizations received in regards to Chapter 105 and Chapter 102 acknowledgments and authorizations. Erosion and sedimentation controls will be installed and maintained in accordance with Pennsylvania's Erosion and Sediment Control Regulations and PADEP's Erosion and Sediment Control Best Management Practice (BMP) Manual, as well as consideration of the FERC's erosion and sedimentation control measures, to minimize impacts on waterbodies. These controls, procedures, and BMPs are emulated within the Project's Erosion and Sedimentation Control Plan, which will receive PADEP and County Conservation Department review and approvals.

All streams flowing at the time of construction will be crossed using a dry stream crossing method, HDD or bored. Open cut crossing is only permitted during times when no stream flow or runoff exists. For open-cut crossings, a backhoe, clam dredge, dragline, or similar equipment will be used for trench excavation.

Dry crossing methods include the Flume Crossing Method and Dam and Pump method. A flumed crossing involves collecting and directing the stream flow through a culvert or flume across the trench line work area. A dam and pump crossing involves construction of a dam on the upstream end of the trench work area, from which a pump and pipe or hose are used to convey stream flow around the work area and discharge the water downstream of the work area. This allows for the trenching, pipe installation, and initial restoration to occur in dry conditions, while maintaining continuous downstream flow. Once in place, the flumes are not removed until the pipeline has been installed and the streambed and banks have been restored. The dam and pump method requires the intake to be screened to avoid entrainment of fish, ensuring that the pumps used are sufficient to handle the flow, back-up pumps are onsite in the event of malfunctions and pump operation is monitored throughout their use to prevent streambed scour

at the discharge point and ensure proper operation. SPLP will generally complete in-stream work in minor waterbodies (less than 10 feet wide) within 24 hours, and in intermediate waterbodies (10 to 30 feet wide) within 48 hours.

HDD and conventional borings are types of trenchless crossing methods. For HDD crossings, a specialized drill rig is used to advance an angled borehole below the stream to be crossed and, using a telemetry guidance system, the borehole is “steered” beneath the stream and then back to the ground surface. The hole is then reamed to a size adequate for the pipe to pass through, and the pipeline is then pulled back through the bore hole. SPLP has developed a HDD Inadvertent Return Contingency Plan that outlines the pre-construction and construction procedures for reducing the risk of inadvertent returns of drilling lubricant, as well as the procedures for inspecting, reporting, containing, and restoring discovered returns. A conventional bored crossing requires the excavation of bore pits on each side of the stream being crossed. Drilling equipment is used to install a horizontal bore hole from one bore pit to the other beneath the stream. The pipeline is then pulled through the bore hole. HDD and conventional bored methods involve no work within or direct impact to the streambed or stream banks.

Drilling fluids used in HDD pipeline installation consists of water and bentonite and PADEP-approved additives. Drilling fluid returns collected at the entry and exit points are stored in a steel tank and processed through a solids control system which removes spoil from the drilling fluid, allowing the fluid to be recycled. The excess spoil and drilling fluid are transported to, and disposed of, at a state-approved and permitted solid waste landfill.

To limit the time required for construction of a stream crossing, the ROW will be prepared on either side of the stream prior to initiating the actual crossing. Stream crossings will be perpendicular to the flow, to the extent practical. If necessary, the pipe used for stream crossings and in floodplains will be weighted to prevent flotation. After the pipe is lowered into the trench, previously excavated material will be returned to the trench line for backfill. Trench plugs will be installed within the trench on both sides of the stream channel. Stream flow will be maintained at all waterbody crossings, and no alteration of the stream's capacity will occur as a result of pipeline construction. Stock piling of soil will be a minimum of 10 feet from top of stream bank and stream bed material will be segregated and restored upon backfilling. Spoil, debris, sandbags, flume pipes, construction materials, and any other obstructions resulting from or used during construction of the pipeline will be removed to prevent interference with normal water flow and use. Any excavated material not used as backfill will be disposed of in a manner and at locations satisfactory to the agencies having jurisdiction. All stream banks and beds will be restored to original grade and the original stream bed material will be segregated and restored in accordance with the Project's Erosion and Sedimentation Control Plan. Following grading, all stream banks will be restored and reseeded to prevent subsequent erosion, in accordance with permit requirements. No stream relocations or permanent channel modifications are proposed.

Other impact minimization/mitigation measures for streams include the installation of temporary and permanent erosion controls, the control and monitoring of trench dewatering activities to prevent silt-laden water from entering streams and wetlands, the use of properly

constructed equipment bridges to travel across each stream, and restrictions on refueling near streams and wetlands.

**Floodplain Regulations**

Section 6.3.4 of the Commission’s Floodplain Regulations allows certain uses, including pipelines constructed within the floodway when authorized by special permit. As previously discussed, the project will cross a total of 170 waterbodies and or the floodways of nearby streams as delineated by the docket holder. A total of 68 of the 170 stream/floodway crossings will be completed using HDD or bore methods which would not result in stream disturbance above the boreholes. Additionally, at 36 of the 170 stream crossing locations no in-stream work will be required because the stream is adjacent to the work area and only its floodway (assumed or otherwise) extends into the construction workspace. The project will require in-stream construction activities (dry crossing method) at a total of 65 stream crossing areas. Each of these dry crossing locations will also require a temporary equipment bridge crossing.

The project pipeline will cross 23 FEMA-mapped 100-year floodplains and four mapped floodways. All aboveground facilities are located outside of wetlands, streams, and the FEMA mapped floodway.

The Project will not permanently alter, modify, or obstruct any watercourses. Temporary equipment, such as dams, flumes and equipment bridges will be located in the floodway during construction of the pipeline. However, the construction within floodways will be expedited and the equipment will be removed as soon as the pipeline has been installed through the stream channel. SPLP plans to install the pipelines at dry crossing areas at a minimum depth of 3 feet below each stream channel and no permanent aboveground facilities are proposed on the ground surface within a FEMA floodway. Additionally, the pipeline sections beneath the stream channels will be weighted as necessary to negate any potential buoyancy effects. Following the construction of the pipelines, the stream channel bed and banks are required to be restored to preconstruction contours, vegetation and hydrology. No spoil or fill material will remain in the floodway following construction of the pipeline. This docket constitutes a special use permit for the pipeline in accordance with Section 6.3.4 of the Commission’s Flood Plain Regulations for a pipeline within floodway and flood fringe areas. A list of the streams and floodways crossed by the pipeline project is attached to this docket.

**Other Federal, State, and Local Permits/Approvals**

The following table lists approvals related to water resources in the Delaware River Basin for the SPLP Project.

<b>AGENCY</b>	<b>PERMIT</b>	<b>PERMIT NO.</b>	<b>DATE OF APPROVAL</b>
USACE	Joint Application for Section 404 Permit	Pending	Pending
PADEP	Joint Application for Chapter 105 Water Obstruction and Encroachment Permit	Pending	Pending

PADEP	ESCGP-2	Pending	Pending
Berks County Conservation District	Erosion and Sediment Control Plan Review-Berks County portion	Pending	Pending
Chester County Conservation District	Erosion and Sediment Control Plan Review – Chester County Portion	Pending	Pending
Delaware County Conservation District	Erosion and Sediment Control Plan Review- Delaware County Portion	Pending	Pending
PADCNR	Marsh Creek ROW License Agreement	Pending	Pending

**Docket Approval Duration**

Commission approval of the project, including the special permit within floodway areas will remain in effect for the life of the project. Therefore, the docket has no expiration date.

**Other**

The project is designed to conform to the requirements of the *Water Code* and *Water Quality Regulations* of the DRBC.

The project does not conflict with the Comprehensive Plan and is designed to prevent substantial adverse impact on the water resources related environment, while sustaining the current and future water uses and development of the water resources of the Basin.

**C. DECISION**

I. Effective on the approval date for Docket No. D-2015-018-1, the project and appurtenant facilities as described in Section A. (Physical features) are approved pursuant to Section 3.8 of the *Compact*, subject to the following conditions:

a. Docket approval is subject to all conditions, requirements, and limitations imposed by the PADEP, PADCNR, County Conservation Districts and the USACE, and such conditions, requirements, and limitations are incorporated herein, unless they are less stringent than the Commission’s.

b. Sound practices of excavation, backfill and reseedling shall be followed to minimize erosion and deposition of sediment in streams from any new facilities or repair related construction. The docket holder shall submit to DRBC the final erosion and sediment control and restoration permits issued by State, County and Federal agencies.

c. The docket holder shall submit the name, address, and contact information for the public water supplier that will serve the hydrostatic testing of the pipeline and HDD activities in writing to the Executive Director at least 14 days prior to the purchase or use of water for said purpose. The docket holder shall not, withdrawal, purchase or receive any water from any sources until they notify us and receive written approval from the DRBC Executive Director.

d. The docket holder shall not convey wastewater from the hydrostatic testing of the pipeline to any wastewater treatment facility other than the Delaware County Regional Water Quality Control Authority Docket No. D-1992-018 CP-2, until they notify the Executive Director in writing and receive written approval from the DRBC Executive Director.

e. With the exception of bentonite and water and PADEP-approved additives, no other additives shall be used in the HDD process. Used drilling mud and solids from the drilling process shall be disposed of at a State-approved disposal facility.

f. Any proposed change from an HDD to an alternative crossing method requires the written approval of the Executive Director prior to initiating construction of the alternative.

g. Within 30 days of completion of construction of the approved project, the docket holder is to submit to the attention of the Project Review Section of DRBC a Construction Completion Statement (“Statement”) signed by the docket holder’s professional engineer for the project. The Statement must (a) either confirm that construction has been completed in a manner consistent with any and all DRBC-approved plans or explain how the as-built project deviates from such plans; (b) report the project’s final construction cost as such cost is defined by the project review fee schedule in effect at the time application was made; and (c) indicate the date on which the project was (or is to be) placed in operation.

h. This approval of the construction of facilities described in this docket shall expire three years from date below unless prior thereto the docket holder has commenced operation of the subject project or has provided the Executive Director with written notification that is has expended substantial funds (in relation to the cost of the project) in reliance upon this docket approval.

i. The docket holder shall report to the Commission Project Review Section Supervisor any violation of the docket conditions within 48-hours of the occurrence or upon the docket holder becoming aware of the violation. In addition, the docket holder shall report in writing any violations of the pass by requirements, the instantaneous or total allocation, the approved operations plan or any other docket conditions to the Commission Project Review Section Supervisor within three days of the violation. The docket holder shall also provide a written explanation of the causes of the violation within 30 days of the violation and shall set forth the action(s) the docket holder has taken to correct the violation and protect against a future violation.

j. This docket constitutes a special use permit under Section 6.3.4 of the Commission's Flood Plain Regulations for a pipeline within floodway and flood fringe areas.

k. Nothing herein shall be construed to exempt the docket holder from obtaining all necessary permits and/or approvals from other State, Federal or local government agencies having jurisdiction over this project.

l. The Executive Director may modify or suspend this approval or any condition thereof, or require mitigating measures pending additional review, if in the Executive Director's judgment such modification or suspension is required to protect the water resources of the Basin.

m. The issuance of this docket approval shall not create any private or proprietary rights in the water of the Basin, and the Commission reserves the rights to amend, alter or rescind any actions taken hereunder in order to insure the proper control, use and management of the water resources of the Basin.

n. Any person who objects to a docket decision by the Commission may request a hearing in accordance with Article 6 of the *Rules of Practice and Procedure*. In accordance with Section 15.1(p) of the Delaware River Basin Compact, cases and controversies arising under the Compact are reviewable in the United States district courts.

**BY THE COMMISSION**

**APPROVAL DATE:           ng**

Stream and Floodway Crossings Sunoco Pipeline, LP DRBC Docket No. D-2015-018-1					
Stream ID	Stream Name	Flow Regime	Bank Width (feet)	Crossing Method	Ch. 93 Designated Use
<b>BERKS COUNTY</b>					
S-B22	Cacoosing Creek	Perennial	18	Dry Crossing <sup>(1)</sup>	CWF
S-B27	UNT to Allegheny Creek	Intermittent	6	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-B28	UNT to Allegheny Creek	Perennial	10	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-B29	Allegheny Creek	Perennial	15	Dry Crossing <sup>(1)</sup>	CWF
S-B30	UNT to Allegheny Creek	Intermittent	3	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-B31	UNT to Wyomissing Creek	Perennial	9	Dry Crossing <sup>(1)</sup>	Drains to HQ-CWF
S-B32	UNT to Wyomissing Creek	Perennial	10	Dry Crossing <sup>(1)</sup>	HQ-CWF
S-B33	UNT to Wyomissing Creek	Intermittent	8	Dry Crossing <sup>(1)</sup>	HQ-CWF
S-B43	UNT to Cacoosing Creek	Intermittent	9	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-B45	UNT to Cacoosing Creek	Ephemeral	8	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-B46	UNT to Cacoosing Creek	Perennial	10	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-K76	UNT to Cacoosing Creek	Intermittent	7	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-K77	UNT to Cacoosing Creek	Intermittent	10	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-B47	UNT to Cacoosing Creek	Ephemeral	5	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-B49	UNT to Cacoosing Creek	Intermittent	2	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-B50	Cacoosing Creek	Perennial	25	Dry Crossing <sup>(1)</sup>	CWF
S-C1	UNT to Allegheny Creek	Intermittent	3	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-C2	UNT to Allegheny Creek	Intermittent	5	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-C7	UNT to Allegheny Creek	Perennial	4	Dry Crossing <sup>(1)</sup>	CWF
S-C30	UNT to Cacoosing Creek	Perennial	8	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-C31	UNT to Cacoosing Creek	Perennial	3	Dry Crossing <sup>(1)</sup>	CWF
S-C32	UNT to Cacoosing Creek	Ephemeral	2	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-C33	UNT to Cacoosing Creek	Perennial	15	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-C101	UNT to Allegheny Creek	Perennial	4	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-C102	UNT to Allegheny Creek	Intermittent	4	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-H13	Hay Creek	Perennial	8	Dry Crossing <sup>(1)</sup>	EV
S-H16	UNT to Hay Creek	Ephemeral	2	Dry Crossing <sup>(1)</sup>	Drains to EV
S-H17	UNT to Hay Creek	Perennial	12	Dry Crossing <sup>(1)</sup>	Drains to EV
S-H18	UNT to Hay Creek	Perennial	10	Dry Crossing <sup>(1)</sup>	EV
S-Q90	UNT to Hay Creek	Perennial	20	Dry Crossing <sup>(1)</sup>	Drains to EV
S-B40	UNT to Wyomissing Creek	Intermittent	10	HDD <sup>(2)</sup>	Drains to HQ-CWF
S-B41	UNT to Wyomissing Creek	Ephemeral	3	HDD <sup>(2)</sup>	Drains to HQ-CWF
S-C8	UNT to Wyomissing Creek	Perennial	3	HDD <sup>(1)</sup>	Drains to HQ-CWF
S-C11	Wyomissing Creek	Perennial	7	HDD <sup>(1)</sup>	HQ-CWF
S-C12	UNT to Wyomissing Creek	Ephemeral	2	HDD <sup>(2)</sup>	HQ-CWF
S-Q89	UNT to Hay Creek	Perennial	9	Bore <sup>(1)</sup>	Drains to EV
S-BB34	Wyomissing Creek	Perennial	15	Temporary Bridge <sup>(1)</sup>	HQ-CWF
S-B21	UNT to Cacoosing Creek	Ephemeral	5	Open Cut Floodway <sup>(2)</sup>	Drains to CWF
S-B23	UNT to Cacoosing Creek	Intermittent	5	Open Cut Floodway <sup>(2)</sup>	Drains to CWF
S-B24	UNT to Cacoosing Creek	Ephemeral	3	Open Cut Floodway <sup>(2)</sup>	Drains to CWF
S-B25	UNT to Cacoosing Creek	Ephemeral	3	Open Cut Floodway <sup>(2)</sup>	Drains to CWF
S-B48	UNT to Cacoosing Creek	Ephemeral	3	Open Cut Floodway <sup>(2)</sup>	Drains to CWF
S-C109	UNT to Allegheny Creek	Intermittent	6	Open Cut Floodway <sup>(2)</sup>	Drains to CWF
S-C29	UNT to Cacoosing Creek	Ephemeral	1	Open Cut Floodway <sup>(2)</sup>	Drains to CWF
S-H12	UNT to Hay Creek	Intermittent	2	Open Cut Floodway <sup>(2)</sup>	Drains to EV
S-H14	UNT to Hay Creek	Intermittent	4	Open Cut Floodway <sup>(2)</sup>	Drains to EV

Stream and Floodway Crossings Sunoco Pipeline, LP DRBC Docket No. D-2015-018-1					
Stream ID	Stream Name	Flow Regime	Bank Width (feet)	Crossing Method	Ch. 93 Designated Use
S-H15	UNT to Hay Creek	Ephemeral	3	Open Cut Floodway <sup>(2)</sup>	Drains to EV
S-H19	UNT to Hay Creek	Intermittent	2	Open Cut Floodway <sup>(2)</sup>	Drains to EV
CHESTER COUNTY					
S-A70	UNT to Marsh Creek	Ephemeral	Attachment	Dry Crossing <sup>(1)</sup>	Drains to HQ-TSF
S-A71	Marsh Creek	Perennial	8	Dry Crossing <sup>(1)</sup>	HQ-TSF
S-B14	South Branch French Creek	Perennial	11	Dry Crossing <sup>(1)</sup>	EV
S-B15	UNT to Marsh Creek	Perennial	6	Dry Crossing <sup>(1)</sup>	HQ-TSF
S-B18	UNT to Marsh Creek	Perennial	5	Dry Crossing <sup>(1)</sup>	Drains to HQ-TSF
S-B19	UNT to Marsh Creek	Intermittent	2	Dry Crossing <sup>(1)</sup>	Drains to HQ-TSF
S-BB29	UNT to Valley Creek	Ephemeral	6	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-BB30	UNT to Valley Creek	Perennial	10	Dry Crossing <sup>(1)</sup>	CWF
S-C56	UNT to S. Branch French Ck	Perennial	6	Dry Crossing <sup>(1)</sup>	Drains to EV
S-C58	UNT to S. Branch French Ck	Perennial	4	Dry Crossing <sup>(1)</sup>	Drains to EV
S-C61	UNT to Valley Creek	Perennial	9	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-C66	UNT to Valley Creek	Ephemeral	4	Dry Crossing <sup>(1)</sup>	Drains to CWF
S-C72	UNT to Black Horse Creek	Perennial	4	Dry Crossing <sup>(1)</sup>	Drains to HQ-TSF
S-C93	UNT to Marsh Creek	Intermittent	2.5	Dry Crossing <sup>(1)</sup>	Drains to HQ-TSF
S-C94	UNT to Marsh Creek	Ephemeral	2	Dry Crossing <sup>(1)</sup>	Drains to HQ-TSF
S-C96	UNT to Marsh Creek	Perennial	6	Dry Crossing <sup>(1)</sup>	HQ-TSF
S-H9	UNT to Marsh Creek	Perennial	8	Dry Crossing <sup>(1)</sup>	Drains to HQ-TSF
S-H52	Marsh Creek	Perennial	20	Dry Crossing <sup>(1)</sup>	HQ-TSF
S-Q61	UNT to Ridley Creek	Ephemeral	3	Dry Crossing <sup>(1)</sup>	Drains to HQ-TSF
S-B34	UNT to Chester Creek	Intermittent	2	HDD <sup>(2)</sup>	Drains to TSF
S-B35	UNT to Chester Creek	Ephemeral	3	HDD <sup>(1)</sup>	Drains to TSF
S-B79	UNT to Valley Creek	Perennial	7	HDD <sup>(1)</sup>	CWF
S-B80	UNT to Valley Creek	Ephemeral	3	HDD <sup>(2)</sup>	Drains to CWF
S-B81	Valley Creek	Perennial	12	HDD <sup>(1)</sup>	CWF
S-BB26	UNT to Valley Creek	Ephemeral	10	HDD <sup>(2)</sup>	Drains to CWF
S-BB27	UNT to Valley Creek	Intermittent	5	HDD <sup>(1)</sup>	Drains to CWF
S-BB28	UNT to Valley Creek	Perennial	12	HDD <sup>(1)</sup>	CWF
S-C59	UNT to Valley Creek	Perennial	8	HDD <sup>(1)</sup>	CWF
S-C60	UNT to Valley Creek	Ephemeral	9	HDD <sup>(1)</sup>	Drains to CWF
S-C63	UNT to Valley Creek	Perennial	8	HDD <sup>(1)</sup>	Drains to CWF
S-C64	UNT to Valley Creek	Perennial	5	HDD <sup>(1)</sup>	CWF
S-C67	UNT to Shamona Creek	Intermittent	1.5	HDD <sup>(1)</sup>	Drains to HQ-TSF
S-C68	UNT to Shamona Creek	Intermittent	3	HDD <sup>(1)</sup>	Drains to HQ-TSF
S-C87	UNT to Marsh Creek	Perennial	10	HDD <sup>(1)</sup>	HQ-TSF
S-C88	UNT to Marsh Creek	Ephemeral	3	HDD <sup>(2)</sup>	Drains to HQ-TSF
S-C89	UNT to Marsh Creek	Ephemeral	4	HDD <sup>(1)</sup>	Drains to HQ-TSF
S-C90	UNT to Marsh Creek	Ephemeral	3	HDD <sup>(1)</sup>	Drains to HQ-TSF
S-C91	UNT to Marsh Creek	Intermittent	4	HDD <sup>(1)</sup>	Drains to HQ-TSF
S-C92	UNT to Marsh Creek	Ephemeral	2.5	HDD <sup>(1)</sup>	Drains to HQ-TSF
S-H1	UNT to Shamona Creek	Ephemeral	2	HDD <sup>(2)</sup>	Drains to HQ-TSF
S-H2	UNT to Shamona Creek	Ephemeral	3	HDD <sup>(2)</sup>	Drains to HQ-TSF
S-H3	UNT to Shamona Creek	Perennial	10	HDD <sup>(1)</sup>	Drains to HQ-TSF
S-H4	UNT to Shamona Creek	Ephemeral	1	HDD <sup>(1)</sup>	Drains to HQ-TSF

Stream and Floodway Crossings Sunoco Pipeline, LP DRBC Docket No. D-2015-018-1					
Stream ID	Stream Name	Flow Regime	Bank Width (feet)	Crossing Method	Ch. 93 Designated Use
S-H5	Shamona Creek	Perennial	12	HDD <sup>(1)</sup>	HQ-TSF
S-H10	UNT to Marsh Creek	Intermittent	3	HDD <sup>(1)</sup>	Drains to HQ-TSF
S-H11	UNT to Marsh Creek	Intermittent	1.5	HDD <sup>(2)</sup>	Drains to HQ-TSF
S-H30	Chester Creek	Perennial	10	HDD <sup>(1)</sup>	TSF
S-Q83	UNT to Marsh Creek	Perennial	5	HDD <sup>(1)</sup>	HQ-TSF
S-Q84	UNT to Marsh Creek	Intermittent	2	HDD <sup>(2)</sup>	HQ-TSF
S-Q85	UNT to Marsh Creek	Intermittent	5	HDD <sup>(2)</sup>	Drains to HQ-TSF
S-Q86	UNT to Marsh Creek	Ephemeral	7	HDD <sup>(1)</sup>	Drains to HQ-TSF
S-Q87	Black Marsh Creek	Ephemeral	6	HDD <sup>(2)</sup> / Open Cut Floodway <sup>(2)</sup>	Drains to HQ-TSF
S-Q88	Black Marsh Creek	Perennial	25	HDD <sup>(1)</sup> / Open Cut Floodway <sup>(2)</sup>	HQ-TSF
S-A66	UNT to S. Branch French Ck	Ephemeral	3	Open Cut Floodway <sup>(2)</sup>	Drains to EV
S-A68	UNT to S. Branch French Ck	Ephemeral	3	Open Cut Floodway <sup>(2)</sup>	Drains to EV
S-B20	UNT to Marsh Creek	Intermittent	2.5	Open Cut Floodway <sup>(2)</sup>	Drains to HQ-TSF
S-C57	UNT to S. Branch French Ck	Ephemeral	3	Open Cut Floodway <sup>(2)</sup>	Drains to EV
S-CC23	UNT to S. Branch French Ck	Perennial	6	Open Cut Floodway <sup>(2)</sup>	Drains to EV
S-C62	UNT to Valley Creek	Intermittent	6	Open Cut Floodway <sup>(2)</sup>	Drains to CWF
S-C95	UNT to Marsh Creek	Perennial	5	Open Cut Floodway <sup>(2)</sup>	Drains to HQ-TSF
S-C97	UNT to Marsh Creek	Perennial	4	Open Cut Floodway <sup>(2)</sup>	Drains to HQ-TSF
S-C98	UNT to Marsh Creek	Intermittent	3	Open Cut Floodway <sup>(2)</sup>	Drains to HQ-TSF
S-Q81	UNT to Marsh Creek	Intermittent	5	Open Cut Floodway <sup>(2)</sup>	Drains to HQ-TSF
S-Q200	UNT to Marsh Creek	Intermittent	4	Open Cut Floodway <sup>(2)</sup>	Drains to HQ-TSF
S-Q82	UNT to Marsh Creek	Unknown	-	Open Cut Floodway <sup>(2)</sup>	Drains to HQ-TSF
DELAWARE COUNTY					
S-B36	UNT to Chester Creek	Ephemeral	4	Dry Crossing <sup>(1)</sup>	Drains to TSF
S-B37	UNT to Chester Creek	Ephemeral	6	Dry Crossing <sup>(1)</sup>	Drains to TSF
S-B38	UNT to Chester Creek	Perennial	10	Dry Crossing <sup>(1)</sup>	Drains to TSF
S-C15	UNT to Chester Creek	Ephemeral	2	Dry Crossing <sup>(1)</sup>	Drains to TSF
S-C16	UNT to Chester Creek	Perennial	8	Dry Crossing <sup>(1)</sup>	Drains to TSF
S-C43	UNT to Chester Creek	Ephemeral	1	Dry Crossing <sup>(1)</sup>	Drains to TSF
S-C44	Rocky Run	Perennial	20	Dry Crossing <sup>(1)</sup>	HQ-CWF
S-H27	UNT to Crum Run	Perennial	12	Dry Crossing <sup>(1)</sup>	Drains to TSF
S-H28	Crum Run	Perennial	15	Dry Crossing <sup>(1)</sup>	TSF
S-H29	Chrome Run	Perennial	18	Dry Crossing <sup>(1)</sup>	TSF
S-H34	UNT to Chester Creek	Intermittent	8	Dry Crossing <sup>(1)</sup>	Drains to TSF
S-H35	UNT to Chester Creek	Perennial	7	Dry Crossing <sup>(1)</sup>	TSF
S-H36	UNT to Chester Creek	Intermittent	3	Dry Crossing <sup>(1)</sup>	Drains to TSF
S-I2	UNT to Chester Creek	Perennial	7	Dry Crossing <sup>(1)</sup>	TSF
S-I5	UNT to Chester Creek	Intermittent	6	Dry Crossing <sup>(1)</sup>	Drains to TSF
S-I6	UNT to Chester Creek	Ephemeral	5	Dry Crossing <sup>(1)</sup>	Drains to TSF
S-B51	UNT to Chester Creek	Ephemeral	1	HDD <sup>(2)</sup> / Open Cut Floodway <sup>(2)</sup>	Drains to TSF
S-B52	UNT to Chester Creek	Intermittent	1.5	HDD <sup>(1)</sup> / Open Cut Floodway <sup>(2)</sup>	Drains to TSF
S-B53	UNT to Chester Creek	Intermittent	2	HDD <sup>(1)</sup> / Open Cut Floodway <sup>(2)</sup>	Drains to TSF
S-B54	UNT to Chester Creek	Perennial	2	HDD <sup>(1)</sup> / Open Cut Floodway <sup>(2)</sup>	Drains to TSF
S-B55	UNT to Chester Creek	Ephemeral	2	HDD <sup>(1)</sup> / Open Cut Floodway <sup>(2)</sup>	Drains to TSF
S-C23	UNT to Chester Creek	Perennial	10	HDD <sup>(1)</sup> / Clearing Only <sup>(2)</sup>	Drains to TSF
S-C24	UNT to Chester Creek	Ephemeral	2	HDD <sup>(1)</sup> / Clearing Only <sup>(2)</sup>	Drains to TSF
S-C25	UNT to Chester Creek	Ephemeral	1	HDD <sup>(1)</sup> / Clearing Only <sup>(2)</sup>	Drains to TSF

Stream and Floodway Crossings Sunoco Pipeline, LP DRBC Docket No. D-2015-018-1					
Stream ID	Stream Name	Flow Regime	Bank Width (feet)	Crossing Method	Ch. 93 Designated Use
S-C26	UNT to Rocky Run	Ephemeral	4	HDD <sup>(1)</sup>	Drains to HQ-CWF
S-C39	UNT to Chester Creek	Ephemeral	2	HDD <sup>(2)</sup>	Drains to TSF
S-C40	UNT to Chester Creek	Intermittent	3	HDD <sup>(1)</sup>	Drains to TSF
S-C41	UNT to Chester Creek	Ephemeral	2.5	HDD <sup>(2)</sup>	Drains to TSF
S-C42	UNT to Chester Creek	Intermittent	5	HDD <sup>(1)</sup>	Drains to TSF
S-H37	Chester Creek	Perennial	100	HDD <sup>(1)</sup>	TSF
S-H38	UNT to Chester Creek	Intermittent	8	HDD <sup>(2)</sup>	Drains to TSF
S-H39	UNT to Chester Creek	Ephemeral	8	HDD <sup>(1)</sup>	Drains to TSF
S-H40	UNT to Chester Creek	Ephemeral	5.5	HDD <sup>(1)</sup>	Drains to WWF
S-H41	Chester Creek	Perennial	100	HDD <sup>(1)</sup>	WWF
S-H42	UNT to Chester Creek	Ephemeral	6	HDD <sup>(2)</sup>	Drains to WWF
S-H43	Baldwin Run	Perennial	20	HDD <sup>(1)</sup>	WWF
S-H44	UNT to Baldwin Run	Ephemeral	4	HDD <sup>(1)</sup>	Drains to WWF
S-H45	UNT to Baldwin Run	Intermittent	6	HDD <sup>(2)</sup>	Drains to WWF
S-H46	UNT to Baldwin Run	Ephemeral	3	HDD <sup>(2)</sup>	WWF
S-I1	UNT to Chester Creek	Ephemeral	2	HDD <sup>(2)</sup> / Open Cut Floodway <sup>(2)</sup>	Drains to TSF
S-I17	UNT to Baldwin Run	Ephemeral	1	HDD <sup>(2)</sup>	Drains to WWF
S-I18	UNT to Baldwin Run	Ephemeral	3	HDD <sup>(1)</sup>	Drains to WWF
S-I19	UNT to Baldwin Run	Perennial	5	HDD <sup>(2)</sup>	Drains to WWF
S-I20	UNT to Baldwin Run	Ephemeral	3	HDD <sup>(2)</sup>	Drains to WWF
S-B39	UNT to Chester Creek	Ephemeral	2	Open Cut Floodway <sup>(2)</sup>	Drains to TSF
S-B56	UNT to Chester Creek	Intermittent	4	Open Cut Floodway <sup>(2)</sup>	Drains to TSF
S-B57	UNT to Chester Creek	Ephemeral	1	Open Cut Floodway <sup>(2)</sup>	Drains to TSF
S-C17	UNT to Chester Creek	Perennial	16	Open Cut Floodway <sup>(2)</sup>	Drains to TSF
S-C18	UNT to Chester Creek	Perennial	7	Open Cut Floodway <sup>(2)</sup>	Drains to TSF
S-C19	UNT to Chester Creek	Ephemeral	9	Open Cut Floodway <sup>(2)</sup>	Drains to TSF
S-C20	UNT to Chester Creek	Ephemeral	2	Open Cut Floodway <sup>(2)</sup>	Drains to TSF
S-C21	UNT to Chester Creek	Ephemeral	3	Open Cut Floodway <sup>(2)</sup>	Drains to TSF
S-C22	UNT to Chester Creek	Intermittent	7	Open Cut Floodway <sup>(2)</sup>	Drains to TSF
S-C45	UNT to Rocky Run	Intermittent	5	Open Cut Floodway <sup>(2)</sup>	Drains to HQ-CWF
S-H47	UNT to Chester Creek	Ephemeral	8	Open Cut Floodway <sup>(2)</sup>	Drains to WWF
S-I3	UNT to Chester Creek	Ephemeral	2	Open Cut Floodway <sup>(2)</sup>	Drains to TSF
S-I4	Chester Creek	Perennial	4	Open Cut Floodway <sup>(2)</sup>	TSF

<sup>(1)</sup> Denotes stream crossing

<sup>(2)</sup> Denotes floodway crossing