Supply Header Project

Wetland and Waterbody Survey Report 2

U.S. Army Corps of Engineers – Huntington District

Prepared by:

ERM

January 2017

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ACRONYMS

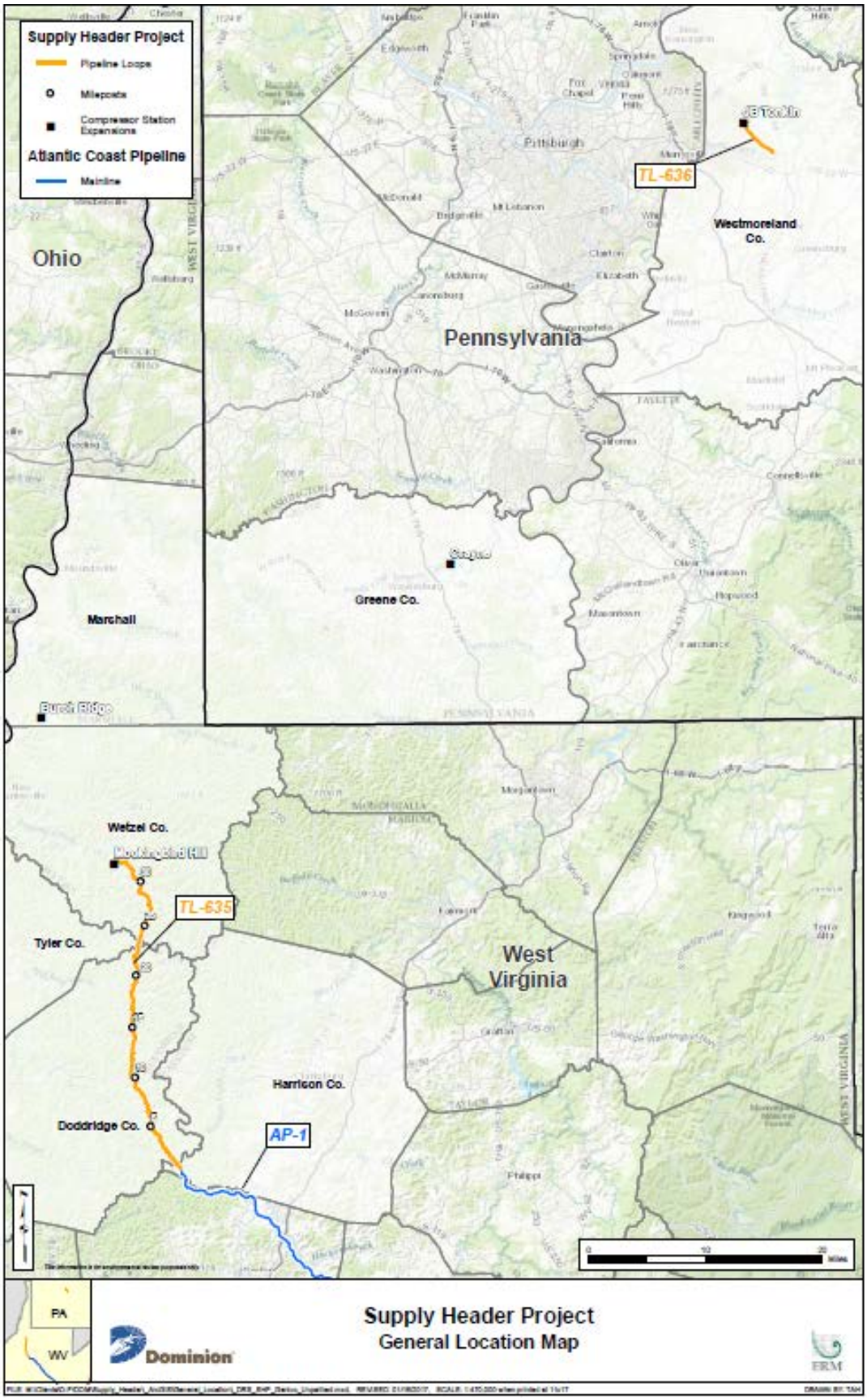
ACP	Atlantic Coast Project
CFR	Code of Federal Regulations
COE	U.S. Army Corps of Engineers
D&D	Duncan & Duncan West, LLC
DTI	Dominion Transmission, Inc.
EPA	Environmental Protection Agency
FAC	Facultative Plants
FACU	Facultative Upland Plants
FACW	Facultative Wetland Plants
GPS	Global Positioning System
NHD	National Hydrography Dataset
NRCS	Natural Resource Conservation Service
NRG	Natural Resource Group, LLC
NWI	National Wetland Inventory
NWPL	National Wetland Plant List
OBL	Obligate Plants
OHWM	Ordinary High Water Mark
PEM	Palustrine System Emergent Wetland Class
PFO	Palustrine System Forested Wetland Class
PSS	Palustrine System Scrub-Shrub Wetland Class
SHP	Supply Header Project
TOB	top of bank
UPL	Uplands Plants
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 INTRODUCTION

Environmental Resources Management (ERM), on behalf of Dominion Transmission, Inc. (DTI), conducted wetland and waterbody surveys for the proposed Supply Header Project (SHP). Surveys were completed by staff from ERM, and contracted staff from Duncan & Duncan WEST, LLC (D&D). This report presents results of the wetland and waterbody field surveys that were completed in West Virginia and Pennsylvania for the SHP. The survey area consists of a 300-foot-wide corridor approximately 37.5 miles long, including 33.6 miles in West Virginia and 3.9 miles in Pennsylvania (Figure 1.0-1). The survey corridor includes areas within the U.S. Army Corps of Engineers (COE) Pittsburgh and Huntington Districts.

Wetland and waterbody surveys were conducted along the proposed mainlines TL-635 and TL-636, the Mockingbird Hill, and JB Tonkin Compressor Stations, and all associated access roads, contractor yards, and impoundment areas. The following counties were surveyed along TL-635 and the Mockingbird Hill Compressor Station: Harrison, Dodge, Tyler, and Wetzel Counties in West Virginia. Westmoreland County in Pennsylvania was surveyed for TL-636 and JB Tonkin Compressor Station. The first series of field surveys were conducted from October 2014 to July 2015. The second series of field surveys were conducted from June 2016 to November 2016, and will continue until the wetland and waterbody surveys are complete on available land parcels along the proposed pipeline routes. This report serves as the first wetland and waterbody report to be submitted to the Federal Energy Regulatory Commission.

This report provides an assessment of wetlands, rivers, streams, open waterbodies (e.g., ponds), and seep points documented within the survey corridor based on qualified wetland biologists' best professional judgment and interpretation of the *U.S. Army Corps of Engineers 1987 Wetlands Delineation Manual* (COE, 1987), *the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)* (COE, 2010), the *COE Regulatory Guidance Letter regarding Ordinary High Water Mark Identification* (COE, 2005), and other applicable COE guidance documents and regulations. The report also documents observations made at "non-water points" where desktop data indicated a wetland or waterbody may be present but upon field inspection requisite wetland parameters or discernable evidence of waterbody morphological characteristics were not present. The wetland and waterbody delineation report included with the 404/401 permit applications includes data specific to the jurisdiction of the permit under review. Appendix C includes U.S. Geological Survey (USGS) 7.5-Minute Topographic maps and aerial photography maps of each wetland and waterbody delineated during field surveys.


Supply Header Project
Pipeline Loops
Mileposts
Compressor Station Expansions
Atlantic Coast Pipeline
Mainline
Ohio
Pennsylvania
West Virginia
TL-636
Westmoreland Co.
Pittsburgh
Greene Co.
Marshall
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TL-635
Tyler Co.
Doddridge Co.
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AP-1
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Supply Header Project
General Location Map
ERM

2.0 METHODS

Prior to conducting field surveys, a review of high resolution aerial photographic resources and other desktop data (e.g., National Wetland Inventory, soils maps, USGS maps) were evaluated to identify potential wetland or waterbody areas that may be present within the survey corridor.

Field surveys for the proposed pipeline were conducted within a 300-foot-wide survey corridor and within a 50-foot-wide survey corridor for proposed access roads. The survey area was evaluated to determine the presence of water features including wetlands, waterbodies (streams and open waterbodies), non-tidal ditches, and seep points. Data were also collected to document a lack of water features where desktop data indicated water features may be present; these are referred to as non-water points.

Accessible tracts within the survey corridor were evaluated to determine the presence or absence of water features, including wetlands, waterbodies (streams and open waterbodies), seep points, and non-water points. Specific naming conventions were followed during field surveys in order to catalog each feature type collected. Tables 2-1 and 2-2 describe the unique naming conventions for these features.

TABLE 2-1

Supply Header Project
Wetland, Waterbody, Seep, and Non-Water Point Feature Naming Protocol

Water Feature Type	Polygon/Line	County	Field Crew Letter	Feature Number	Special Designation
Wetland	w (wetland)	county code	crew letter (e.g., a, b, c)	001, 002, 003, …	f, e, s (PFO, PEM, PSS wetlands)
Waterbody	s (stream) o (open waterbody)	county code	crew letter (e.g., a, b, c)	001, 002, 003, …	p, i, e (change in stream morphology to perennial, intermittent, or ephemeral)
Non-tidal Ditch	d (ditch)	county code	crew letter (e.g., a, b, c)	001, 002, 003, …	Not Applicable
Seep	p (seep)	county code	crew letter (e.g., a, b, c)	001, 002, 003, …	Not Applicable
Non-Water Point	no (non-water)	county code	crew letter (e.g., a, b, c)	001, 002, 003, …	Not Applicable

2.1 DESKTOP REVIEW

Several sources of information were used to complete a “desktop” review of survey areas for potential wetlands and waterbodies prior to conducting field surveys. Biologists utilized high resolution aerial photography, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) data, U.S. Department of Agriculture oil Survey Geographical Database, the USGS National Hydrography Dataset (NHD), and USGS Topographic Maps. The evaluation prior to field survey allowed crews to identify areas of high probability for wetlands or waterbodies in planning and preparation for field survey.

TABLE 2-2

Supply Header Project
Survey Corridor County Codes

Facility Type/State	County	County Code
TL-635		
West Virginia	Harrison	ha
	Doddridge	do
	Tyler	ty
	Wetzel	wz
TL-636		
Pennsylvania	Westmoreland	wm

2.2 FIELD SURVEY

Field surveys were completed between October 2014 and July 2015. A wetland and waterbody report was previously provided to the USACE in September 2015. This report includes the data previously identified along with data recently collected between June 2016 and November 2016. ERM worked along with D&D to support the progress of wetland and waterbody surveys along accessible tracts. Wetland boundaries, waterbody thalweg or banks, data collection points, open waterbody boundaries, seep points, and non-water points were surveyed using a Trimble® 6000 series GeoXH model global positioning system (GPS) unit. The field data collection settings within the GPS units used available satellites to capture location data. Note that while the GPS data collected during survey provides reasonably accurate spatial information regarding the wetlands, open waterbodies, seep points, and non-water points delineated, typically one-meter accuracy with sufficient satellite reception, it does not constitute the same accuracy as a professional land survey.

2.2.1 Wetlands

The delineation of wetlands was conducted using the method described in the 1987 Manual, along with either of the Regional Supplements. The wetland boundaries were delineated using the routine onsite determination method described in the Regional Supplements and utilizing *the National Wetland Plant List: 2014 (NWPL)* (Lichvar et al., 2012; Federal Register, 2012) for determination of plant indicator status, and the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, 1979) to classify wetlands. According to the COE 1987 Wetland Manual, three criteria or parameters are considered during a wetland delineation, and for a plant community to be considered a wetland it must have: a predominance of hydrophytic vegetation, indications of wetland hydrology, and the presence of hydric soils under normal circumstances (i.e., where naturally problematic conditions or disturbances are absent). Wetland data sheets were completed at sample points within each wetland community type (i.e., Cowardin classification) making up the wetland or wetland complex, along with a minimum of one corresponding upland community sample point.

2.2.1.1 Hydrophytic Vegetation

The 1987 Manual and NWPL defines the wetland indicator status of plants as follows:

- Obligate Wetland Plants (OBL): almost always occur in wetlands (estimated probability >99 percent) in wetlands under natural conditions. With few

exceptions, these plants (herbaceous or woody) are found in standing water or seasonally saturated soils (14 or more consecutive days) near the surface. These plants are of four types: submerged, floating, floating-leaved, and emergent.

- Facultative Wetland Plants (FACW): usually occur in wetlands (estimated probability >67 percent to 99 percent), but may occur in non-wetlands. These plants predominantly occur with hydric soils, often in geomorphic settings where water saturates the soils or floods the soil surface at least seasonally.
- Facultative Plants (FAC): occur in wetlands and uplands (estimated probability 33 percent to 99 percent within wetlands). These plants can grow in hydric, mesic, or xeric habitats. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH and elevation. They have a wide tolerance of soil moisture conditions.
- Facultative Upland Plants (FACU): usually occur in uplands, but many occur in wetlands (estimated probability 1 percent to <33 percent in wetlands). These plants predominantly occur on drier or more mesic sites in geomorphic settings where water rarely saturates the soils or floods the soil surface seasonally.
- Upland Plants (UPL): almost never occur in wetlands (estimated probability <1 percent). These plants occupy mesic to xeric upland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.

Dominant vegetation was assessed for each stratum present (tree, sapling/shrub, woody vine, and herbaceous) at a sample point location. In most cases, plant dominance was determined using the COE "50/20 Rule" in which species from each stratum that individually or collectively make up more than 50 percent of the total cover in each stratum, plus any other species that account for at least 20 percent of the total cover in the stratum are determined to be dominant species. The hydrophytic vegetation criterion is met when greater than 50 percent of the dominant plant species are classified as OBL, FACW, or FAC. Vegetation information was recorded on the appropriate COE data forms.

2.2.1.2 Wetland Hydrology

Hydrology is influenced by many variables, including: seasonal and long-term rainfall patterns, local geology, topography, soil type, local water table conditions, and drainage. According to the 1987 Manual and Regional Supplements, wetland hydrology is present if 14 or more consecutive days of inundation or water saturation within 12 inches of the soil surface occurs during the growing season at a minimum frequency of 5 years in 10.

Indicators of wetland hydrology provide evidence that a site has a persistent wetland hydrologic regime. The Regional Supplements both provide a list of hydrology indicators that include primary and secondary indicators, which are grouped as:

- Observation of Surface Water or Saturated Soils
- Evidence of Recent Inundation

- Evidence of Current and Recent Soil Saturation
- Evidence of Other Site Conditions or Data

One primary indicator or two secondary indicators are required to confirm that wetland hydrology is present or occurs at some time during the growing season. Field observations of hydrology were made at each vegetation community sample point. Examples of key indicators observed include presence of water above the ground surface, high water table within the hole dug for soil observations, saturated soil in the upper portion of the soil profile, water-stained leaves, drainage patterns as evidence of water presence, and the geomorphic position of the vegetation community and sample point location. Hydrology information was recorded on the appropriate COE data sheets.

2.2.1.3 Hydric Soils

The 1987 Manual defines hydric soils as soils that are saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper part.

Hydric soils are characterized by specific morphological characteristics developed in the soil profile over time due to reduction of iron, manganese, and sulfur under saturated and anaerobic conditions (U.S. Department of Agriculture [USDA] Natural Resource Conservation Service [NRCS], 2010). The hydric soil indicators described in the Regional Supplements are a subset of hydric soil indicators described in *Field Indicators of Hydric Soils in the United States, Version 7.0 (2010)*. The *Munsell Book of Soil Color Charts (2014)* was utilized to determine soil matrix and mottle colors (redoximorphic features) and record soil profile descriptions. The soils were observed and documented at representative sample point locations in both wetland communities and adjacent upland communities to help establish the wetland boundary. Soil profile descriptions were recorded on the appropriate COE data sheets.

2.2.1.4 Cowardin Classification

The Cowardin Classification was developed in 1979 to classify a variety of wetland habitats. The Cowardin Classification divides wetlands into five systems, including: Marine, Estuarine, Riverine, Lacustrine, and Palustrine. These represent the five major landscape settings. The classification system further divides wetland communities into systems and classes. The 2014 and 2015 surveys were conducted in inland wetlands, and descriptions of the common Cowardin Classification community types are described in the bullets below.

- Palustrine System Emergent Wetland Class (PEM): A PEM wetland is defined as a non-tidal wetland characterized by erect, rooted, hydrophytic herbaceous species. These wetland habitats are often dominated by perennial plants, where the vegetation is present for the majority of the growing season (Cowardin, 1979).
- Palustrine Forested Wetland Class (PFO): A PFO wetland is defined as a non-tidal wetland characterized by dominant woody vegetation that is greater than 20 feet tall, with an understory of small trees and shrubs, as well as an herbaceous layer (Cowardin, 1979).

- Palustrine System Scrub-Shrub Wetland Class (PSS): A PSS wetland is defined as a non-tidal wetland consisting of woody vegetation that is less than 20 feet tall, including shrubs, young trees, and stunted trees or shrubs (Cowardin, 1979).

Each wetland delineated was assigned a Cowardin class. For wetland complexes, or wetlands that are comprised of more than one wetland plant community (i.e., Cowardin class) a sample point was established and observations recorded to document each community. Unique wetland IDs and separate polygons were established based on the wetland community present within the complex. The field crews in 2014, 2015, and 2016 collected wetland information for PEM, PFO, and PSS wetlands.

2.2.2 Waterbodies

Waterbodies documented during field survey were categorized as 1) linear or flowing waterbodies such as streams and rivers, and assigned a unique ID starting with an "s" or 2) non-flowing open waterbodies such as ponds and lakes which were assigned a unique ID starting with an "o". Linear or flowing waterbodies were identified as landscape features with a channel that include a bed and a bank in a concave landscape position where water flow has resulted in a feature that possesses an ordinary high water mark (OHWM). Based on evidence of flow regime at the time of survey linear waterbodies were attributed a flow regime, according to the definitions provided by the COE for the Nationwide Permit Program in Code of Federal Regulations (CFR) 33 Part 330 (Federal Register, 1993). Similarly non-flowing, open waterbody features were assigned a Cowardin hydrology regime based on observations recorded at the time of survey. Definitions of these flow regimes and hydrology regimes are included below.

2.2.2.1 Regime Classification

Water regime classification is defined by its flow duration. The following regime classifications are described below as defined by the CFR 33 Part 330 ruling:

- Perennial Stream: A perennial stream has flowing water year round during a typical year. The water table is located above the stream bed for most of the year, and groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.
- Intermittent Stream: An intermittent stream has flowing water during most times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water, and runoff from rainfall is a supplemental source of water for stream flow.
- Ephemeral Stream: An ephemeral stream has flowing water only during and for a short duration after precipitation events. Ephemeral stream beds are located above the water table year round, therefore, groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Non-flowing or open waterbodies were documented based on the evidence of inundation/saturation at the time of surveys, utilizing one of four categories based on the

USFWS's *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, 1979) including the following:

- Non-flowing: Water covers the land surface throughout the year in all years.
- Semi-Non-flowing: Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface
- Seasonally flooded: Surface water is present for extended periods especially early in the growing season, but is absent by the end of the season in most years. When surface water is absent, the water table is often near the land surface.
- Temporarily flooded: Surface water is present for brief periods during the growing season, but the water table usually lies well below the soil surface for most of the season.

2.2.3 Non-tidal Ditches

Field crews documented ditches that had an OHWM, bed and bank, and/or were connected to waters of the United States. Additionally, the ditches documented by the field review contained one or more of the following characteristics, in accordance with Draft Guidance provided by the Environmental Protection Agency (EPA, 2015):

- Standing or flowing water
- A link to two or more waters of the United States.
- Drain wetlands or waterbodies that can be linked to waters of the United States.
- Excavated within waters of the United States.
- A relocated, channelized, and/or straightened tributary

Ditches that exhibited wetland characteristics were classified as wetlands if they met the criteria specified in the Manual or applicable Regional Supplement.

2.2.4 Seep Points

Seep points are defined as small areas where groundwater saturates the soil surface on steep slopes or along sidehill cuts or banks. Seeps do not meet the definition of either a waterbody, due to lack of OHWM, top of bank (TOB), or a wetland, lacking the three wetland parameters (hydrology, vegetation, soils). One example of where a seep point would likely be found would be a road cut. Seep points were reviewed and documented on a case-by-case basis by wetland biologists. Where seep points were observed a GPS data point was taken along with corresponding photos of the area.

2.2.5 Non-Water Points

Non-water points were collected to document areas mapped as NWI polygons or NHD lines that did not meet the required criteria of wetlands or waterbodies (i.e., upland habitat). Observations were recorded, photographs were taken, and a GPS point was recorded at each non-water point to document that wetland biologists visited the point and determined that a wetland or waterbody was not present. COE wetland delineation forms were used to record information

for non-water points located within NWI wetlands polygons. Documentation of non-water points provides a record to demonstrate that areas mapped as NWI and NHD, or areas with an aerial photography signature indicative of wetland conditions, which from a desktop may be assumed to be aquatic, were visited by wetland biologists and determined to lack the requisite indicators of a wetland or waterbody.

3.0 RESULTS AND FINDINGS

The following sections present the results of water resources survey from October 2014 through June 2016 on the SHP, including wetlands, waterbodies, seep points, and non-water points that were documented on accessible tracts within the SHP survey corridor. Appendix C identifies the tracts where surveys have been completed.

3.1 WETLANDS

A total of 25 wetlands have been documented within the survey corridor along the proposed pipeline route in the USACE Huntington District in West Virginia during the field season. Table 3.1-1 includes the state, county, unique project wetland ID, Cowardin classification, approximate milepost, latitude, and longitude of each wetland surveyed. Datasheets and photo pages for each wetland and upland sample point are provided in Appendix A.

3.2 WATERBODIES

A total of 138 waterbodies have been documented within the survey corridor along the proposed pipeline route in the USACE Huntington District in West Virginia during the field season. Table 3.2-1 includes the state, county, unique project waterbody ID, USGS waterbody name, hydrologic regime, field estimated OHWM width (ft.), and field estimated bank-to-bank width (feet), approximate milepost, latitude, and longitude of each surveyed waterbody. Datasheets and photo pages for each waterbody sample point are provided in Appendix B.

3.3 NON-TIDAL DITCHES

No ditches were documented within the survey corridor along the proposed pipeline route in West Virginia and Pennsylvania.

3.4 SEEP POINTS

No seep points were documented within the survey corridor along the proposed pipeline route in West Virginia and Pennsylvania.

3.5 NON-WATER POINTS

No non-water points were documented within the survey corridor along the proposed pipeline route in West Virginia and Pennsylvania.

TABLE 3.1-1

Supply Header Project
Surveyed Wetlands

Facility/State/County/ Approximate Milepost	Unique ID	Cowardin Classification	Latitude	Longitude
TL-635				
West Virginia				
Doddridge				
0.8	wdog001e	PEM	39.179514	-80.569670
1.3	wdog005e	PEM	39.184907	-80.574711
1.4	wdoh003e	PEM	39.185489	-80.575343
2.9	wdog006f	PFO	39.201336	-80.591292
4.0	wdoa002e	PEM	39.214184	-80.597572
4.6	wdog007e	PEM	39.219418	-80.604728
5.1	wdog008f	PFO	39.224988	-80.608753
5.8	wdoa001e	PEM	39.234835	-80.609196
7.7	wdoj001s	PSS	39.256413	-80.622682
10.6	wdog009e	PEM	39.288407	-80.640077
12.2	wdog010f	PFO	39.310092	-80.638996
12.9	wdog011e	PEM	39.318523	-80.637487
14.1	wdoh006f	PFO	39.335314	-80.635768
15.1	wdog003e	PEM	39.348675	-80.638302
17.8	wdoh004e	PEM	39.383074	-80.638837
18.5	wdoa100e	PEM	39.391212	-80.636033
19.0	wdoh005e	PEM	39.400748	-80.638277
20.7	wdog012s	PSS	39.419185	-80.629243
Tyler				
None Identified				
Wetzel				
24.8	wwzg003f	PFO	39.470179	-80.620154
25.4	wwzh021e	PEM	39.477065	-80.604370
25.4	wwzh022e	PEM	39.476114	-80.600261
26.2	wwzh020e	PEM	39.486711	-80.613693
26.8	wwzg004f	PFO	39.494182	-80.606849
31.3	wwza001e	PEM	39.538729	-80.636647
33.6	wwzg001e	PEM	39.549612	-80.664891
33.6	wwzg002f	PFO	39.550886	-80.661779

TABLE 3.2-1

Supply Header Project
Surveyed Waterbodies

Facility/State/ County/ Approximate Milepost	Unique ID	USGS Name	Hydrologic Regime	OHWM Width (feet)	Bank to Bank Width (feet)	Latitude	Longitude
TL-635							
West Virginia							
Doddridge							
0.8	sdog002	UNT to Dry Fork	Intermittent	2	4	39.179334	-80.569469
0.8	sdog001	UNT to Dry Fork	Perennial	8	14	39.179621	-80.569474
0.9	sdoj009	Dry Fork	Perennial	4	8	39.181446	-80.566341
0.9	sdoj010	UNT to Dry Fork	Perennial	5	10	39.181341	-80.566965
1.3	sdoh004	Dry Fork	Perennial	8	15	39.184636	-80.575072
1.4	sdoh003	UNT to Dry Fork	Perennial	4	6	39.186893	-80.575581
2.1	sdog014	Meathouse Fork	Perennial	25	30	39.192305	-80.583228
2.9	sdog015	Johnson Fork	Perennial	6	20	39.201259	-80.591379
2.9	sdog016	UNT to Johnson Fork	Perennial	4	15	39.201285	-80.591820
3.9	sdog017	UNT to Indian Fork	Intermittent	4	10	39.212885	-80.597358
4.0	sdog018	UNT to Indian Fork	Perennial	12	18	39.213752	-80.598065
4.0	sdoa023	UNT to Indian Fork	Intermittent	8	15	39.215125	-80.597172
4.0	sdog019	UNT to Indian Fork	Intermittent	4	6	39.214049	-80.598786
4.5	sdoa022	UNT to Indian Fork	Ephemeral	3	5	39.219642	-80.604023
4.6	sdog020	UNT to Indian Fork	Perennial	8	11	39.219177	-80.605066
5.0	sdoj008	Indian Fork	Perennial	15	20	39.223972	-80.604833
5.1	sdog021	UNT to Indian Fork	Intermittent	4	5	39.224638	-80.608370
5.1	sdog022	UNT to Indian Fork	Perennial	8	12	39.224995	-80.609086
5.1	sdoj007	Indian Fork	Perennial	6	15	39.226432	-80.604239
5.4	sdoa021	Buckeye Creek	Perennial	18	20	39.230169	-80.608291
5.9	sdoa004	UNT to Buckeye Creek	Ephemeral	1	3	39.235205	-80.609067
5.9	sdoa016	UNT to Buckeye Creek	Ephemeral	1	3	39.235382	-80.609121
5.9	sdoa018	UNT to Buckeye Creek	Intermittent	6	12	39.235048	-80.608937
5.9	sdoa019	UNT to Buckeye Creek	Ephemeral	3	6	39.234943	-80.608894
5.9	sdoa020	UNT to Buckeye Creek	Ephemeral	3	6	39.23475	-80.608977
6.0	sdoa005	UNT to Buckeye Creek	Ephemeral	1	2	39.237711	-80.608451
6.0	sdoa017	UNT to Buckeye Creek	Ephemeral	1	3	39.236297	-80.609011
6.0	sdoa014	UNT to Buckeye Creek	Ephemeral	1	2	39.237141	-80.610905
6.0	sdoa015	UNT to Buckeye Creek	Ephemeral	1	2	39.236992	-80.610605
6.5	sdoa006	UNT to Greenbrier Creek	Ephemeral	2	3	39.242863	-80.611758
6.6	sdoa007	UNT to Greenbrier Creek	Ephemeral	1	2	39.243253	-80.611876
6.6	sdoa009	UNT to Greenbrier Creek	Ephemeral	4	6	39.243860	-80.612370
6.7	sdoa008	UNT to Greenbrier Creek	Ephemeral	1	2	39.243777	-80.612145
6.7	sdoa011	Greenbrier Creek	Perennial	18	22	39.244458	-80.612359
6.7	sdoa010	UNT to Greenbrier Creek	Ephemeral	1	12	39.244050	-80.612054
6.7	sdoa013	UNT to Greenbrier Creek	Ephemeral	1	4	39.245130	-80.612596
6.8	sdoa012	UNT to Greenbrier Creek	Ephemeral	1	3	39.246552	-80.613343
7.8	sdoj005	Buffalo Calf Fork	Perennial	10	18	39.257656	-80.622715
7.8	sdog033	Buffalo Calf Fork	Perennial	10	15	39.259398	-80.619254
7.9	sdog034	UNT Buffalo Calf Ford	Perennial	6	10	39.259865	-80.619115
7.9	sdoj004	UNT to Buffalo Calf Fork	Perennial	4	12	39.261515	-80.618638
8.9	sdog023	UNT to Buffalo Calf Fork	Perennial	8	12	39.270407	-80.630282
9.4	sdog024	Long Run	Perennial	25	30	39.276790	-80.633501

TABLE 3.2-1

Supply Header Project
Surveyed Waterbodies

Facility/State/ County/ Approximate Milepost	Unique ID	USGS Name	Hydrologic Regime	OHWM Width (feet)	Bank to Bank Width (feet)	Latitude	Longitude
9.4	sdoj003	UNT to Long Run	Perennial	4	8	39.277925	-80.634562
10.6	sdog025	Buckeye Run	Perennial	16	18	39.288369	-80.640581
10.6	sdog026	UNT to Buckeye Run	Perennial	10	15	39.288955	-80.640846
11.2	sdoj002	UNT to Buckeye Run	Perennial	6	12	39.296993	-80.633903
11.7	sdoj001	UNT to Buckeye Run	Intermittent	4	6	39.302928	-80.635056
12.9	sdog027	UNT to Flint Run	Perennial	6	12	39.319032	-80.637233
12.9	sdog028	Flint Run	Perennial	10	18	39.319805	-80.639854
12.9	sdoh018	UNT to Flint Run	Perennial	2	4	39.319805	-80.639854
13.5	sdoh019	UNT to Flint Run	Perennial	4	8	39.326333	-80.631760
14.0	sdoa003	UNT to Flint Run	Ephemeral	1	2	39.334158	-80.629339
14.1	sdoh020	UNT to Right Hand Fork	Perennial	4	8	39.334917	-80.636587
14.1	sdog007	UNT to Righthand Fork East Run	Perennial	7	15	39.335192	-80.638112
14.2	sdoh021	UNT to Big Battle Run	Perennial	6	10	39.339060	-80.625285
14.2	sdog029	UNT to Right Hand Fork East Run	Intermittent	3	5	39.336652	-80.635030
15.1	sdog008	UNT to Big Battle Run	Perennial	5	10	39.348706	-80.638224
15.2	sdog009	UNT to Big Battle Run	Perennial	2	6	39.349295	-80.638170
15.5	sdoh022	Big Battle Run	Perennial	15	20	39.351876	-80.626247
15.6	sdoh009	UNT to Big Battle Run	Perennial	5	10	39.355277	-80.636984
15.8	sdoh008	UNT to Big Battle Run	Perennial	5	6	39.356626	-80.637474
15.8	sdog030	UNT to Big Battle Run	Intermittent	3	5	39.357083	-80.637542
16.3	sdoh023	Big Battle Run	Perennial	15	20	39.363923	-80.622467
16.5	sdoh024	UNT to Big Battle Run	Perennial	4	8	39.364101	-80.623300
17.8	sdoh017	Little Battle Run	Perennial	10	25	39.381653	-80.639107
17.8	sdoh010	Little Battle Run	Perennial	6	20	39.383466	-80.637766
17.8	sdoh011	UNT to Little Battle Run	Perennial	1	4	39.383005	-80.638724
18.5	sdoh012	Mcelroy Creek	Perennial	55	70	39.392560	-80.638533
18.5	sdoa100	Talkinton Fork	Perennial	15	35	39.392286	-80.636805
18.6	sdog031	UNT to Mcelroy Creek	Perennial	6	8	39.393157	-80.637575
19.0	sdoh016	Franks Run	Perennial	10	20	39.400574	-80.638514
19.5	sdoh015	UNT to Talkington Fork	Perennial	8	15	39.402966	-80.623851
20.6	sdog032	Franks Run	Perennial	20	30	39.419105	-80.628983
20.7	sdoh014	UNT to Franks Run	Intermittent	3	6	39.420128	-80.628395
21.9	sdoh013	UNT to Broad Run	Intermittent	4	6	39.435751	-80.640047
Tyler							
23.1	styg001	UNT to Indian Creek	Intermittent	5	10	39.448080	-80.628308
23.1	styg002	Indian Creek	Perennial	15	18	39.448271	-80.628525
Wetzel							
24.8	swzg024	UNT to Buffalo Run	Perennial	15	20	39.470234	-80.620051
24.8	swzh025	UNT to Buffalo Run	Perennial	8	15	39.471245	-80.621231
24.8	swzh023	UNT to Buffalo Run	Perennial	4	7	39.471098	-80.620988
24.8	swzh024	UNT to Buffalo Run	Perennial	4	7	39.471457	-80.621408
24.8	swzh022	UNT to Buffalo Run	Perennial	3	5	39.474030	-80.624992
24.8	swzh026	UNT to Buffalo Run	Perennial	3	5	39.473388	-80.624342
25.3	swzh012	UNT to Buffalo Run	Intermittent	6	8	39.478256	-80.618647
25.4	swzg025	UNT to Buffalo Run	Perennial	4	8	39.477643	-80.615271
25.4	swzg026	UNT to Buffalo Run	Perennial	12	18	39.477867	-80.615595

TABLE 3.2-1

Supply Header Project
Surveyed Waterbodies

Facility/State/ County/ Approximate Milepost	Unique ID	USGS Name	Hydrologic Regime	OHWM Width (feet)	Bank to Bank Width (feet)	Latitude	Longitude
25.5	swzh010	UNT to Buffalo Run	Perennial	9	15	39.478584	-80.619204
25.5	swzh011	UNT to Buffalo Run	Intermittent	6	10	39.479974	-80.620662
25.6	swzh008	UNT to Buffalo Run	Intermittent	4	6	39.486348	-80.620937
25.6	swzh009	UNT to Buffalo Run	Intermittent	2	4	39.486310	-80.620756
25.9	swzh013	UNT to Buffalo Run	Intermittent	3	5	39.476629	-80.605645
25.9	swzh015	UNT to Arches Fork	Perennial	8	10	39.476787	-80.605522
25.9	swzh016	UNT to Arches Fork	Perennial	6	8	39.476835	-80.602328
26.0	swzh014	UNT to Arches Fork	Perennial	6	10	39.477229	-80.598057
26.0	swzh017	UNT to Arches Fork	Perennial	3	5	39.476249	-80.599242
26.0	swzh018	UNT to Arches Fork	Intermittent	4	6	39.476719	-80.597309
26.0	swzh019	UNT to Arches Fork	Perennial	8	10	39.478390	-80.595024
26.0	swzh020	UNT to Arches Fork	Perennial	8	10	39.478495	-80.593187
26.0	swzh021	Arches Fork	Perennial	25	35	39.478143	-80.591544
26.0	swzh012	UNT to Buffalo Run	Intermittent	6	8	39.478154	-80.618586
26.2	swzh002	UNT to Buffalo Run	Perennial	8	12	39.486282	-80.618648
26.2	swzh003	UNT to Buffalo Run	Perennial	2	5	39.486342	-80.614742
26.2	swzh004	UNT to Buffalo Run	Perennial	2	4	39.486332	-80.615240
26.2	swzh005	UNT to Buffalo Run	Perennial	3	5	39.486615	-80.613797
26.2	swzh006	UNT to Buffalo Run	Intermittent	3	6	39.488053	-80.612740
26.2	swzh007	UNT to Buffalo Run	Intermittent	2	4	39.488115	-80.612646
26.8	swzg028	UNT to Carpenter Run	Perennial	8	12	39.493842	-80.606459
26.9	swzg027	Carpenter Run	Perennial	15	18	39.494337	-80.606903
28.1	swza002	Ashcamp Run	Perennial	9	18	39.509627	-80.612822
28.1	swza001	UNT to Ashcamp Run	Ephemeral	1	3	39.509613	-80.613161
28.1	swza003	UNT to Ashcamp Run	Intermittent	3	5	39.509433	-80.611903
29.0	swzh001	UNT to Buffalo Run	Intermittent	3	5	39.515915	-80.639109
29.4	swzh028	Fishing Creek	Perennial	70	90	39.519869	-80.623938
29.4	swzh027	UNT to Fishing Creek	Perennial	4	8	39.520234	-80.623374
29.5	swzg014	UNT to South Fork Fishing Creek	Perennial	3	5	39.520918	-80.623053
29.7	swzg016	UNT to South Fork Fishing Creek	Intermittent	4	6	39.523633	-80.622864
29.7	swzg015	UNT to South Fork Fishing Creek	Intermittent	3	5	39.523655	-80.623162
29.7	swzg017	UNT to South Fork Fishing Creek	Perennial	4	6	39.524155	-80.623014
29.7	swzg018	South Fork Fishing Creek	Perennial	45	60	39.526501	-80.623481
30.9	swzg019	Richwood Run	Perennial	15	20	39.533885	-80.634354
30.9	swzg020	UNT to Richwood Run	Perennial	3	5	39.533917	-80.634768
31.1	swza006	UNT to Richwood Run	Ephemeral	2	3	39.536469	-80.636511
31.1	swza007	UNT to Richwood Run	Ephemeral	1	2	39.536287	-80.63593
31.1	swza008	UNT to Richwood Run	Ephemeral	2	3	39.535870	-80.635535
31.8	swzg021	Upper Run	Perennial	20	30	39.544398	-80.639333
32.2	swzg022	UNT to Upper Run	Perennial	15	18	39.548464	-80.644841
33.2	swzg023	Lower Run	Perennial	7	14	39.552346	-80.657750
33.4	swzg008	Lower Run	Perennial	14	20	39.550110	-80.661192
33.5	swzg009	UNT to Lower Run	Perennial	15	20	39.552407	-80.661634
33.5	swzg010	UNT to Lower Run	Perennial	2	8	39.550417	-80.661498
33.5	swzg003	South Fork Fishing Creek	Perennial	120	150	39.550340	-80.669777
33.5	swzg004	UNT to South Fork Fishing Creek	Perennial	6	10	39.547629	-80.667466

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Supply Header Project
Surveyed Waterbodies

Facility/State/ County/ Approximate Milepost	Unique ID	USGS Name	Hydrologic Regime	OHWM Width (feet)	Bank to Bank Width (feet)	Latitude	Longitude
33.6	swzg001	UNT to South Fork Fishing Creek	Perennial	4	8	39.552987	-80.667294
33.6	swzg002	UNT to South Fork Fishing Creek	Intermittent	4	8	39.551895	-80.667594
33.6	swzg007	UNT to Lower Run	Intermittent	4	10	39.551476	-80.66404
33.6	swzg006	UNT to Lower Run	Intermittent	3	14	39.552650	-80.665295
33.6	swzg005	UNT to Lower Run	Intermittent	3	10	39.549838	-80.66581
33.6	owzg001	Unnamed Pond	Pond	--	--	39.552832	-80.663922

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SUPPLY HEADER PROJECT ENVIRONMENTAL SURVEY

Wetland and Waterbody Delineation Report

APPENDIX A

Wetland Datasheets and Photo Pages

SUPPLY HEADER PROJECT ENVIRONMENTAL SURVEY

Wetland Datasheets and Photo Pages

TL-635

Doddridge County

West Virginia

SUPPLY HEADER PROJECT ENVIRONMENTAL SURVEY

Wetland Datasheets and Photo Pages

TL-635

Wetzel County

West Virginia

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Wetland and Waterbody Delineation Report

APPENDIX B

Waterbody Datasheets and Photo Pages

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Doddridge County

West Virginia

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Waterbody Datasheets and Photo Pages

TL-635

Tyler County

West Virginia

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Waterbody Datasheets and Photo Pages

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Wetzel County

West Virginia

SUPPLY HEADER PROJECT ENVIRONMENTAL SURVEY

Wetland and Waterbody Delineation Report

APPENDIX C

U.S. Geological Survey (USGS) 7.5-Minute Topographic and Aerial Photography Maps