

**MVP Southgate Amendment Project**

**Docket No. CP25-XX-000**

**Resource Report 2**

**Appendix 2-F**

**Amendment Project Wetland Delineation Reports**

**MVP Southgate Amendment Project**

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**Appendix 2-F**

**Amendment Project Wetland Delineation Reports**

**North Carolina**



**MOUNTAIN VALLEY PIPELINE, LLC**

**MVP Southgate Amendment Project  
Wetland Delineation Report  
Rockingham County, North Carolina**

MVP Southgate Amendment Project

DECEMBER 2, 2024

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## List of Abbreviations

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Abbreviation	Term/Phrase/Name
87 Manual	1987 Corps of Engineers Wetlands Delineation Manual
Amendment Project	MVP Southgate Amendment Project
Amendment Project Area	Project layout with associated with MVP Southgate Amendment Project
APT	Antecedent Precipitation Tool
BMcD	BMCD EGS, P.C.
HUC	Hydrologic Unit Code
MVP	Mountain Valley Pipeline, LLC
NAIP	National Agriculture Imagery Program
NC	North Carolina
NCDEQ	North Carolina Department of Environmental Quality
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
OHWM	Ordinary High-Water Mark
PEM	Palustrine Emergent
PFO	Palustrine Forested
PJD	Preliminary Jurisdictional Determination
PSS	Palustrine Scrub-Shrub
PUB	Palustrine Unconsolidated Bottom
Regional Supplement	<i>2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region – Version 2.0</i>
SSURGO	Soil Survey Geographic
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey



# 1.0 Introduction

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Mountain Valley Pipeline LLC (MVP) is proposing a new 31.5 mile, 30-inch diameter natural gas pipeline initiating in Pittsylvania County, Virginia, and terminating in Rockingham County, North Carolina (NC). A total of five miles of pipeline would be constructed in North Carolina and the remaining 26.5 miles of pipeline in Virginia. MVP also proposes to construct three interconnection facilities in North Carolina and one interconnection facility in Virginia as part of the Amendment Project (Amendment Project). BMcD EGS P.C. (BMcD) was contracted to conduct a wetland delineation for the Amendment Project. The North Carolina portion of the Amendment Project begins northeast of Quesinberry Rd in Eden, NC (36°29'29.50"N, 79°40'58.21"W) and terminates at the North Carolina-Virginia border (36°32'29.87"N, 79°37'57.71"W) 0.18 miles northeast of the intersection of U.S. Highway 311 and Buffalo Road, approximately 2.33 miles northeast of Fitzgerald, NC. A corridor of variable width and access roads were surveyed along this route (Amendment Project Area). The North Carolina portion of the Amendment Project encompasses 139.3 acres (Amendment Project Area; Figure A-1). The Amendment Project Area consists primarily of broadleaf deciduous and mixed forests, pine plantations, current and former pastures, and planted row crops. This report encompasses only the North Carolina portion of the Amendment Project. BMcD conducted a wetland delineation for the Amendment Project to evaluate the presence of wetlands and other water resources, including streams, drainages, and ponds, that may fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and North Carolina Department of Environmental Quality (NCDEQ) as designated by Sections 404 and 401 of the Clean Water Act. The wetland delineation was conducted in accordance with the 1987 *Corps of Engineers Wetland Delineation Manual* (87 Manual; USACE 1987) and the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region – Version 2.0* (Regional Supplement; USACE 2010). BMcD employs experienced delineators and strives to achieve a high a degree of precision and accuracy in the delineation of aquatic feature boundaries. As noted in the 87 Manual and Regional Supplement, delineations conducted at different times and/or by different delineators may result in minor variations in area and boundaries due to several factors. Those factors may include (1) the exercise of professional judgment to evaluate site-specific conditions and indicators; (2) statistical variability inherent in the use of transects and sampling methods to map features; and (3) normal annual and seasonal variability.

## 2.0 Methods

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### 2.1 Desktop Review

BMcD reviewed publicly available information in Geographic Information Systems to identify potential wetland and water body features in the Amendment Project Area prior to conducting a site visit. This information included U.S. Geological Survey (USGS) 7.5-minute topographic maps Southeast Eden and Northeast Eden, NC quadrangles (USGS 2022a, b), USGS National Hydrography Dataset (NHD; USGS 2016), U.S. Fish & Wildlife Service National Wetlands Inventory (NWI) maps (USFWS 2024), National Agriculture Imagery Program (NAIP) aerial photography (NAIP 2021), the Federal Emergency Management Agency (FEMA) floodplain and floodway data (FEMA 2007), and the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) digital data for Rockingham County, North Carolina (USDA NRCS 2023). These maps are provided in Appendix A. The USACE Antecedent Precipitation Tool (APT) was reviewed to evaluate precipitation conditions and evaluate “normal conditions” as required as part of the wetland delineation (Appendix E; USACE 2023).

Data from the above sources were used to identify probable locations of wetlands within the Amendment Project Area. The USACE defines wetlands as areas that contain hydric soils, hydrophytic vegetation, and wetland hydrology. This desktop review used existing information to identify areas where these indicators are likely to be present, including overlapping areas of NWI and NHD features, hydric soils, lower elevations in the landscape, saturation or inundation visible on aerial imagery, etc. The onsite wetland delineation described below was conducted to verify and update the findings of the desktop review.

### 2.2 Wetland Delineation Field Survey

A wetland delineation was completed June 3 through 18, August 19 through September 4, September 26, and October 3, 2024, in accordance with the 87 Manual and the Regional Supplement. Boundaries were walked and recorded with sub-meter-accurate global positioning systems, including SXblue and Juniper Systems Geode. Sample plots were established at multiple locations, typically paired on either side of the wetland/upland boundary to demonstrate wetland and non-wetland conditions. The location and extent of wetlands, streams, and drainage ditches are shown with aerial imagery background on Figure A-2 in Appendix A.

Wetland Determination Data Forms from the Regional Supplement were completed to document representative conditions at each sample point location within the Amendment Project Area (Appendix B). Vegetation, soil conditions, and hydrologic indicators were recorded at each of these sample plots. The areal percent cover of each plant species was estimated by stratum, and the appropriate wetland indicator status from the USACE 2020 National Wetland Plant List was assigned to determine the presence or absence of hydrophytic vegetation. Soil color and texture were recorded using a Munsell Soil Color chart (Munsell 2021) and analyzed in accordance with the Field Indicators of Hydric Soils in the United States (USDA NRCS 2024a). Hydric soil indicators were noted on the data form when present. Observations of primary and secondary hydrology indicators were noted based on field observations and desktop data review. Representative photographs were taken at each sample plot location and are included in Appendix C.

Each wetland was evaluated using the North Carolina Wetland Assessment Method in accordance with the 2016 *North Carolina Wetland Assessment Method (NC WAM) User Manual Version 5*. Copies of the North Carolina Wetland Assessment Method Forms are included in Appendix D.

Each wetland was assigned a classification based on the Cowardin Classification System (Cowardin et al. 1979) and consisted of the following:

- Palustrine Emergent (PEM) – characterized by a 30 percent or greater areal cover of emergent, herbaceous vegetation. Additionally, the combined areal cover of shrubs, saplings, and trees in these wetlands was less than 30 percent.
- Palustrine Forested (PFO) – characterized by a 30 percent or greater areal cover in the tree stratum and an aerial cover of less than 30 percent in the shrub/sapling stratum.
- Palustrine Scrub-Shrub (PSS) – characterized by a 30 percent or greater areal cover in the shrub/sapling stratum and an aerial cover of less than 30 percent in the tree stratum.
- Palustrine Unconsolidated Bottom (PUB) – characterized by a combined areal cover of less than 30 percent of vegetation.

Stream channels were delineated, and characteristics were recorded including ordinary high-water mark (OHWM) width and depth as well as flow regime.

Flow regimes at each delineated stream were assigned based on observed flow at the time of the delineation and consisted of one of the following designations:

- Perennial – characterized by the presence of a substantial volume of flow at the time of the site visit, indicating that water flows year-round.
- Intermittent – characterized by the presence of a limited volume of flow at the time of the site visit, indicating that the stream is partially fed by groundwater, but that flow is not continuous year-round.
- Ephemeral – characterized by a defined bed and bank but had limited or no flow during the site visit, indicating these streams largely carry water only during and after precipitation events.

Summary tables in Section 3.0 list the features identified and provide wetland acreage and linear feet of stream channels and drainage ditches within the Amendment Project Area.

## 3.0 Results

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### 3.1 Desktop Review

The NCDEQ 8-digit Hydrologic Unit Code (HUC) Subbasins Map (2023) indicates the Amendment Project is situated within the Upper Dan (HUC 03010103) drainage basin, which is a sub-basin to the Roanoke River (HUC 0301001). The 2021 NAIP aerial photography indicates that the Amendment Project Area consists primarily of broadleaf deciduous and mixed forests, pine plantations, current and former pastures, and planted row crops.

A review of the USGS topographic maps (Figure A-2, Appendix A) indicates the Amendment Project Area consisted of varying terrain with elevations ranging from 474-650 feet above sea level, large portions of forested areas with scattered open areas, and numerous drainageways and stream channels flowing generally southeast into the Dan River, Dry Creek, and Cascade Creek and unnamed tributaries to these listed streams. Three named features, the Dan River, Dry Creek, and Cascade Creek, are located within the Amendment Project Area.

USDA NRCS SSURGO digital data indicates that portions of 13 soil map units are located in the Amendment Project Area (Figure A-3, Appendix A). Of the 13 soil map units, only one map unit (Leaksville silt loam, 0 to 4 percent slopes) is included in the NRCS Hydric Soils List (Figure A-4; USDA NRCS, 2024b).

NWI data indicates one PEM wetland, one PFO wetland, one PUB wetland, and 11 riverine features are located within the Amendment Project Area (Figure A-4, Appendix A).

NHD data indicates the Amendment Project Area crosses numerous streams, including Cascade Creek and the Dan River (Figure A-4, Appendix A).

The FIRM data indicates the Amendment Project Area crosses several floodplains as well as the floodway associated with the Dan River (Figure A-4, Appendix A).

The USACE APT indicates that the antecedent precipitation conditions that the site experienced fluctuated over time between drier than normal and normal. All days that surveys were conducted were under normal antecedent precipitation conditions except for June 10, 17, and 18, 2024, where conditions were drier than normal, and August 21 through 30, September 26, and October 3, 2024, where conditions were wetter than normal. A copy of the USACE APT results is provided in Appendix E.

### 3.2 Delineated Areas

From June 3 through 18, August 19 through September 4, September 26, and October 3, 2024, wetland scientists conducted a wetland delineation of the Amendment Project Area. The locations, boundaries, and characteristics of wetlands and streams were determined and recorded within the Amendment Project Area. The land cover and delineated wetlands and other waterbodies are discussed in detail below.

#### 3.2.1 Vegetation

The Amendment Project Area primarily consisted of broadleaf deciduous forest, mixed forest, pine plantations, current and former pastures, and row crops. Dominant tree and shrub/sapling species within the Amendment Project Area include red maple (*Acer rubrum*), tuliptree (*Liriodendron tulipifera*), Persian silk tree (*Albizia julibrissin*), white oak (*Quercus alba*), black cherry (*Prunus serotina*), American hornbeam (*Carpinus*

*caroliniana*), sweetgum (*Liquidambar styraciflua*), willow oak (*Quercus phellos*), and pignut hickory (*Carya glabra*). Dominant herbaceous species within the Amendment Project Area included white clover (*Trifolium repens*), Japanese stiltgrass (*Microstegium vimineum*), fowl mannagrass (*Glyceria striata*), rescue brome (*Bromus catharticus*), annual bluegrass (*Poa annua*), tall fescue (*Schedonorus arundinaceus*), false nettle (*Boehmeria cylindrica*), tall goldenrod (*Solidago altissima*), and deertongue (*Dichantheium clandestinum*).

### 3.2.2 Soils

Typical soils within the Amendment Project Area ranged from dark grayish brown (10YR 4/2) to strong brown (7.5YR 4/6) and ranged from clay loam to sandy loam in texture. Redoximorphic features were typically present in wetland soils and absent from upland soils. Soils observed within delineated wetland areas are described below and are shown on the Data Forms in Appendix B.

### 3.2.3 Hydrology

The primary source of hydrology for wetland areas was retention of surface runoff in geomorphic positions with poor drainage and flooding from adjacent streams and groundwater. Typical indicators of hydrology within wetlands included Water-Stained Leaves, Geomorphic Position, and a positive FAC-Neutral Test.

### 3.2.4 Wetlands

The delineation identified a total of 32 wetlands, comprised of four wetland types: PEM, PFO, PUB, and PSS, encompassing a total of 12.79 acres within the Amendment Project Area. One wetland, W-B045, was delineated during field surveys but was determined to be located outside the Amendment Project Area. This feature is depicted on Figure A-5; however, it is not included in the summary of wetlands or Table 3-1. BMcD assumes a Preliminary Jurisdictional Request (PJD) will be submitted to USACE for the Amendment Project, therefore all wetlands within the Amendment Project Area are assumed to be under both USACE and NCDEQ jurisdiction. Table 3-1 below includes the Cowardin classification, acreage, and proposed jurisdictional status of each wetland delineated within the Amendment Project Area. The location and extent of the delineated wetlands are depicted in Figure A-5 in Appendix A. Data forms and color photographs from the wetland delineation are included in Appendices B and C, respectively.

Seventeen PEM wetlands encompassing 5.57 acres were delineated. Common vegetation within PEM wetlands included trumpet vine (*Campsis radicans*), lamp rush (*Juncus effusus*), small carpet grass (*Arthraxon hispidus*), poison ivy (*Toxicodendron radicans*), deertongue, globe flatsedge (*Cyperus echinatus*), marsh seedbox (*Ludwigia palustris*), foxtail sedge (*Carex vulpinoidea*), and Frank's sedge (*Carex frankii*). Wetland hydrology was commonly indicated by Saturation being Visible on Aerial Imagery, Drainage Patterns, Geomorphic Position, and a positive FAC-Neutral Test. Hydric soil was mainly indicated by Depleted Matrix.

Ten PFO wetlands encompassing 5.56 acres were delineated. Dominant woody vegetation in PFO wetlands tuliptree, red maple, willow oak, loblolly pine (*Pinus taeda*), sweetgum, American hornbeam, box elder (*Acer negundo*), and American sycamore (*Platanus occidentalis*). Dominant herbaceous vegetation in PFO wetlands included Japanese stiltgrass, jumpseed (*Persicaria virginiana*) fowl mannagrass, straw-colored flatsedge (*Cyperus strigosus*), velvety rosette panic-grass (*Dichantheium scoparium*), marsh seedbox, drooping sedge (*Carex prasina*), round-leaved greenbrier (*Smilax rotundifolia*), and jack-in-the-pulpit (*Arisaema triphylla*). Wetland hydrology was mainly indicated by High Water Table, Saturation, Saturation Visible on Aerial Imagery, Inundation Visible on Aerial Imagery, Drainage Patterns, Geomorphic Position, and a positive FAC-Neutral Test. Hydric soil was mainly indicated by Depleted Matrix.



Four PSS wetlands encompassing 1.65 acres were delineated. Dominant woody vegetation in PSS wetlands included green ash (*Fraxinus pennsylvanica*), buttonbush (*Cephalanthus occidentalis*), common persimmon (*Diospyros virginiana*), swamp rose (*Rosa palustris*), and American sycamore. Dominant herbaceous vegetation in PSS wetlands included pointed broomsedge (*Carex scoparia*), swamp rose mallow (*Hibiscus moscheutos*), lamp rush, tall goldenrod, and velvety rosette panic-grass. Wetland hydrology was mainly indicated by Oxidized Rhizospheres, Geomorphic Position, and a positive FAC-Neutral Test. Hydric soil was commonly indicated by Depleted Matrix.

One PUB wetland encompassing 0.01 acres was delineated. Vegetation was largely absent due to the presence of open water. Vegetation adjacent to the PUB wetland included red maple, sweetgum, pignut hickory, American sycamore, broomsedge (*Andropogon virginicus*), Allegheny blackberry, tuliptree, and poison ivy. Soil sampling was prevented by the presence of open water, but hydric soil conditions are assumed due to inundation creating anaerobic conditions. Hydrology was indicated by Surface Water, Inundation Visible on Aerial Imagery, and Geomorphic Position.

**Table 3-1: Type and Size of Delineated Wetlands**

Wetland Number	Wetland Type <sup>a</sup>	Area of Wetland Delineated (acre) <sup>b</sup>	Proposed Federal and State Jurisdiction <sup>c</sup>	Figure A-5 Page Number
OW-B001	PUB	0.01	Yes	28
W-B001	PEM	0.41	Yes	29
W-B002	PFO	2.51	Yes	28, 29, 30, 31
W-B003	PFO	0.07	Yes	28
W-B004	PEM	0.02	Yes	31
W-B004a	PSS	0.04	Yes	28, 31
W-B005	PFO	2.52	Yes	23, 24, 26
W-B006	PFO	0.07	Yes	18, 20
W-B007	PEM	0.01	Yes	15
W-B008	PFO	0.01	Yes	16
W-B009a	PFO	0.25	Yes	15
W-B009b	PEM	0.06	Yes	14, 15
W-B010	PEM	0.06	Yes	10, 14
W-B011	PEM	0.03	Yes	2
W-B012	PEM	0.21	Yes	1, 2
W-B013b <sup>d</sup>	PFO	0.02	Yes	1
W-B027	PFO	0.05	Yes	6
W-B027a	PEM	>0.01	Yes	6
W-B028	PEM	0.85	Yes	5, 6
W-B029	PEM	1.59	Yes	5, 6
W-B030	PSS	0.52	Yes	6
W-B031a	PEM	2.00	Yes	5
W-B031b	PSS	1.04	Yes	5
W-B032	PEM	0.11	Yes	4
W-B034	PEM	0.01	Yes	13

Wetland Number	Wetland Type <sup>a</sup>	Area of Wetland Delineated (acre) <sup>b</sup>	Proposed Federal and State Jurisdiction <sup>c</sup>	Figure A-5 Page Number
W-B051	PFO	0.02	Yes	28
W-B052a	PFO	0.04	Yes	18
W-B052b	PEM	0.01	Yes	18
W-B053	PEM	0.02	Yes	7, 8
W-B055	PEM	0.10	Yes	31
W-B056	PEM	0.08	Yes	28, 31
W-B056a	PSS	0.05	Yes	6
<b>Total</b>		<b>12.79</b>		
<p>(a) Symbols for wetland type: PEM = palustrine emergent, PFO = palustrine forested, PSS = palustrine scrub-shrub, PUB = palustrine unconsolidated bottom</p> <p>(b) Acreage within the Amendment Project Area, rounded to the nearest tenth of an acre.</p> <p>(c) All delineated wetland features within the Amendment Project Area are assumed to be under USACE and NCDEQ jurisdiction.</p> <p>(d) W-B013b is located within North Carolina and Virginia. The delineated area of W-B013b includes the portion within North Carolina.</p>				

### 3.3 Streams

A total of 24 streams, for a combined length of 2,759 feet, were identified during the site evaluation. Three streams were delineated during field surveys but were determined to be located outside the Amendment Project Area. These features, S-B037, S-B-48, and S-B049, are depicted on Figure A-5; however, they are not included in the summary of streams or Table 3-2. Streams were classified into ephemeral, intermittent, or perennial categories. BMcD assumes all streams identified will fall under the jurisdiction of the USACE and NCDEQ. Table 3-2 below includes the length of each stream delineated within the Amendment Project Area. The location and extent of the delineated streams are depicted in Figure A-5 in Appendix A. Color photographs from the wetland delineation are located in Appendix C.

Three perennial streams extending for a delineated length of 220 feet were identified. These perennial streams ranged from 25 to 200 feet wide and a depth of one foot or more at the OHWM. The depth of the Dan River could not be safely assessed.

Nine intermittent streams extending for a delineated length of 1,385 feet were identified. Intermittent streams were characterized by the presence of a limited volume of flow at the time of the site visit, indicating that the stream is partially fed by groundwater but that the stream may not flow during dry periods. These intermittent streams ranged from three to five feet wide and 0.25 to one foot deep at the OHWM.

Twelve ephemeral streams extending for a delineated length of 1,154 feet were identified. Ephemeral streams were characterized by a defined bed and bank but had limited or no flow during the site visit, indicating these streams largely carry water only during and after precipitation events. These ephemeral streams ranged from one to five feet wide 0.1 to one foot deep at the OHWM.

**Table 3-2 Type and Length of Delineated Streams**

Stream Number	Stream Type	Length of Stream (linear feet) <sup>a</sup>	OHWM Width (ft)	OHWM Depth (ft)	Proposed Federal and State Jurisdiction <sup>b</sup>	Figure A-5 Page Number
S-B001	Ephemeral	130	2.0	0.5	Yes	28
S-B002	Intermittent	570	5.0	0.5	Yes	28, 31
S-B003	Intermittent	58	3.5	0.5	Yes	28
S-B004	Ephemeral	55	4.0	0.1	Yes	28
S-B005	Perennial	9	200.0	N/A	Yes	27
S-B006	Intermittent	10	3.0	0.5	Yes	28
S-B007	Intermittent	14	3.0	0.5	Yes	24
S-B008	Intermittent	95	3.0	0.5	Yes	23
S-B009	Ephemeral	100	2.0	0.25	Yes	20, 21
S-B010	Ephemeral	209	2.0	0.25	Yes	18, 20
S-B011	Intermittent	73	4.0	0.5	Yes	17
S-B012	Ephemeral	13	3.0	0.25	Yes	11, 14
S-B013	Intermittent	5	4.0	0.25	Yes	14
S-B014	Ephemeral	96	2.0	0.25	Yes	15
S-B015	Intermittent	460	5.0	1.0	Yes	15
S-B015a	Ephemeral	15	1.0	0.2	Yes	15
S-B016	Ephemeral	355	2.0	0.25	Yes	15
S-B017	Ephemeral	81	1.0	0.25	Yes	16
S-B018	Ephemeral	47	1.5	0.25	Yes	2
S-B019	Ephemeral	16	1.0	0.25	Yes	2
S-B034	Perennial	124	30.0	1.0	Yes	6
S-B035	Perennial	87	25.0	1.0	Yes	6
S-B036	Intermittent	100	5.0	0.5	Yes	6
S-B057	Ephemeral	37	4.0	0.5	Yes	6
<b>Total</b>		<b>2,759</b>				
<p>(a) Linear feet of jurisdictional streams within the Amendment Project area, rounded to the nearest foot. Three streams were delineated during field surveys but were determined to no be located within the Amendment Project Area. These features, S-B037, S-B-48, and S-B049 are depicted on Figure A-5, however they are not included in Table 3-2.</p> <p>(b) All delineated stream features within the Amendment Project Area are assumed to be under USACE and NCDEQ jurisdiction.</p>						

## 4.0 Conclusions

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BMcD conducted a wetland delineation of the Amendment Project Area from June 3 through 18, August 19 through September 4, September 26, and October 3, 2024, to identify wetlands and other aquatic resources. A total of 32 wetlands and 24 streams were identified. BMcD assumes a PJD submittal to the USACE, therefore all wetlands and streams are assumed to be under the jurisdiction of the USACE and NCDEQ. The jurisdiction of all features identified is subject to change pending a jurisdictional determination by the USACE and NCDEQ.



## 5.0 References

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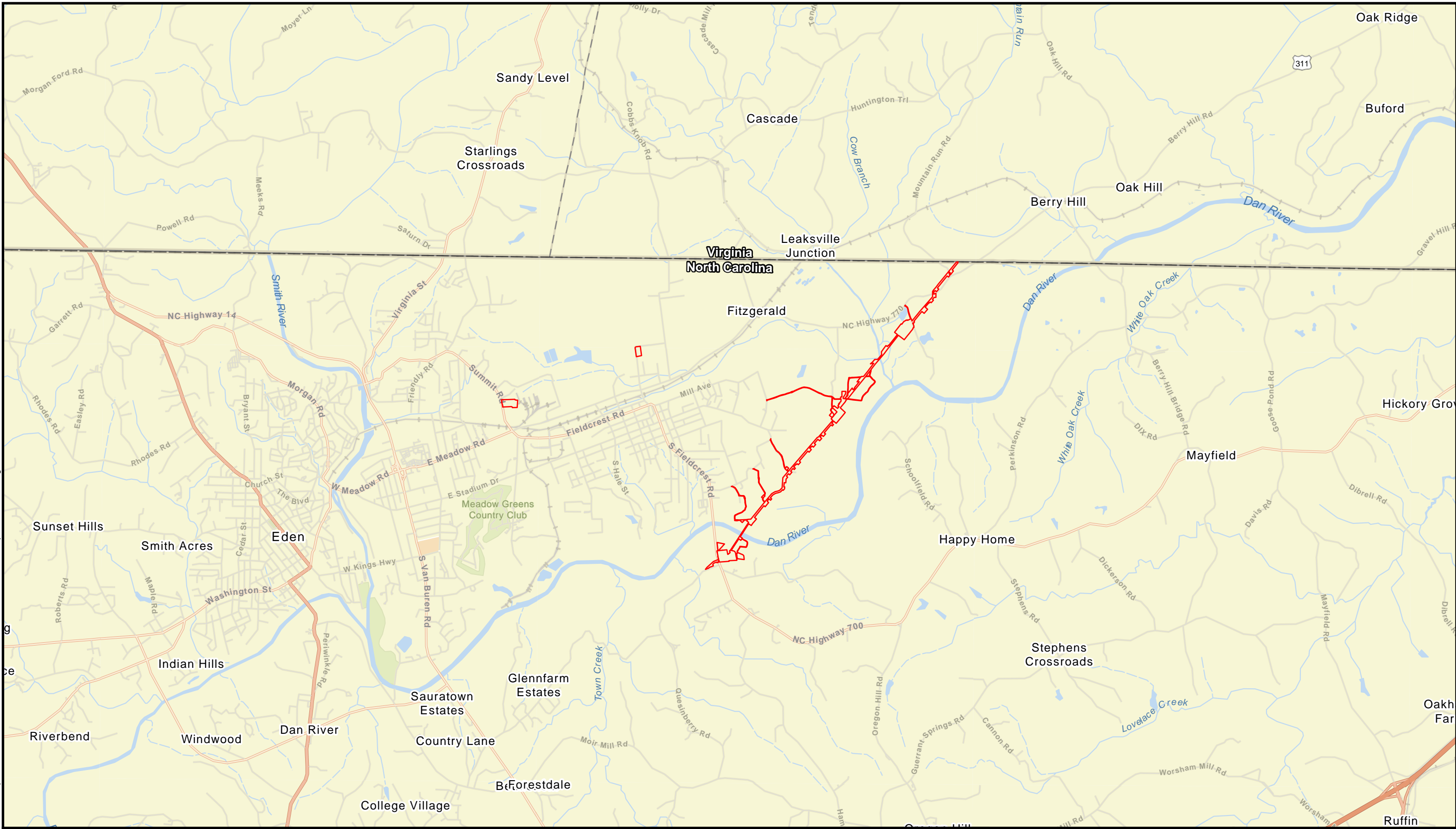
U.S. Geological Survey. 2022b. *Southeast Eden quadrangle, North Carolina (1: 24,000, 7.5 Minute Series)*.



## Appendix A – Figures

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Path: C:\ArcGIS\Projects\MVP\_Southgate\MVP\_Southgate Wetland Report.aprx ihassler 12/2/2024  
Service Layer Credits: World Street Map: State of North Carolina DOT; Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, EPA, NPS, USDA, USFWS



Project Area

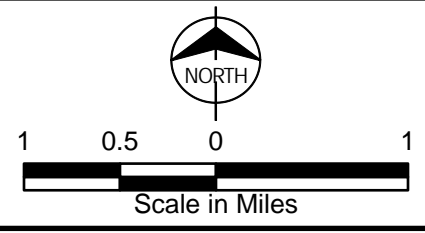
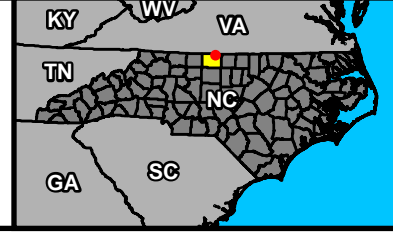
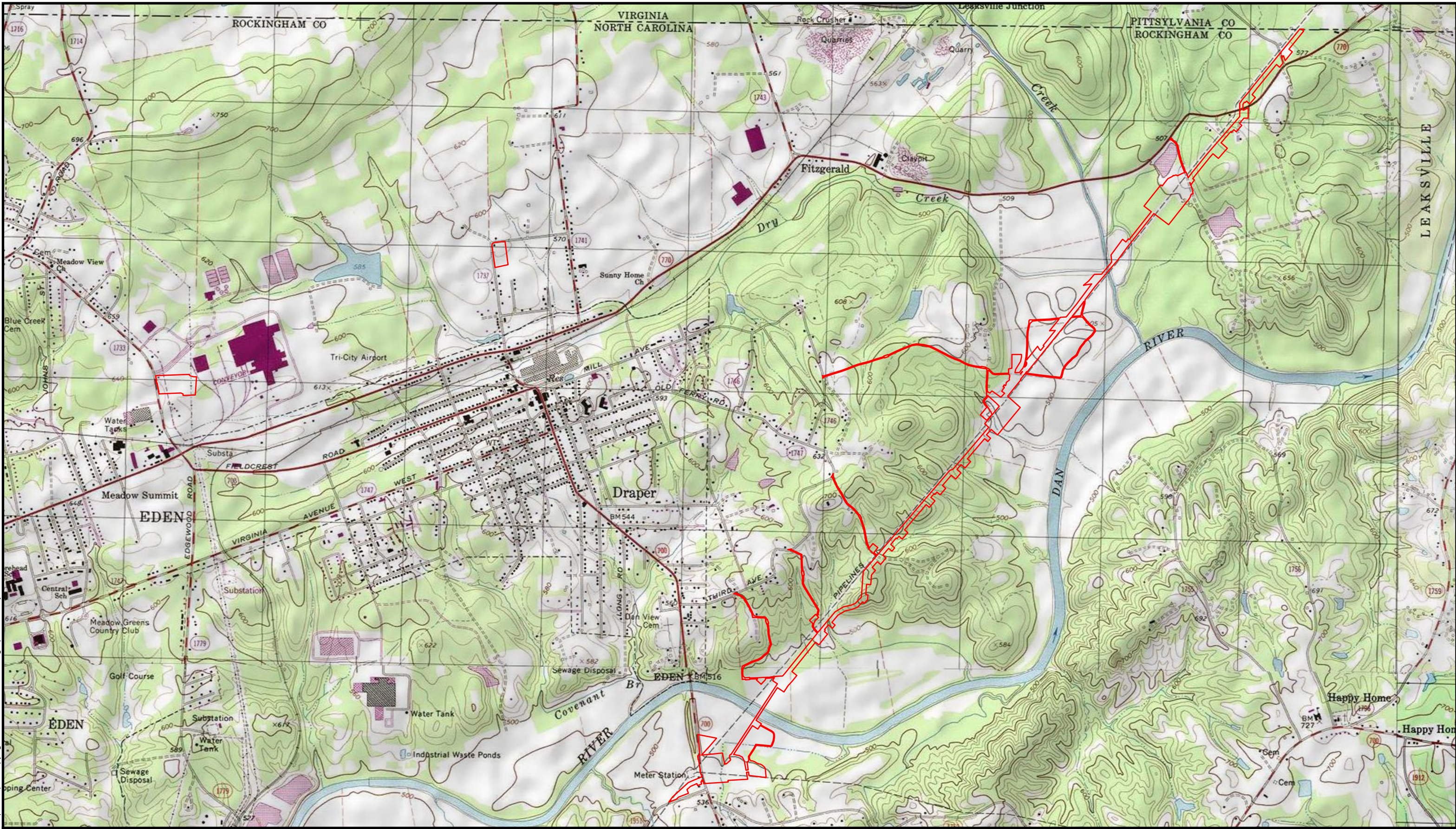


Figure A-1  
General Vicinity Map  
MVP Southgate Amendment Project  
Rockingham County, North Carolina



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Service Layer Credits: USA\_Topo\_Maps: Copyright © 2013 National Geographic Society, Inc.



Project Area

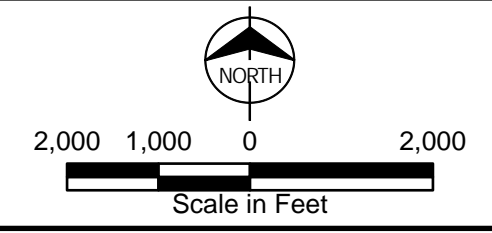
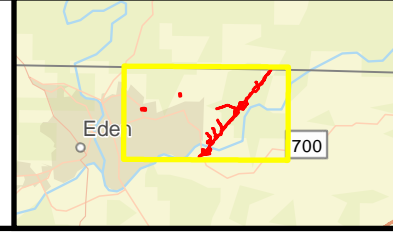
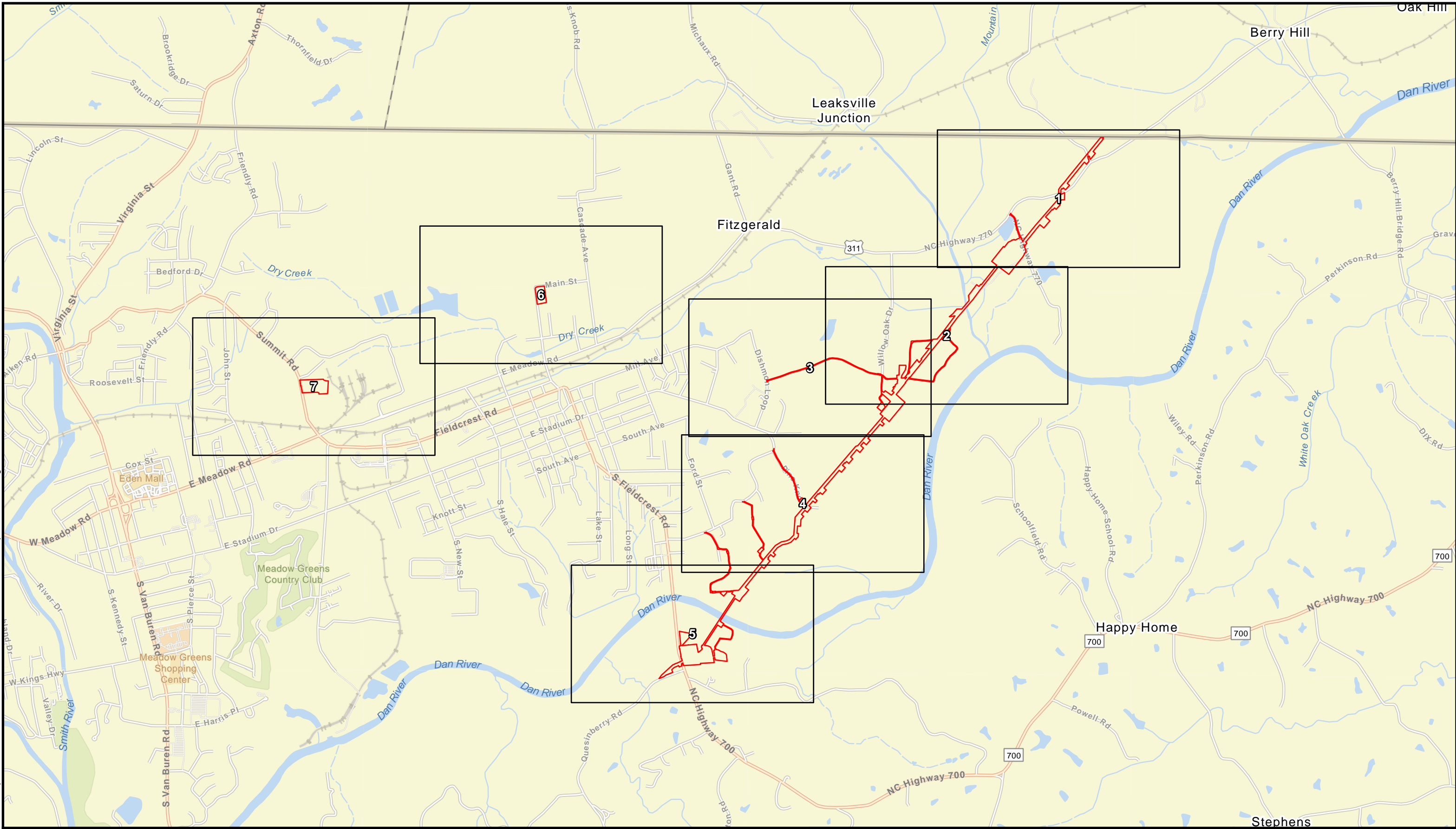


Figure A-2  
Overview Topographic Map  
MVP Southgate Amendment Project  
Rockingham County, North Carolina



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- Project Area
- Grid Index (1in=500ft)

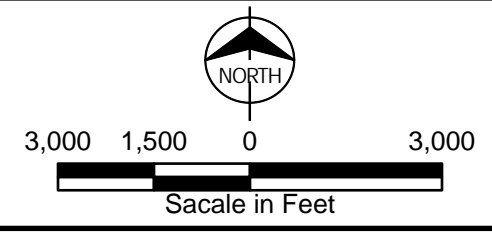
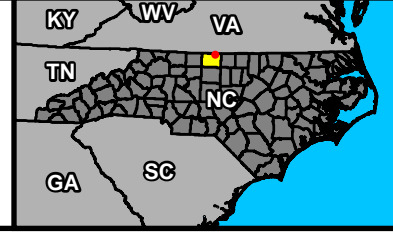


Figure A-3  
SSURGO Soils Map  
MVP Southgate Amendment Project  
Rockingham County, North Carolina



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Project Area  
**SSURGO Soil Map Unit**  
 Non-Hydric

**Mapunit Symbol - Mapunit Name**  
 BaB-Banister loam, 0 to 4 percent slopes, rarely flooded  
 CmB-Clover sandy loam, 2 to 8 percent slopes  
 CmD-Clover sandy loam, 8 to 15 percent slopes  
 CnB2-Clover sandy clay loam, 2 to 8 percent slopes, moderately eroded  
 CnE2-Clover sandy clay loam, 15 to 25 percent slopes, moderately eroded  
 W-Water

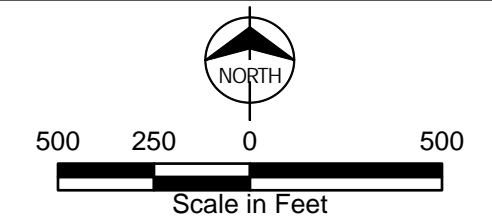
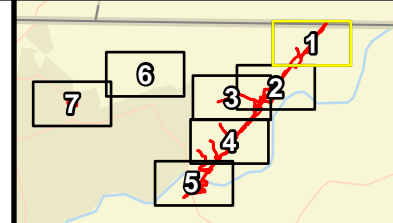


Figure A-3  
 SSURGO Soils Map  
 MVP Southgate Amendment Project  
 Rockingham County, North Carolina  
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- Project Area
- SSURGO Soil Map Unit**
- Non-Hydric

Mapunit Symbol - Mapunit Name
BaB-Banister loam, 0 to 4 percent slopes, rarely flooded
CmB-Clover sandy loam, 2 to 8 percent slopes
CmD-Clover sandy loam, 8 to 15 percent slopes
CmE-Clover sandy loam, 15 to 25 percent slopes
DaA-Dan River loam, 0 to 2 percent slopes, frequently flooded
WhB-Wickham sandy loam, mesic, 1 to 4 percent slopes, rarely flooded

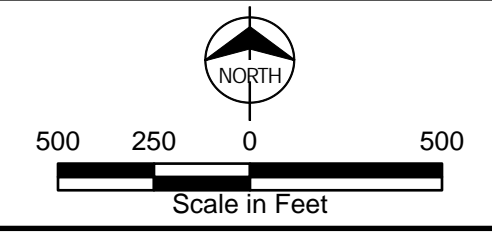
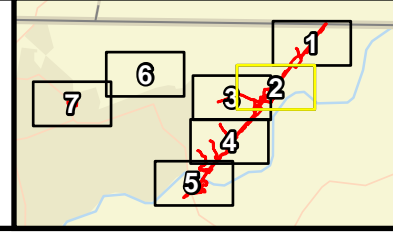
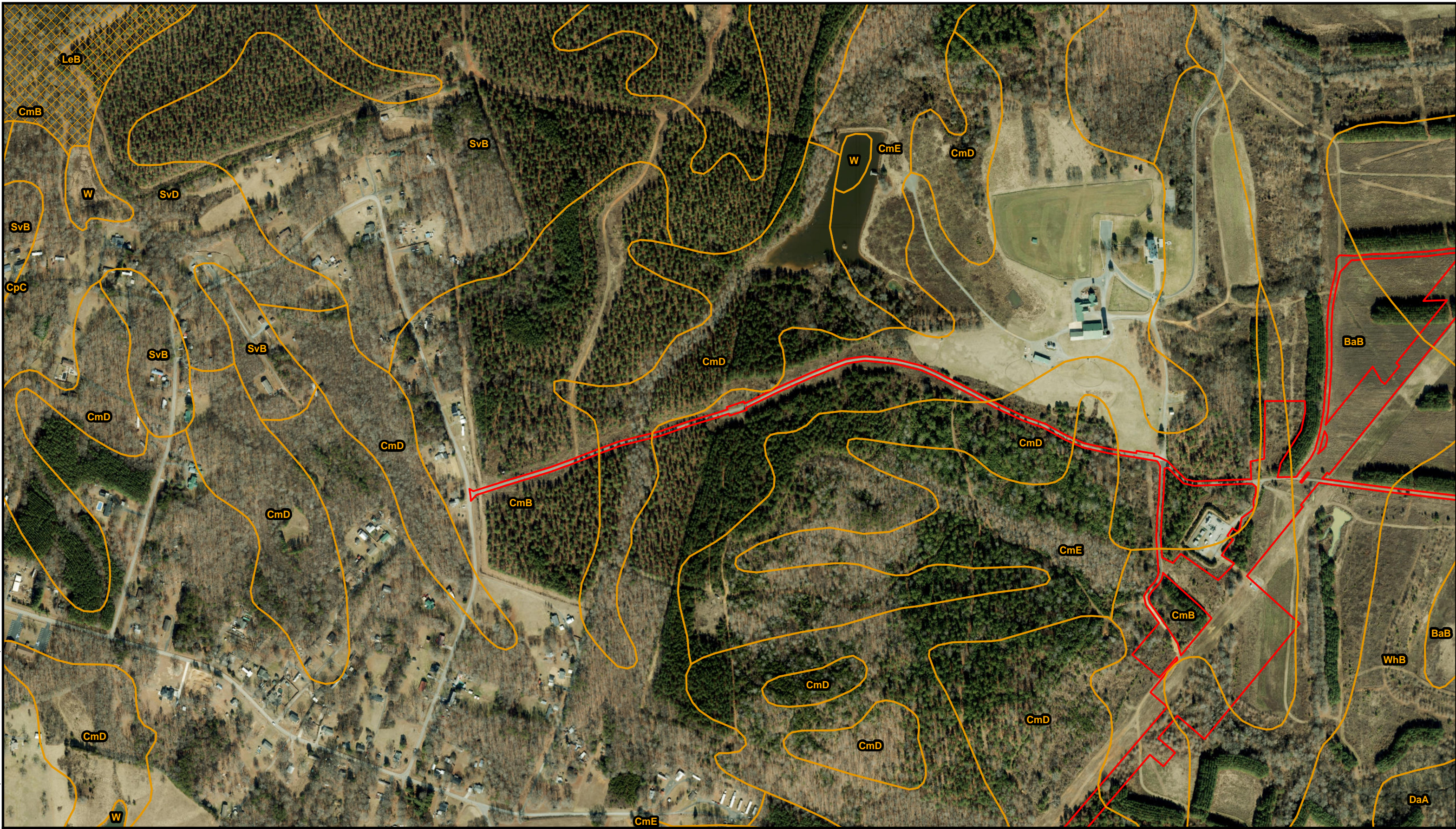


Figure A-3  
 SSURGO Soils Map  
 MVP Southgate Amendment Project  
 Rockingham County, North Carolina  
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- Project Area
- SSURGO Soil Map Unit**
- Non-Hydric
- Hydric

Mapunit Symbol - Mapunit Name	
BaB-Banister loam, 0 to 4 percent slopes, rarely flooded	
CmB-Clover sandy loam, 2 to 8 percent slopes	
CmD-Clover sandy loam, 8 to 15 percent slopes	
CmE-Clover sandy loam, 15 to 25 percent slopes	
WhB-Wickham sandy loam, mesic, 1 to 4 percent slopes, rarely flooded	

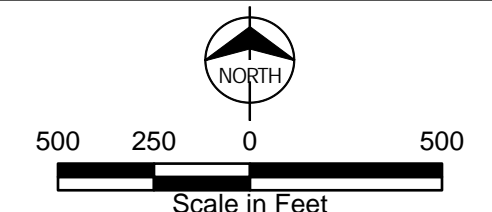
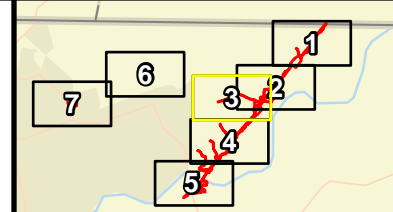
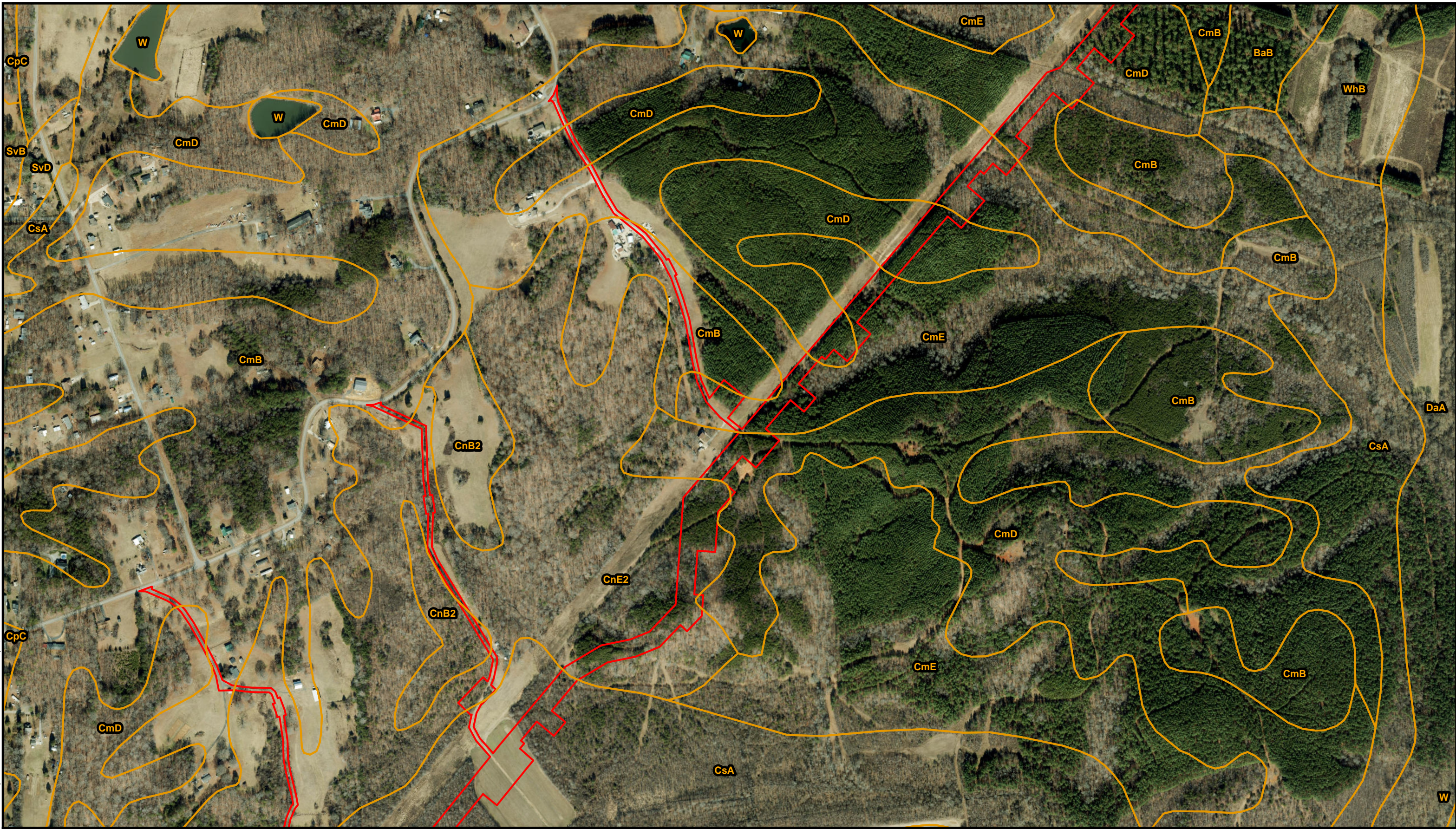


Figure A-3  
 SSURGO Soils Map  
 MVP Southgate Amendment Project  
 Rockingham County, North Carolina  
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**Project Area**  
 SSURGO Soil Map Unit  
 Non-Hydric

**Mapunit Symbol - Mapunit Name**  
 CmB-Clover sandy loam, 2 to 8 percent slopes  
 CmD-Clover sandy loam, 8 to 15 percent slopes  
 CmE-Clover sandy loam, 15 to 25 percent slopes  
 CnB2-Clover sandy clay loam, 2 to 8 percent slopes, moderately eroded  
 CnE2-Clover sandy clay loam, 15 to 25 percent slopes, moderately eroded  
 CsA-Codorus loam, 0 to 2 percent slopes, frequently flooded

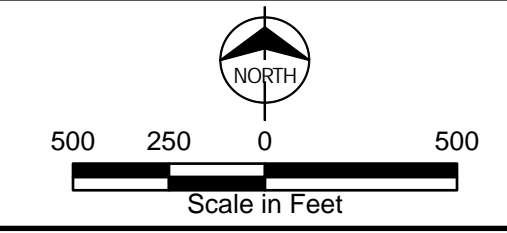
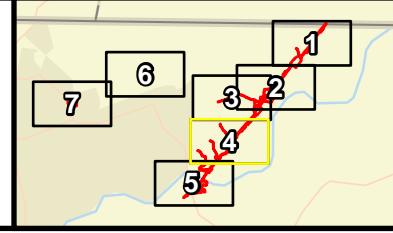


Figure A-3  
 SSURGO Soils Map  
 MVP Southgate Amendment Project  
 Rockingham County, North Carolina  
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- Project Area
- SSURGO Soil Map Unit**
- Non-Hydric

Mapunit Symbol - Mapunit Name	
BaB	Banister loam, 0 to 4 percent slopes, rarely flooded
CmD	Clover sandy loam, 8 to 15 percent slopes
CnE2	Clover sandy clay loam, 15 to 25 percent slopes, moderately eroded
CsA	Codus loam, 0 to 2 percent slopes, frequently flooded
DaA	Dan River loam, 0 to 2 percent slopes, frequently flooded
W	Water
WhB	Wickham sandy loam, mesic, 1 to 4 percent slopes, rarely flooded

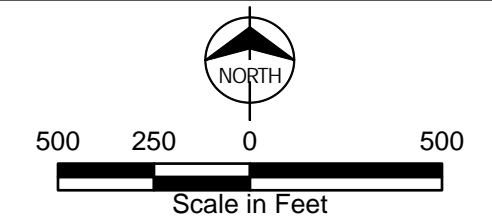
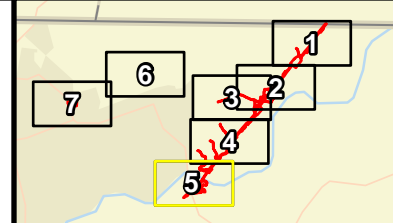





Figure A-3  
 SSURGO Soils Map  
 MVP Southgate Amendment Project  
 Rockingham County, North Carolina  
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	Project Area
<b>SSURGO Soil Map Unit</b>	<b>Mapunit Symbol - Mapunit Name</b>
	Non-Hydric
	Hydric
	LeB-Leaksville silt loam, 0 to 4 percent slopes
	SpB-Spray loam, 0 to 5 percent slopes

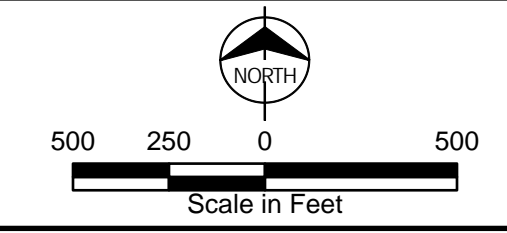
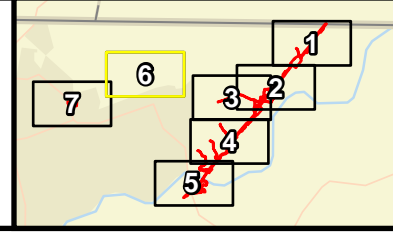


Figure A-3  
SSURGO Soils Map  
MVP Southgate Amendment Project  
Rockingham County, North Carolina  
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- Project Area
- Non-Hydric
- Hydric

**Mapunit Symbol - Mapunit Name**

LeB	Leaksville silt loam, 0 to 4 percent slopes
SpB	Spray loam, 0 to 5 percent slopes
Ud	Udorthents, loamy

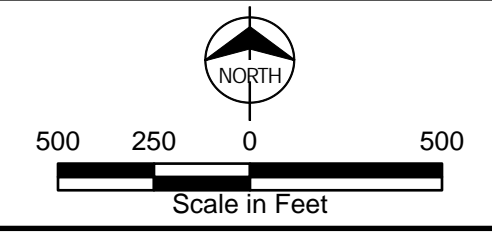
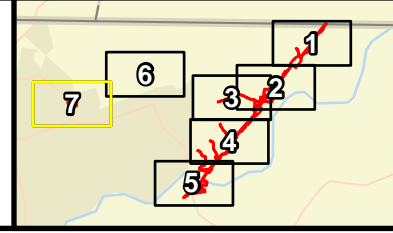
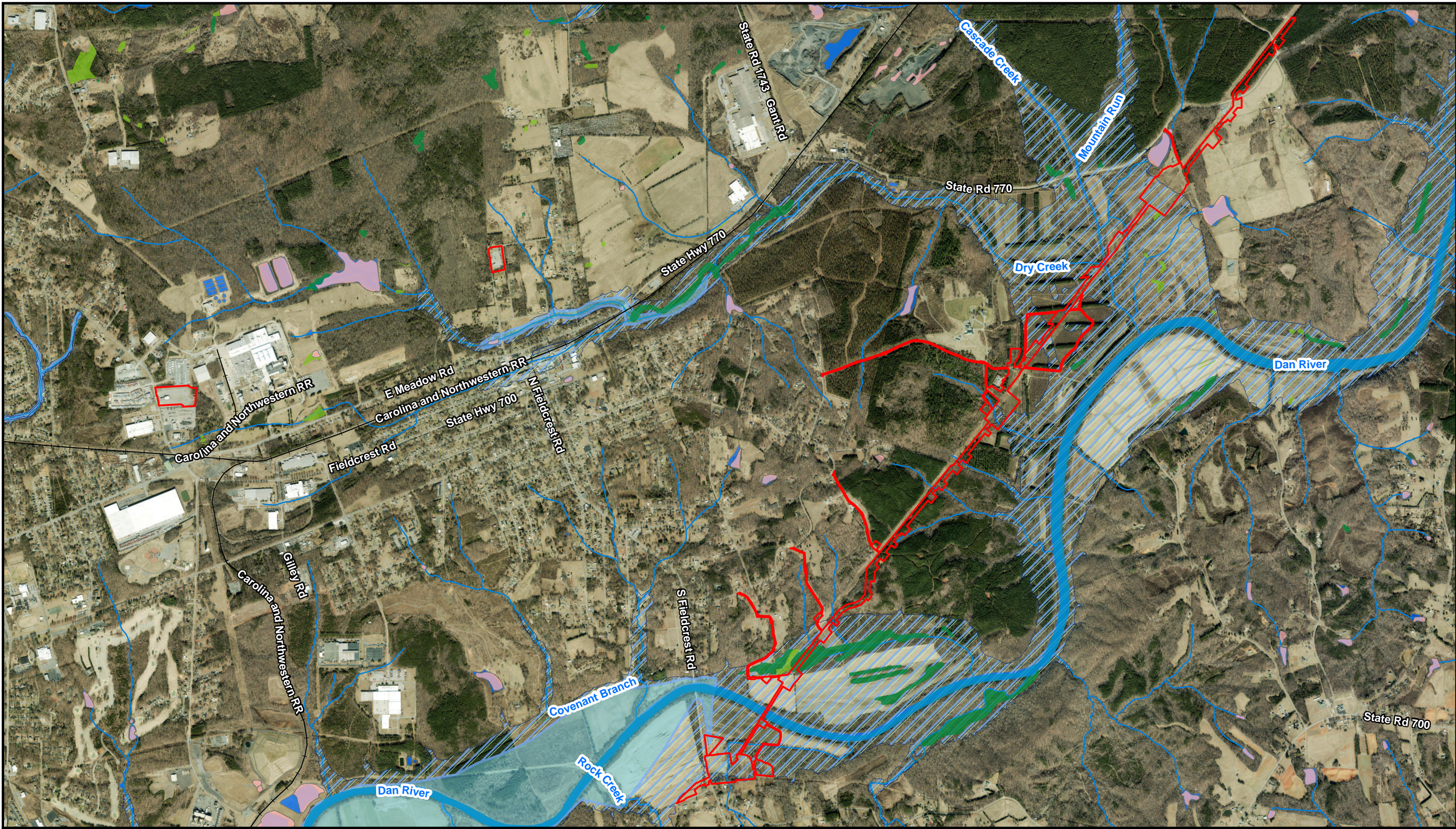


Figure A-3  
 SSURGO Soils Map  
 MVP Southgate Amendment Project  
 Rockingham County, North Carolina  
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- Project Area
- NHD Flowline
- NHD Area
- Floodplain
- Floodway

- NWI Wetland**
- Freshwater Emergent Wetland
  - Freshwater Forested/Shrub Wetland
  - Freshwater Pond
  - Riverine

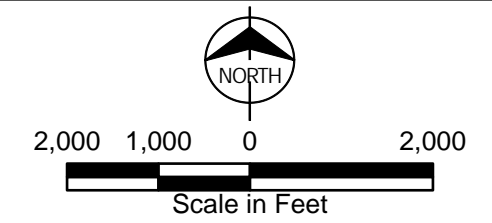
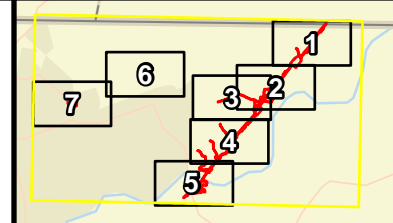
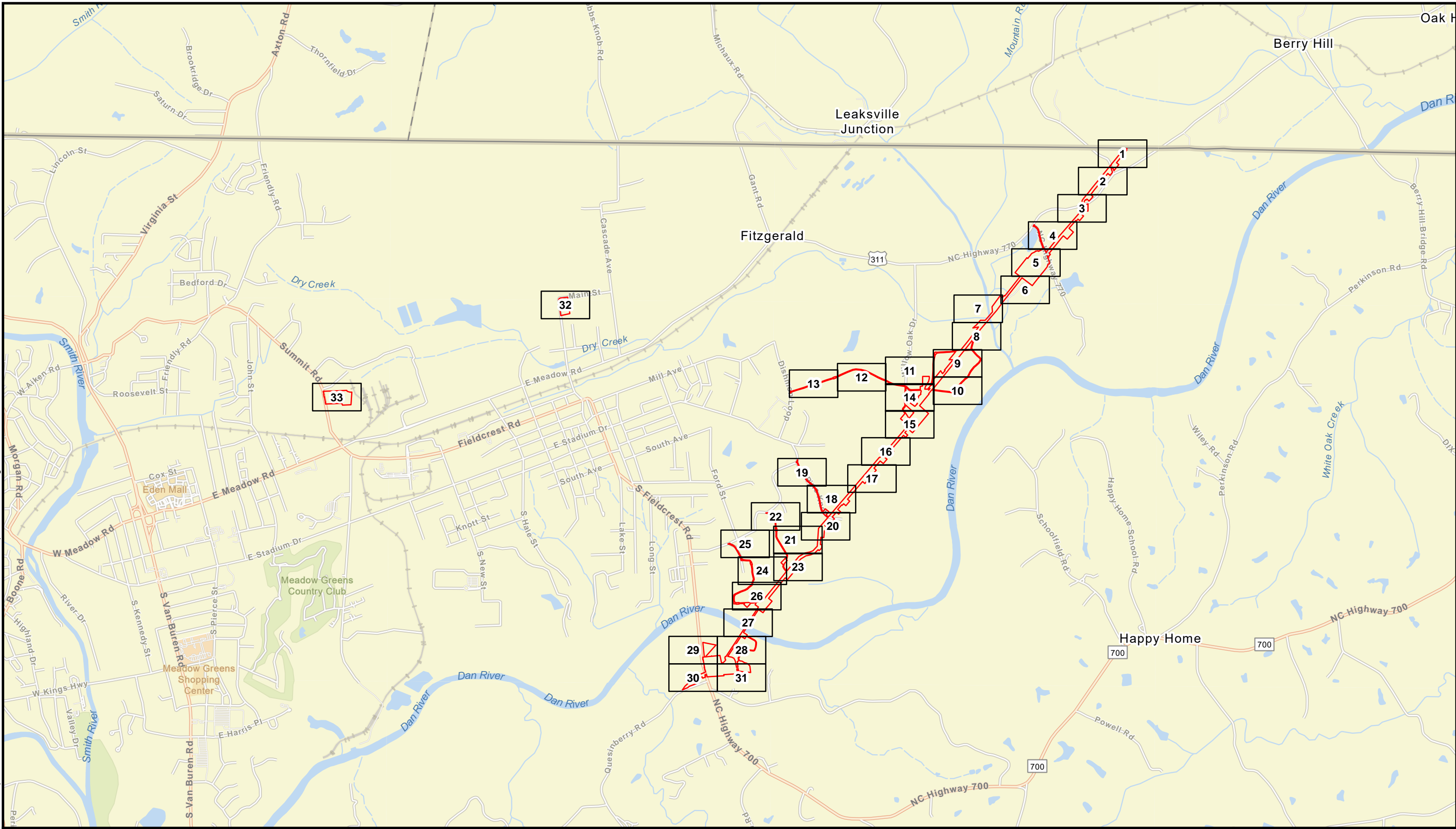




Figure A-4  
 NWI/NHD/FEMA Map  
 MVP Southgate Amendment Project  
 Rockingham County, North Carolina



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Service Layer Credits: World StreetMap: State of North Carolina DOT, Esri, TomTom, Garmin, SafeGraph, Geotitles, Inc, METINASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS



-  Project Area
-  Grid Index (1in=100ft)

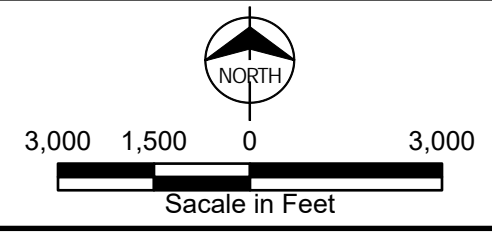
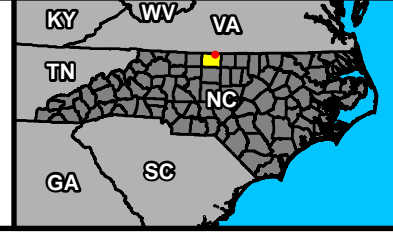
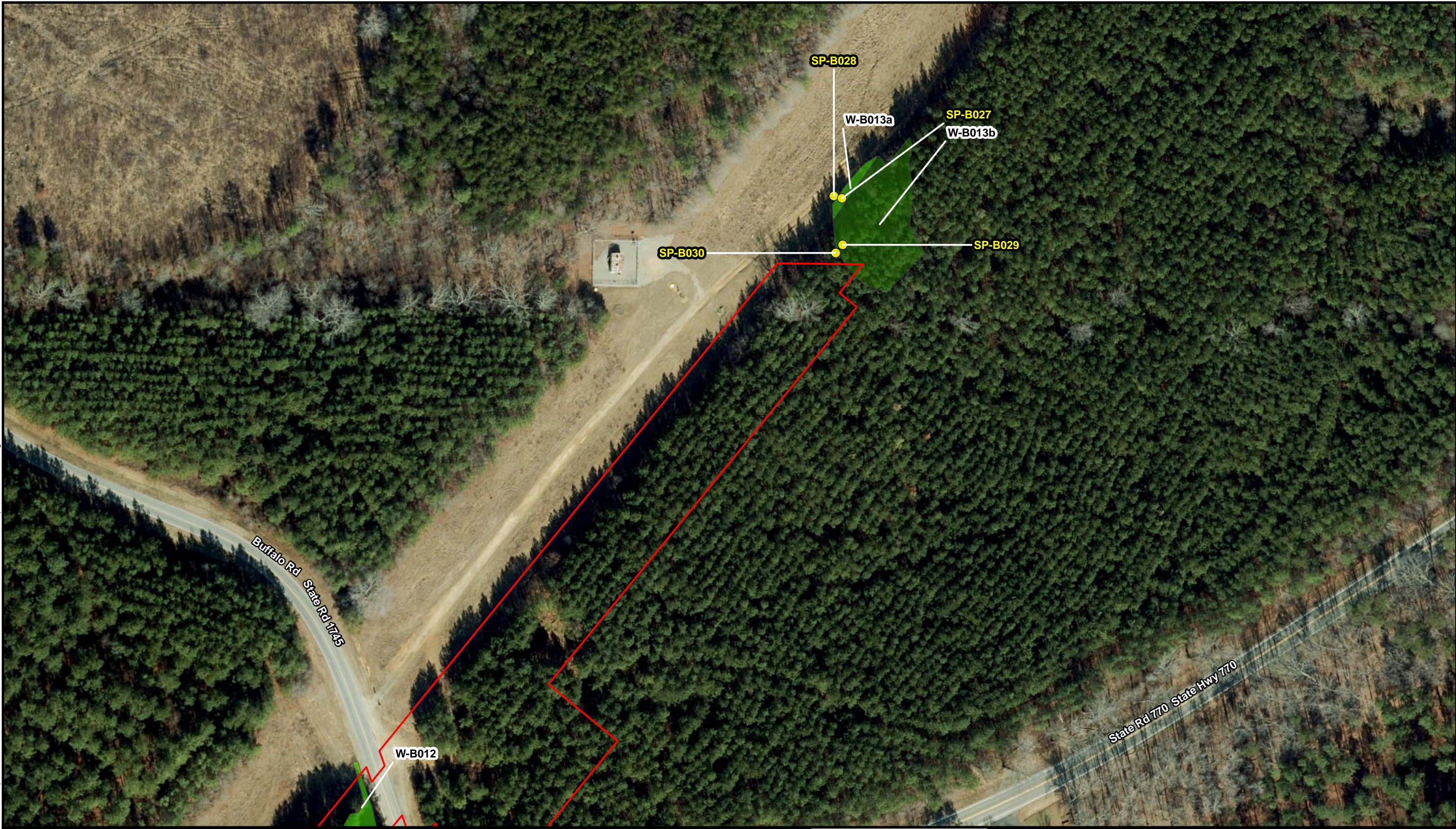


Figure A-5  
Wetlands and Other  
Aquatic Resources  
MVP Southgate Amendment Project  
Rockingham County, North Carolina





Project Area	<b>Wetland (W)</b>
Sample Plot (SP)	PEM
	PFO

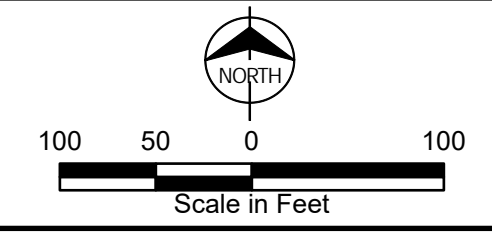
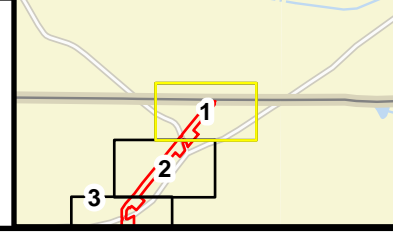
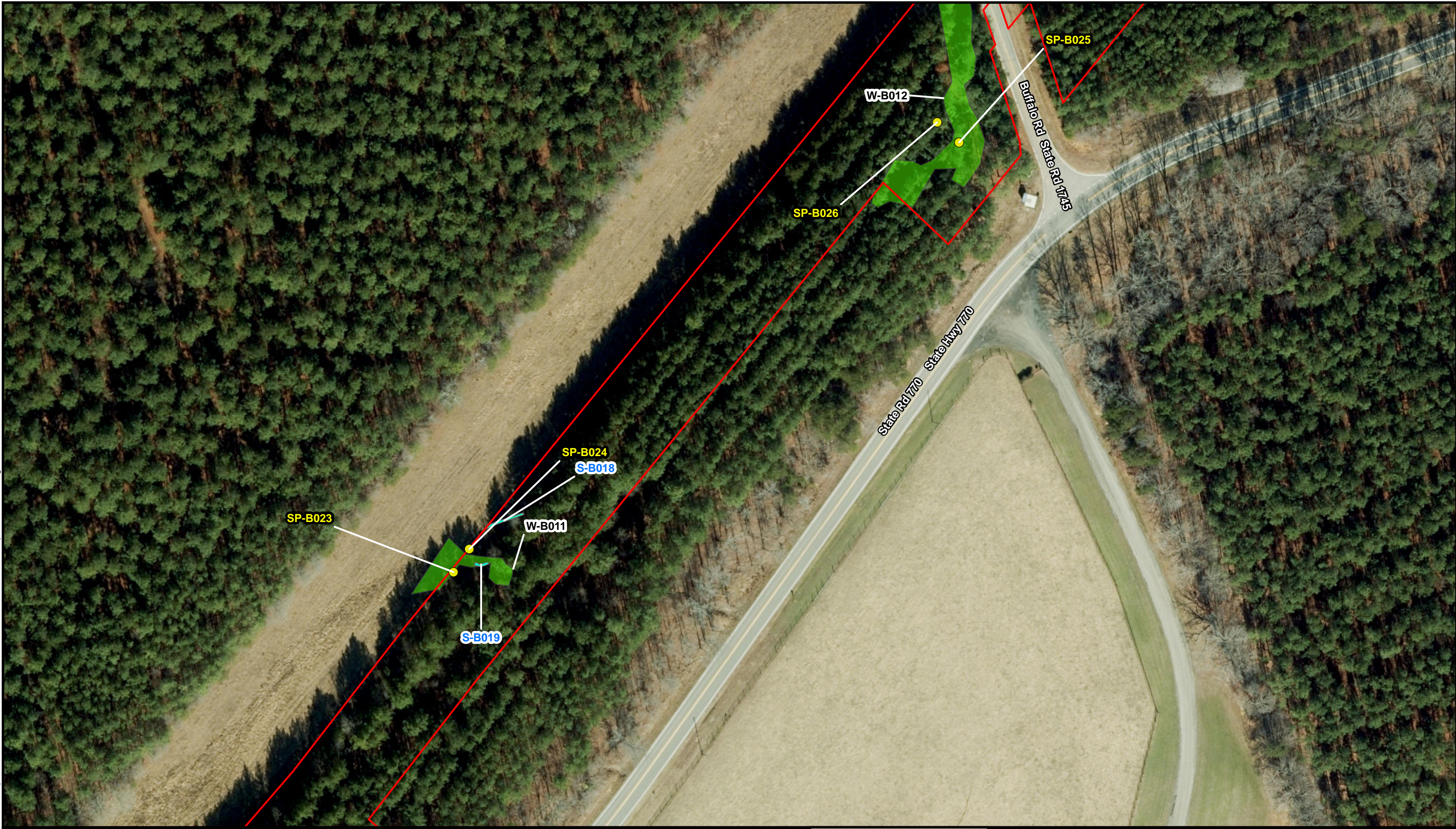


Figure A-5  
Wetlands and Other  
Aquatic Resources Map  
MVP Southgate Amendment Project  
Rockingham County, North Carolina  
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- |                  |                   |                    |
|------------------|-------------------|--------------------|
| Project Area     | <b>Stream (S)</b> | <b>Wetland (W)</b> |
| Sample Plot (SP) | Ephemeral         | PEM                |

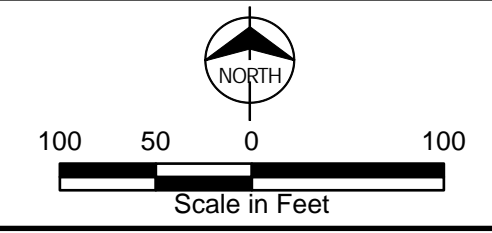
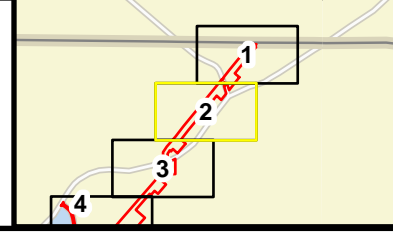


Figure A-5  
Wetlands and Other  
Aquatic Resources Map  
MVP Southgate Amendment Project  
Rockingham County, North Carolina  
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 Project Area

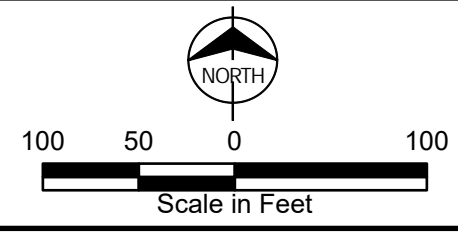
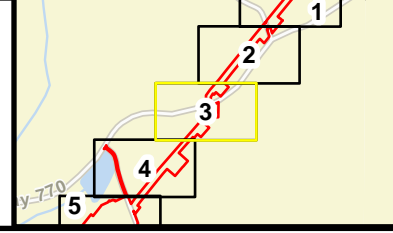


Figure A-5  
Wetlands and Other  
Aquatic Resources Map  
MVP Southgate Amendment Project  
Rockingham County, North Carolina  
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- |                  |                   |                    |
|------------------|-------------------|--------------------|
| Project Area     | <b>Stream (S)</b> | <b>Wetland (W)</b> |
| Sample Plot (SP) | Ephemeral         | PEM                |
|                  | Intermittent      | PFO                |

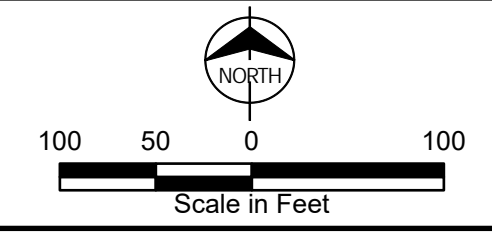
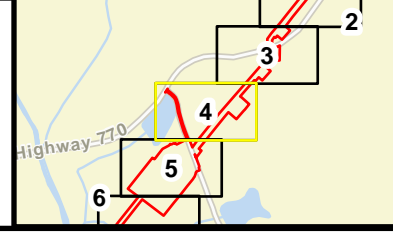
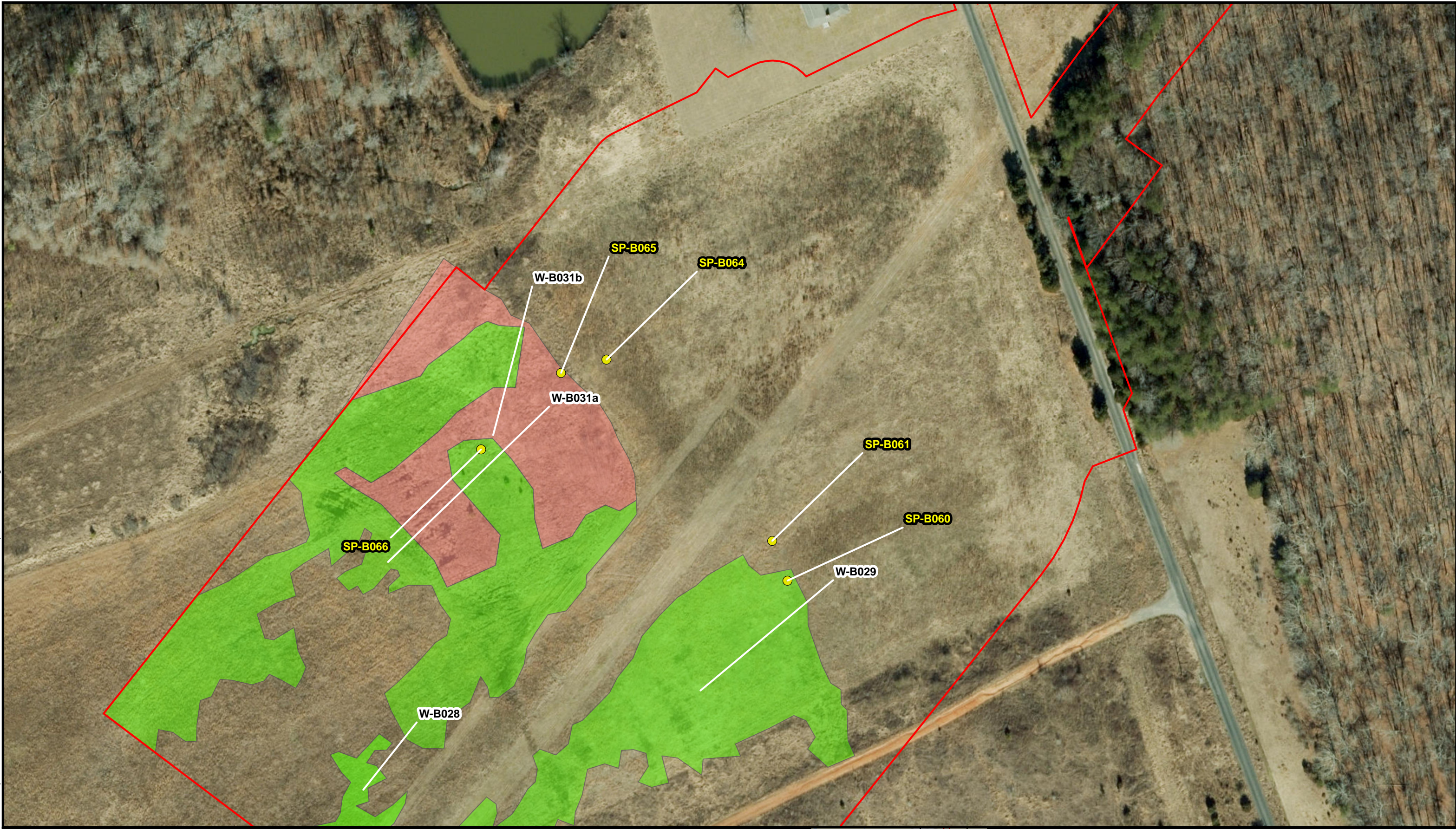


Figure A-5  
Wetlands and Other  
Aquatic Resources Map  
MVP Southgate Amendment Project  
Rockingham County, North Carolina  
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- Project Area
- Sample Plot (SP)
- Wetland (W)**
- PEM
- PSS

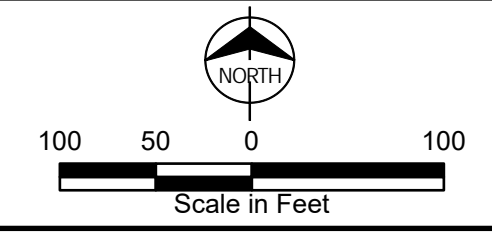
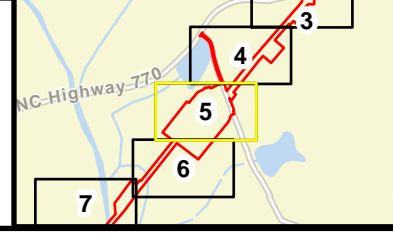
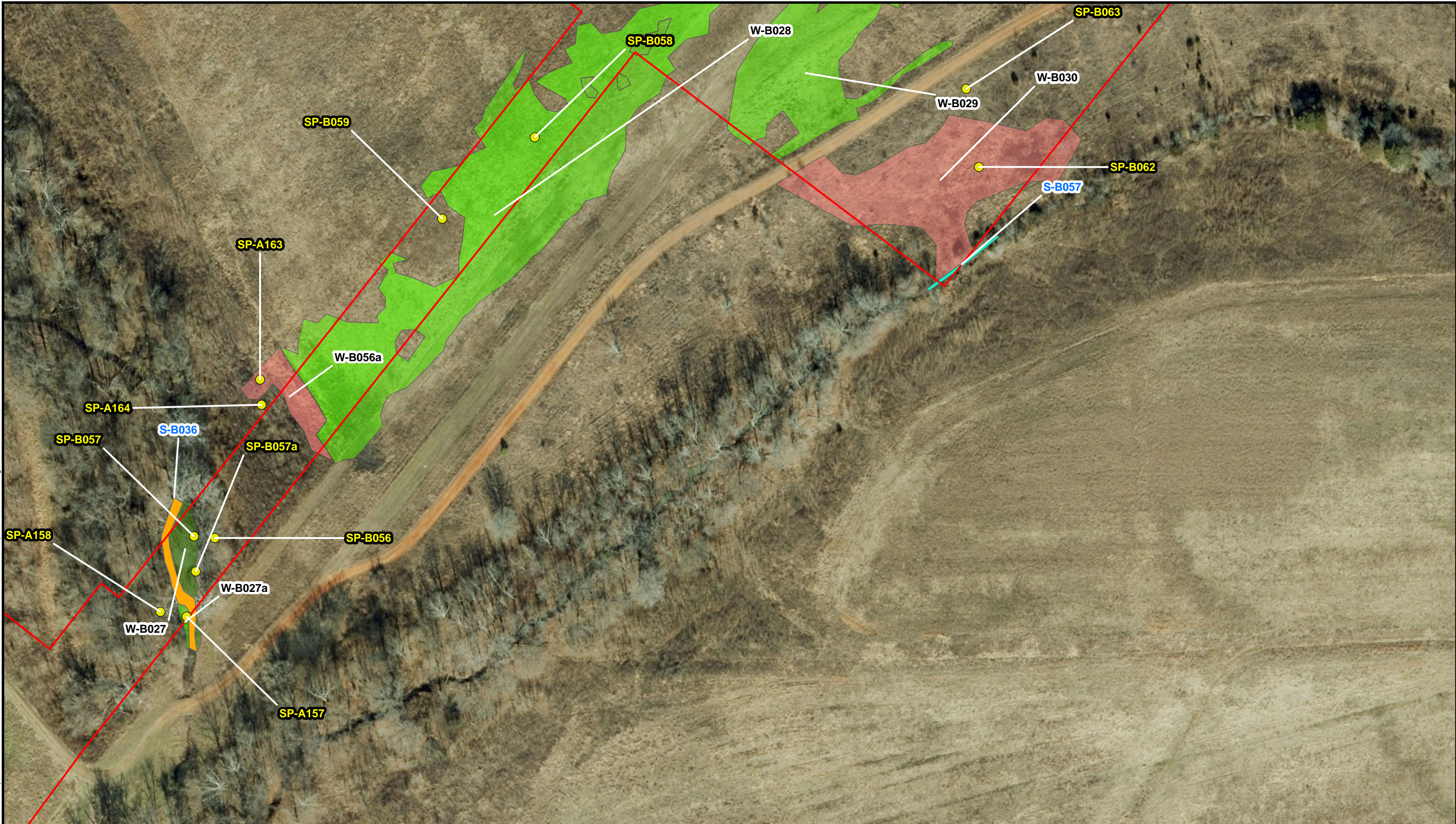


Figure A-5  
Wetlands and Other  
Aquatic Resources Map  
MVP Southgate Amendment Project  
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Project Area	<b>Stream (S)</b>	<b>Wetland (W)</b>
Sample Plot (SP)	Ephemeral	PEM
	Intermittent	PFO
		PSS

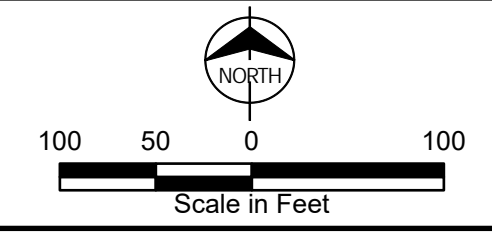
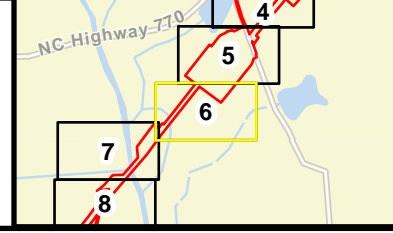


Figure A-5  
 Wetlands and Other  
 Aquatic Resources Map  
 MVP Southgate Amendment Project  
 Rockingham County, North Carolina  
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- Project Area
- Sample Plot (SP)
- Stream (S)**
- Perennial
- Wetland (W)**
- PEM

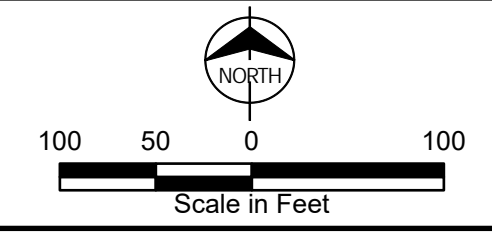
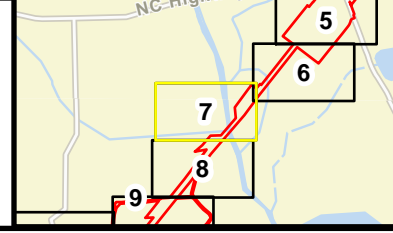




Figure A-5  
Wetlands and Other  
Aquatic Resources Map  
MVP Southgate Amendment Project  
Rockingham County, North Carolina  
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 Project Area  
**Wetland (W)**  
 PEM

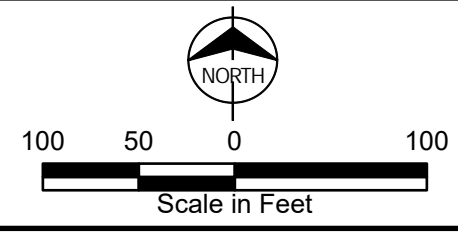
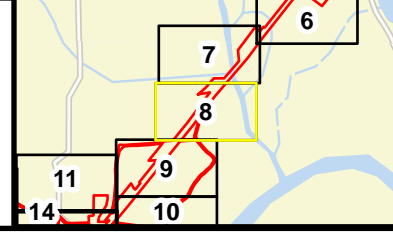




Figure A-5  
Wetlands and Other  
Aquatic Resources Map  
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-  Project Area
-  Sample Plot (SP)

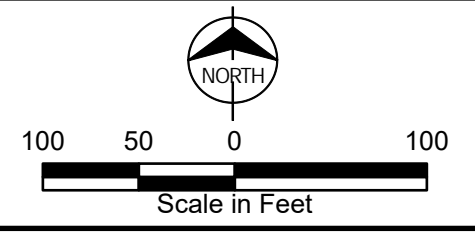
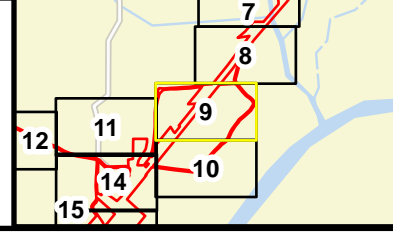




Figure A-5  
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-  Project Area
- Wetland (W)**
-  PEM

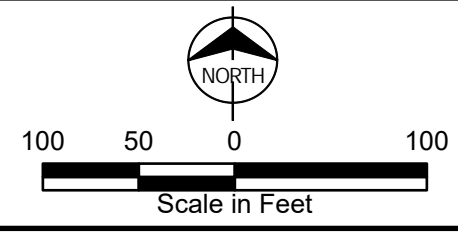
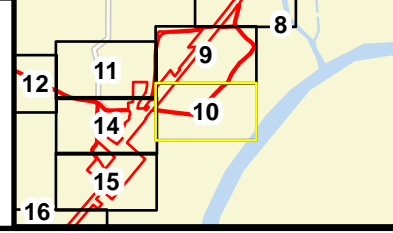
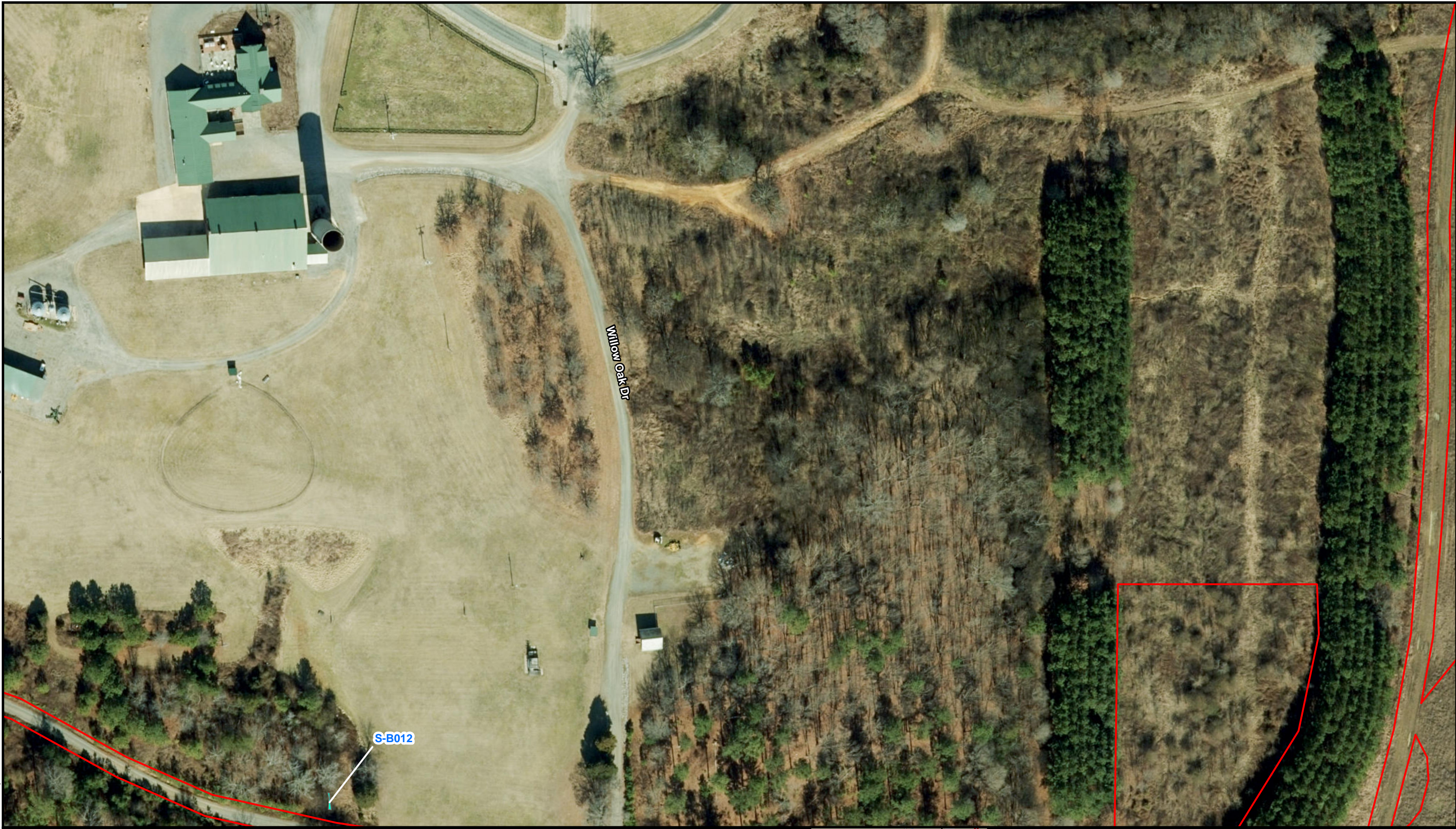




Figure A-5  
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Aquatic Resources Map  
MVP Southgate Amendment Project  
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-  Project Area
- Stream (S)**
-  Ephemeral

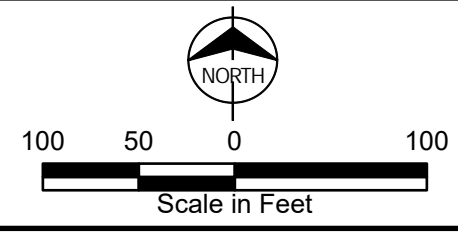
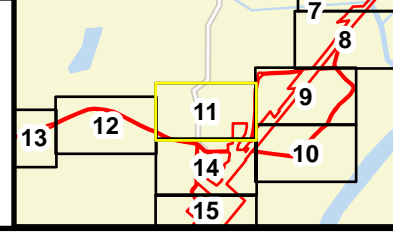


Figure A-5  
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 Project Area

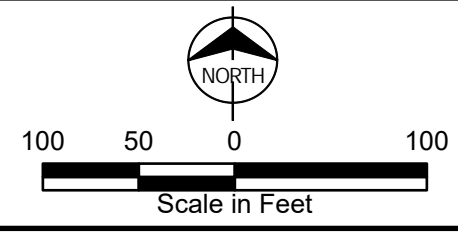
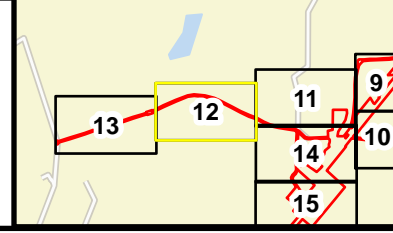


Figure A-5  
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Project Area	<b>Stream (S)</b>	<b>Wetland (W)</b>
Sample Plot (SP)	Intermittent	PEM

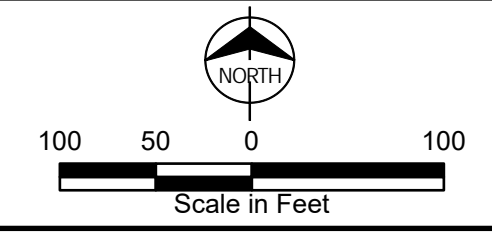
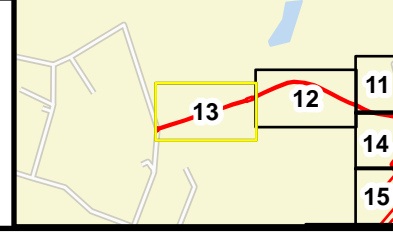


Figure A-5  
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Project Area	<b>Stream (S)</b>	<b>Wetland (W)</b>
Sample Plot (SP)	Ephemeral	PEM
	Intermittent	

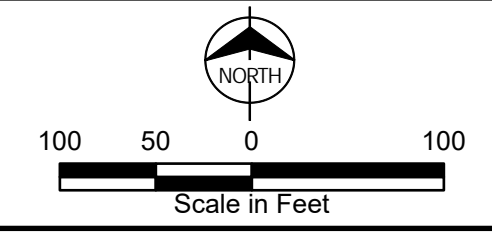
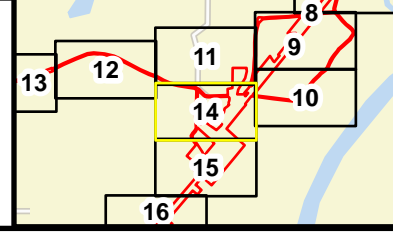


Figure A-5  
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Project Area	<b>Stream (S)</b>	<b>Wetland (W)</b>
Sample Plot (SP)	Ephemeral	PEM
	Intermittent	PFO

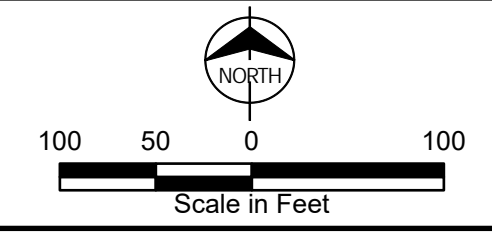
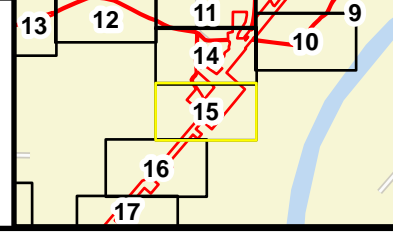
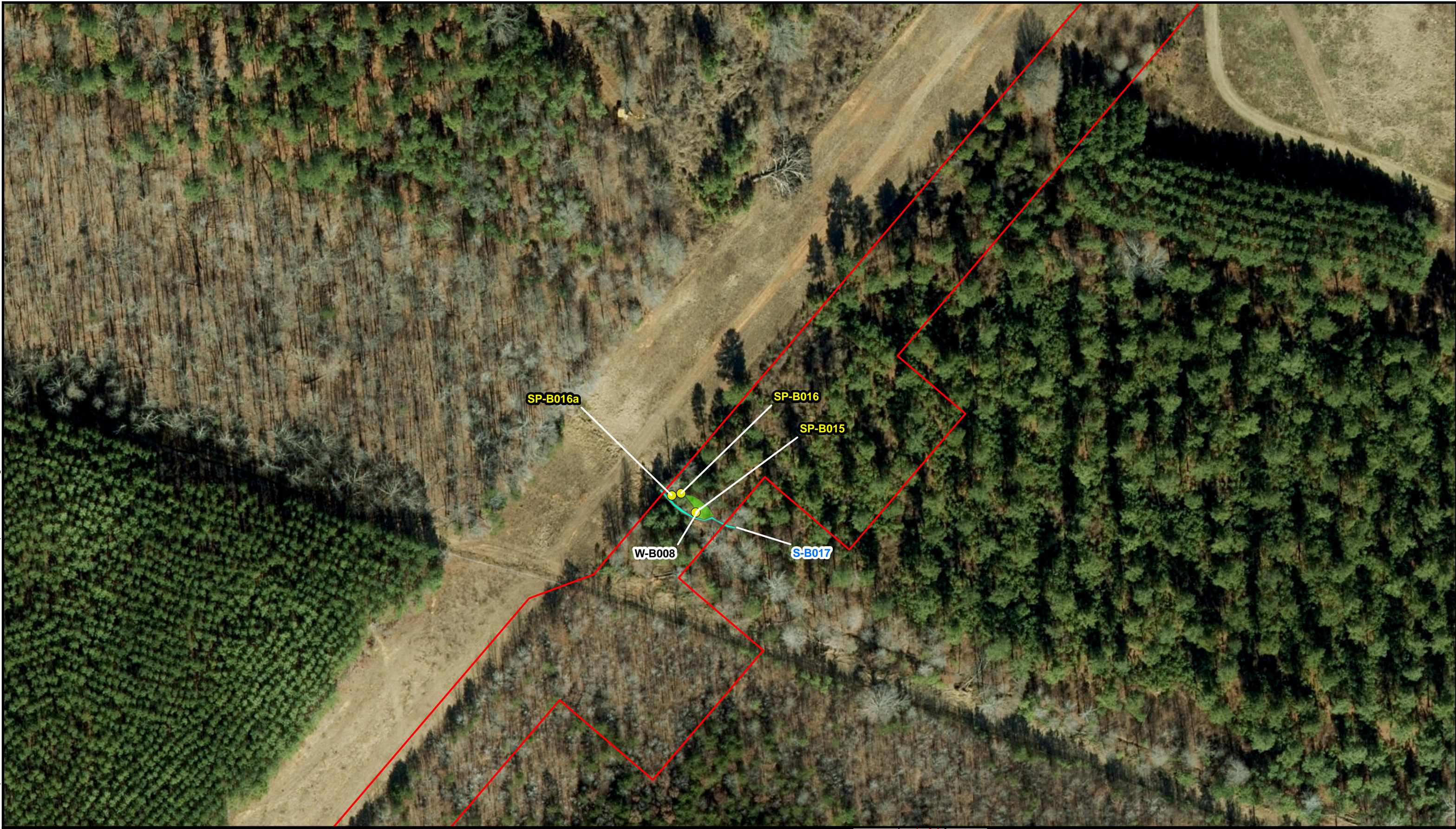


Figure A-5  
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- Project Area
- Sample Plot (SP)
- Stream (S)**
- Ephemeral
- Wetland (W)**
- PEM

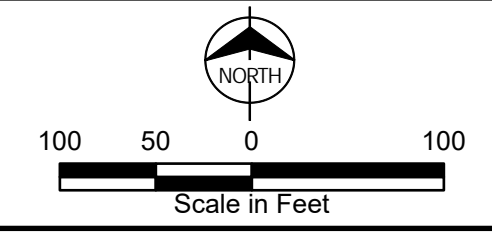
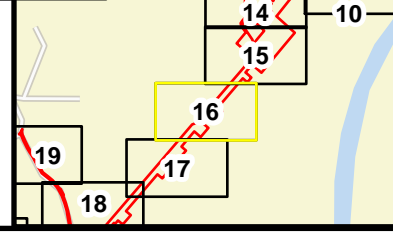




Figure A-5  
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-  Project Area
- Stream (S)**
-  Intermittent

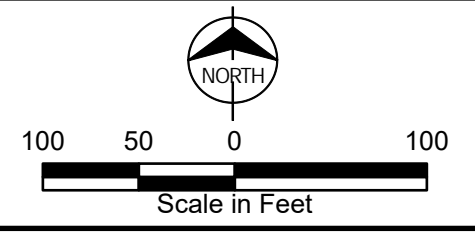
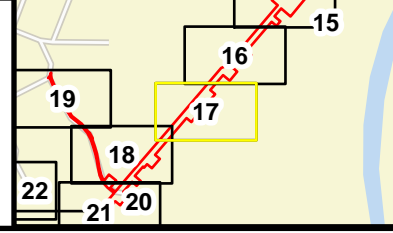


Figure A-5  
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- |                  |                   |                    |
|------------------|-------------------|--------------------|
| Project Area     | <b>Stream (S)</b> | <b>Wetland (W)</b> |
| Sample Plot (SP) | Ephemeral         | PEM                |
|                  |                   | PFO                |

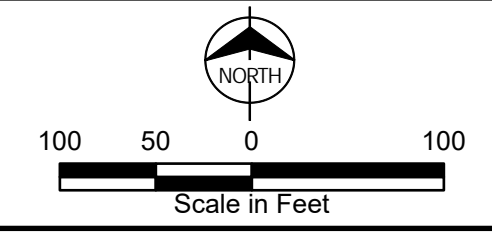
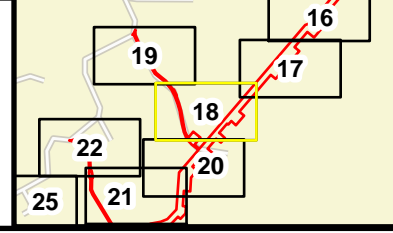


Figure A-5  
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 Project Area

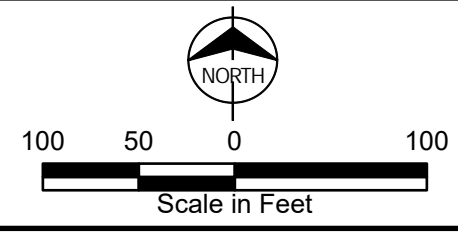
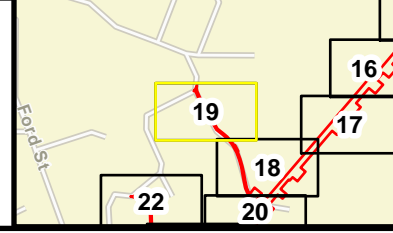





Figure A-5  
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-  Project Area
- Stream (S)**
-  Ephemeral
- Wetland (W)**
-  PFO

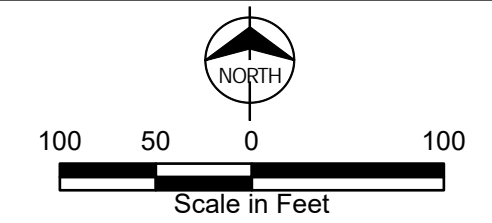
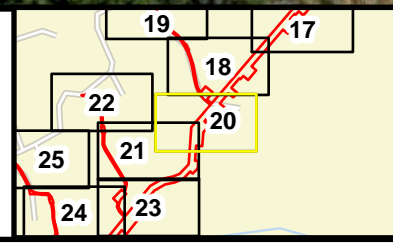




Figure A-5  
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-  Project Area
- Stream (S)**
-  Ephemeral

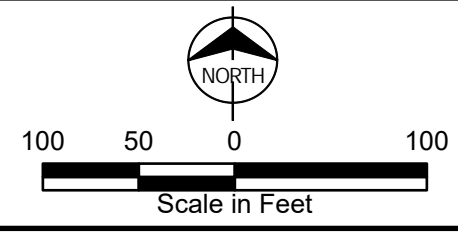
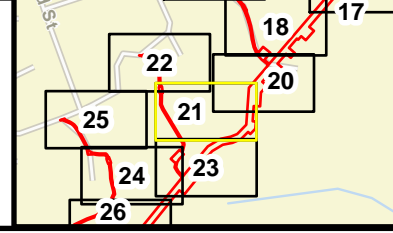


Figure A-5  
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 Project Area

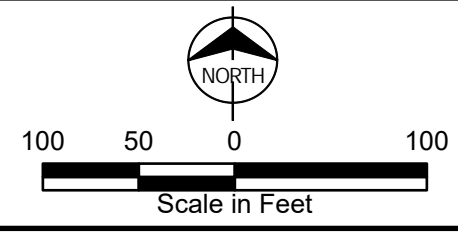
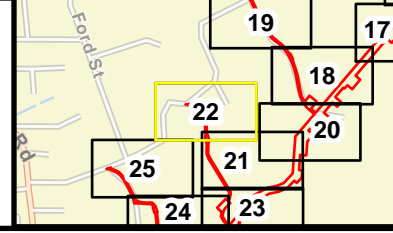
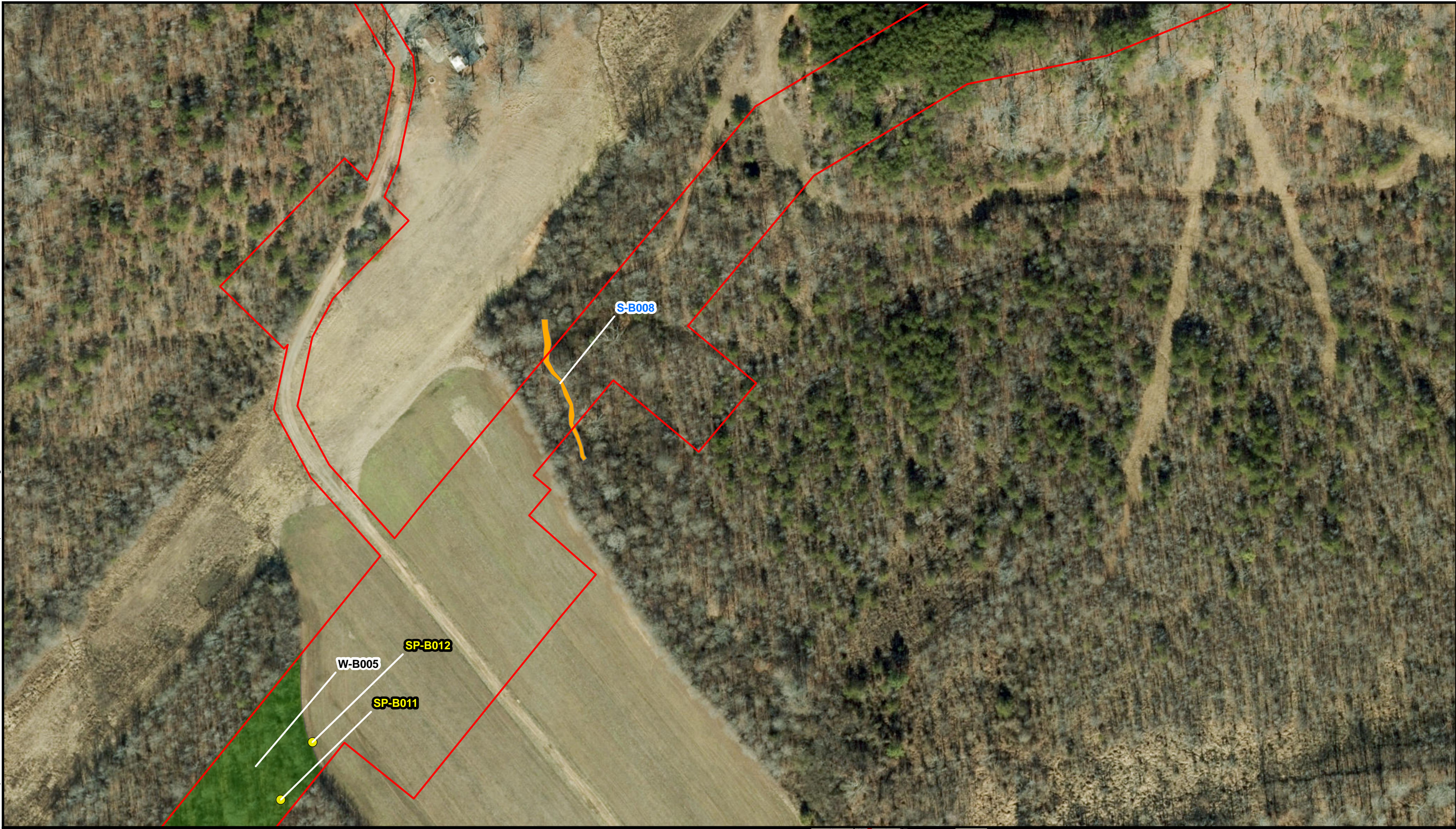


Figure A-5  
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- |                  |                   |                    |
|------------------|-------------------|--------------------|
| Project Area     | <b>Stream (S)</b> | <b>Wetland (W)</b> |
| Sample Plot (SP) | Intermittent      | PFO                |

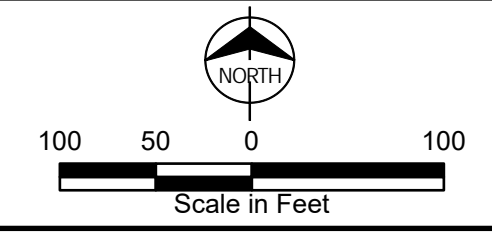
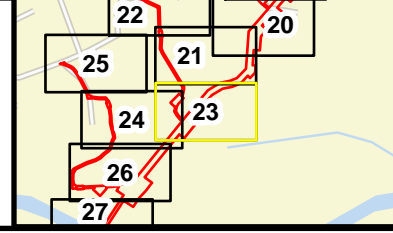


Figure A-5  
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- Project Area
- S Stream (S)
- W Wetland (W)
- Sample Plot (SP)
- Intermittent
- PFO

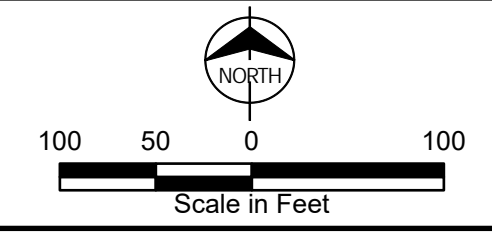
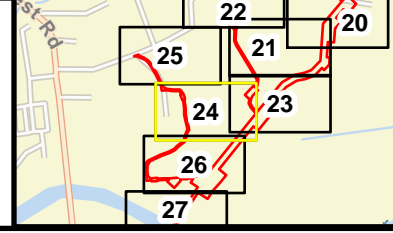


Figure A-5  
Wetlands and Other  
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 Project Area

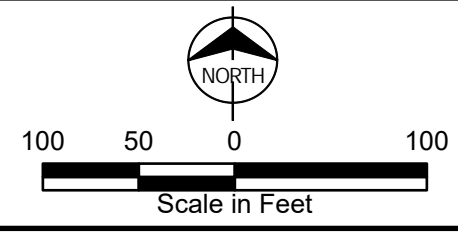
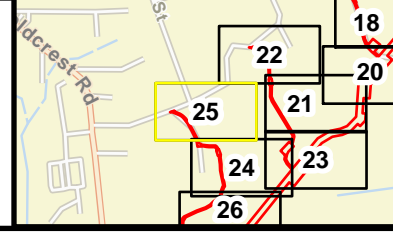




Figure A-5  
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 Project Area  
**Wetland (W)**  
 PFO

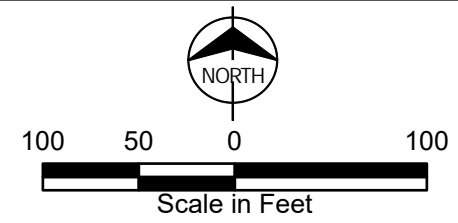
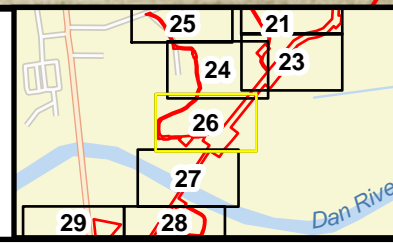




Figure A-5  
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-  Project Area
- Stream (S)**
-  Perennial

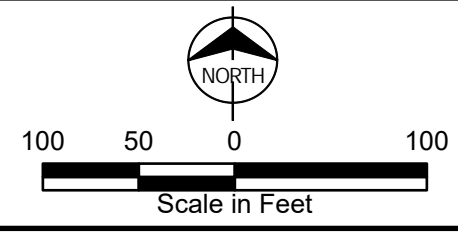
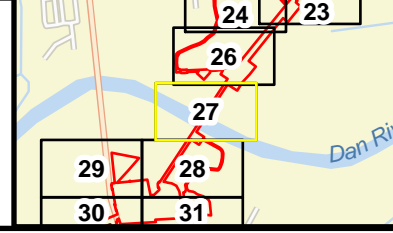
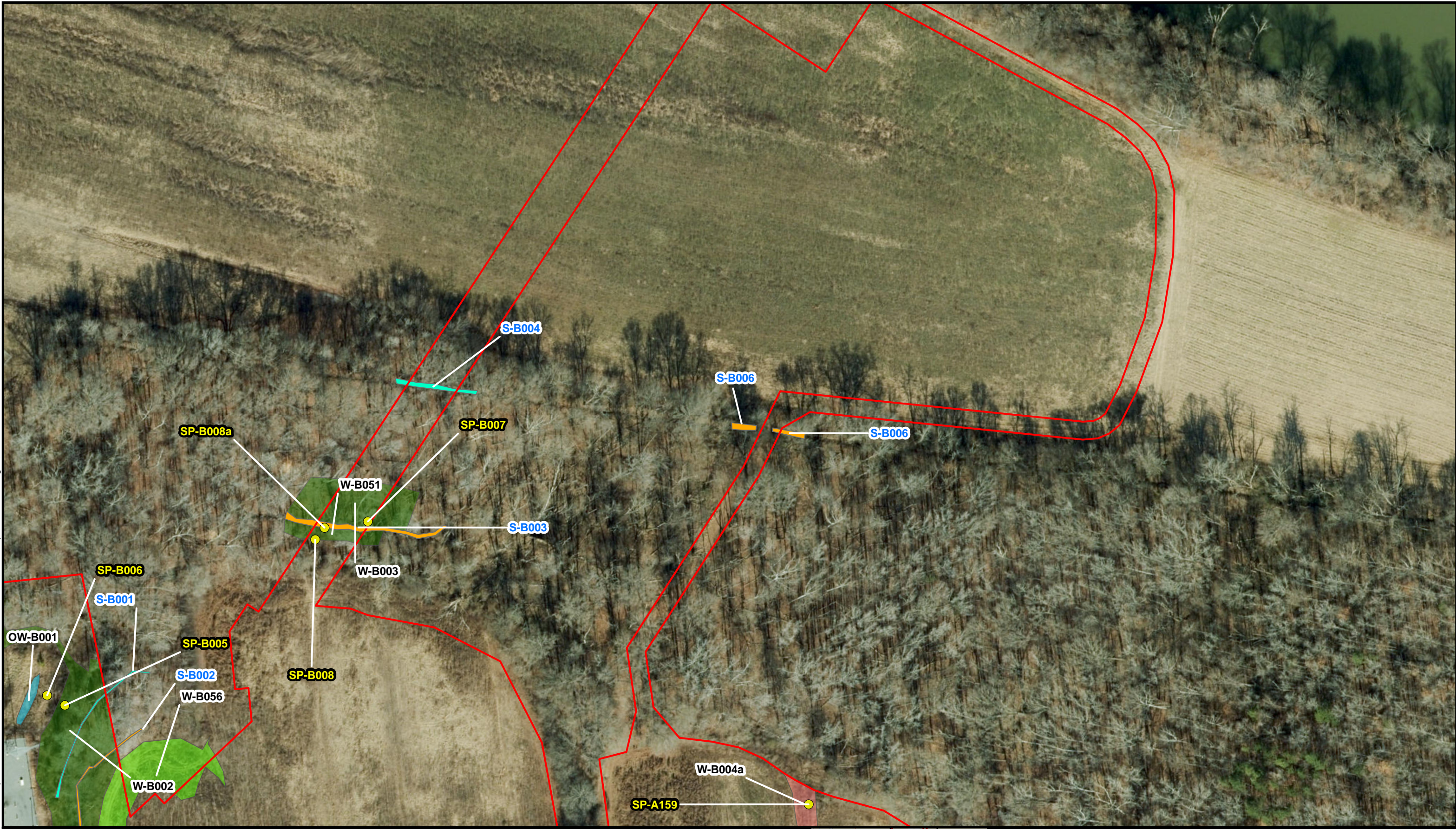


Figure A-5  
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Project Area	Intermittent	PSS
Sample Plot (SP)	<b>Wetland (W)</b>	PUB
<b>Stream (S)</b>	PEM	
Ephemeral	PFO	

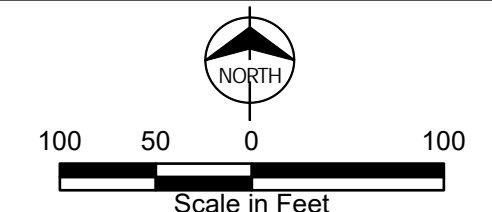
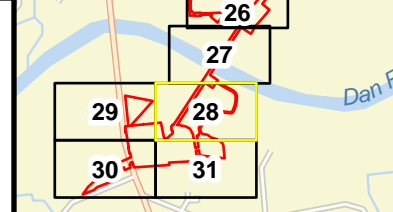


Figure A-5  
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- Project Area
- Sample Plot (SP)
- Wetland (W)**
- PEM
- PFO

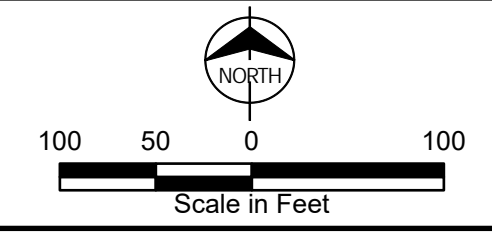
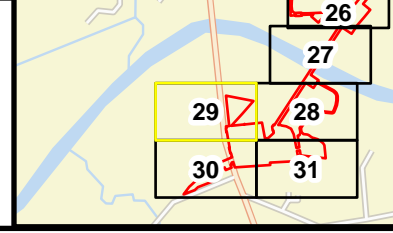


Figure A-5  
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- Project Area
- Wetland (W)**
- PFO

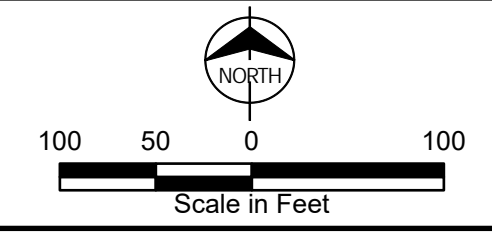
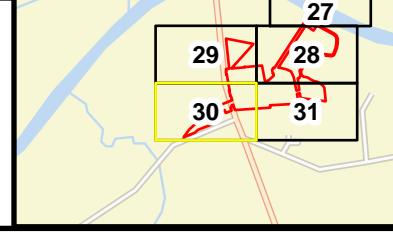


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Project Area	<b>Stream (S)</b>	PFO
Sample Plot (SP)	Intermittent	PSS
	<b>Wetland (W)</b>	
	PEM	

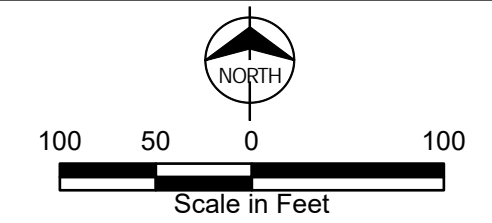
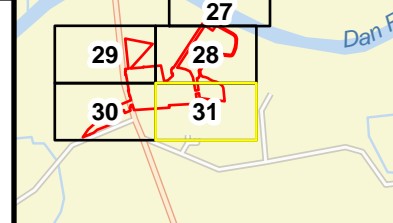


Figure A-5  
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 Project Area

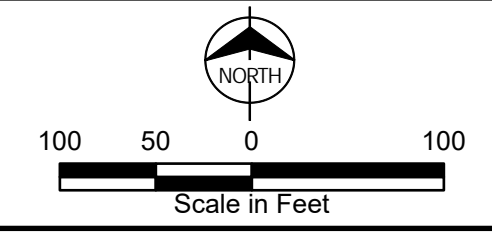
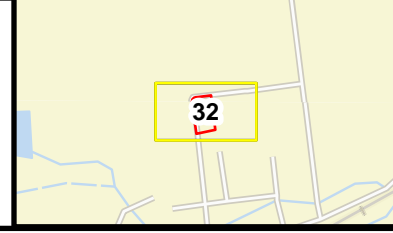


Figure A-5  
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 Project Area

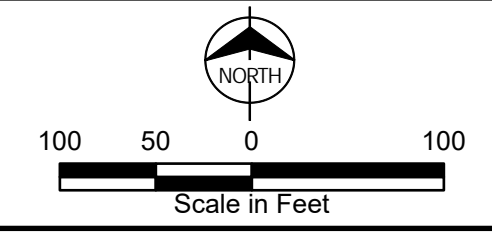
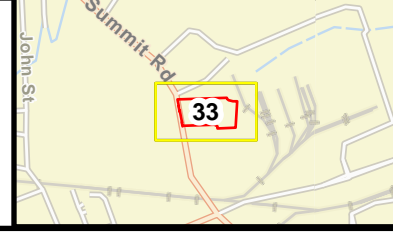


Figure A-5  
Wetlands and Other  
Aquatic Resources Map  
MVP Southgate Amendment Project  
Rockingham County, North Carolina  
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**Appendix B – Routine Wetland Determination  
Data Forms: Eastern Mountains  
and Piedmont Region**

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**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project City/County: Rockingham County Sampling Date: 2024-09-03  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-A157  
 Investigator(s): WJ, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): Convex Slope (%): 0-2  
 Subregion (LRR or MLRA): P 136 Lat: 36.52790094 Long: -79.64614974 Datum: NAD 83  
 Soil Map Unit Name: DaA - Dan River loam, 0 to 2 percent slopes, frequently flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:  
**Wetland sample plot within PEM W-B027a. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators A2, A3, B10, and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-A157

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )					
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>60</u> x 1 = <u>60</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>140</u> (B)  Prevalence Index = B/A = <u>1.40</u>	
50% of total cover: _____		20% of total cover: _____			
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
50% of total cover: _____		20% of total cover: _____			
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )					
1. <u>Murdannia keisak</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>OBL</u>		
2. <u>Boehmeria cylindrica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>		
3. <u>Persicaria pensylvanica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>		
4. <u>Persicaria sagittata</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>		
5. <u>Carex lurida</u>	<u>10</u>	<input type="checkbox"/>	<u>OBL</u>		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
<u>100</u> = Total Cover				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
50% of total cover: <u>50.00</u>		20% of total cover: <u>20.00</u>			
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____	
50% of total cover: _____		20% of total cover: _____			

Remarks: (Include photo numbers here or on a separate sheet.)

**Rapid test and dominance test are passed.**



**SOIL**

Sampling Point: SP-A157

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 20	7.5YR 5/2	75	10YR 5/6	25	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project City/County: Rockingham County Sampling Date: 2024-09-04  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-A158  
 Investigator(s): WJ, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.5279152 Long: -79.64624972 Datum: NAD 83  
 Soil Map Unit Name: DaA - Dan River loam, 0 to 2 percent slopes, frequently flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:  
**Upland sample plot adjacent to PEM W-B027a. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
<input checked="" type="checkbox"/> Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____</b>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicator B2 is present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-A158

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )					
1. <u>Acer negundo</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.00</u> (A/B)	
2. <u>Celtis occidentalis</u>	<u>10</u>		<u>FACU</u>		
3. <u>Fraxinus americana</u>	<u>10</u>		<u>FACU</u>		
4. <u>Ulmus rubra</u>	<u>5</u>		<u>FAC</u>		
5. <u>Juniperus virginiana</u>	<u>5</u>		<u>FACU</u>		
6. _____					
7. _____					
<u>70</u> = Total Cover 50% of total cover: <u>35.00</u> 20% of total cover: <u>14.00</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>35</u> x 2 = <u>70</u> FAC species <u>70</u> x 3 = <u>210</u> FACU species <u>30</u> x 4 = <u>120</u> UPL species <u>40</u> x 5 = <u>200</u> Column Totals: <u>175</u> (A) <u>600</u> (B)  Prevalence Index = B/A = <u>3.42</u>	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )					
1. <u>Acer floridanum</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>UPL</u>		
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
<u>5</u> = Total Cover 50% of total cover: <u>2.50</u> 20% of total cover: <u>1.00</u>					
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )					
1. <u>Vinca minor</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
2. <u>Elymus virginicus</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>		
3. <u>Boehmeria cylindrica</u>	<u>15</u>		<u>FACW</u>		
4. <u>Liquidambar styraciflua</u>	<u>10</u>		<u>FAC</u>		
5. <u>Smilax rotundifolia</u>	<u>10</u>		<u>FAC</u>		
6. <u>Persicaria virginiana</u>	<u>5</u>		<u>FAC</u>		
7. <u>Chasmanthium latifolium</u>	<u>5</u>		<u>FACU</u>		
8. _____					
9. _____					
10. _____					
11. _____					
<u>100</u> = Total Cover 50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>					
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )					
1. _____				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
2. _____					
3. _____					
4. _____					
5. _____					
_____ = Total Cover 50% of total cover: _____    20% of total cover: _____					
50% of total cover: _____    20% of total cover: _____				<b>Hydrophytic Vegetation Present?</b> Yes _____    No <input checked="" type="checkbox"/>	

Remarks: (Include photo numbers here or on a separate sheet.)

**No tests for hydrophytic vegetation are passed.**



**SOIL**

Sampling Point: SP-A158

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 10	10YR 4/3	100					Loam	
10 - 20	2.5YR 4/6	100					Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project City/County: Rockingham County Sampling Date: 2024-09-04  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-A159  
 Investigator(s): WJ, LC Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.49387796 Long: -79.67595079 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:  
**Wetland sample plot within PSS W-B004a. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators B10, D2 and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-A159

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>125</u> x 3 = <u>375</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>150</u> (A) <u>445</u> (B)  Prevalence Index = B/A = <u>2.96</u>
1. <u>Liquidambar styraciflua</u>	<u>65</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Diospyros virginiana</u>	<u>10</u>	_____	<u>FAC</u>	
3. <u>Rosa multiflora</u>	<u>10</u>	_____	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>42.5</u> 20% of total cover: <u>17</u>				
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>Microstegium vimineum</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Juncus effusus</u>	<u>10</u>	_____	<u>FACW</u>	
3. <u>Toxicodendron radicans</u>	<u>10</u>	_____	<u>FAC</u>	
4. <u>Boehmeria cylindrica</u>	<u>5</u>	_____	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>32.5</u> 20% of total cover: <u>13</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.   <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test and prevalence index are met.**



**SOIL**

Sampling Point: SP-A159

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 5	7.5YR 4/2	100					Clay Loam	
5 - 11	10YR 5/2	90	5YR 5/6	10	C	M	Clay Loam	
11 - 16	7.5YR 6/2	85	7.5YR 6/6	15	C	M	Clay Loam	
16 - 21	7.5YR 7/1	80	10YR 5/8	20	C	M	Clay Loam	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project City/County: Rockingham County Sampling Date: 2024-09-04  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-A160  
 Investigator(s): WJ, LC Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Mound Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.49372894 Long: -79.67851148 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PEM W-B056. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

**Field Observations:**  
 Surface Water Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)  
**Wetland Hydrology Present? Yes \_\_\_\_\_ No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-A160

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>80</u> x 4 = <u>320</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>370</u> (B)  Prevalence Index = B/A = <u>3.70</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		
Herb Stratum (Plot size: <u>5 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>Digitaria sanguinalis</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Paspalum setaceum</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Liquidambar styraciflua</u>	<u>5</u>	<input type="checkbox"/>	<u>FAC</u>	
4. <u>Diodia virginiana</u>	<u>5</u>	<input type="checkbox"/>	<u>FACW</u>	
5. <u>Diospyros virginiana</u>	<u>5</u>	<input type="checkbox"/>	<u>FAC</u>	
6. <u>Bidens aristosa</u>	<u>5</u>	<input type="checkbox"/>	<u>FACW</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>50.00</u>		20% of total cover: <u>20.00</u>		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Hydrophytic Vegetation Present?</b> Yes _____      No <input checked="" type="checkbox"/>
<p><b>No tests are passed.</b></p>				



**SOIL**

Sampling Point: SP-A160

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 8	10YR 5/2	97	10YR 5/6	3	C	M	Sandy Loam	
8 - 20	10YR 5/2	85	10YR 5/6	15	C	M	Sandy Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project City/County: Rockingham County Sampling Date: 2024-09-04  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-A161  
 Investigator(s): WJ, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 0-2  
 Subregion (LRR or MLRA): P 136 Lat: 36.49377607 Long: -79.67857806 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____	

Remarks:  
**Wetland sample plot within PEM W-B056. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)	
___ Surface Water (A1)	___ True Aquatic Plants (B14)	___ Sparsely Vegetated Concave Surface (B8)	
___ High Water Table (A2)	___ Hydrogen Sulfide Odor (C1)	___ Drainage Patterns (B10)	
___ Saturation (A3)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Moss Trim Lines (B16)	
___ Water Marks (B1)	___ Presence of Reduced Iron (C4)	___ Dry-Season Water Table (C2)	
___ Sediment Deposits (B2)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Crayfish Burrows (C8)	
___ Drift Deposits (B3)	___ Thin Muck Surface (C7)	___ Saturation Visible on Aerial Imagery (C9)	
___ Algal Mat or Crust (B4)	___ Other (Explain in Remarks)	___ Stunted or Stressed Plants (D1)	
___ Iron Deposits (B5)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
___ Inundation Visible on Aerial Imagery (B7)		___ Shallow Aquitard (D3)	
___ Water-Stained Leaves (B9)		___ Microtopographic Relief (D4)	
___ Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators D2 and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-A161

<u>Tree Stratum</u> (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.66</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b>
50% of total cover: _____		20% of total cover: _____		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft r</u> )				Total % Cover of: _____ Multiply by: _____ OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>45</u> x 2 = <u>90</u> FAC species <u>35</u> x 3 = <u>105</u> FACU species <u>30</u> x 4 = <u>120</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>120</u> (A) <u>325</u> (B)
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover: _____		20% of total cover: _____		
<u>Herb Stratum</u> (Plot size: <u>5 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>
1. <u>Paspalum setaceum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
2. <u>Diodia virginiana</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. <u>Arthraxon hispidus</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
4. <u>Bidens aristosa</u>	<u>5</u>		<u>FACW</u>	
5. <u>Cyperus strigosus</u>	<u>5</u>		<u>FACW</u>	
6. <u>Echinochloa crus-galli</u>	<u>5</u>		<u>FAC</u>	
7. <u>Boehmeria cylindrica</u>	<u>5</u>		<u>FACW</u>	
8. <u>Rhynchospora macrostachya</u>	<u>5</u>		<u>OBL</u>	
9. <u>Persicaria hydropiper</u>	<u>5</u>		<u>OBL</u>	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>120</u> = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
50% of total cover: <u>60.00</u>		20% of total cover: <u>24.00</u>		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test is passed.**



**SOIL**

Sampling Point: SP-A161

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 3	10YR 5/2	97	10YR 5/6	3	C	M	Sandy Loam	
3 - 20	10YR 5/2	85	10YR 5/6	15	C	M	Sandy Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project City/County: Rockingham County Sampling Date: 2024-09-04  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-A162  
 Investigator(s): WJ, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 0-1  
 Subregion (LRR or MLRA): P 136 Lat: 36.4932346 Long: -79.67877727 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____	

Remarks:  
**Wetland sample plot within PEM W-B055. Vegetation disturbed by mowing. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)	
___ Surface Water (A1)	___ True Aquatic Plants (B14)	___ Sparsely Vegetated Concave Surface (B8)	
___ High Water Table (A2)	___ Hydrogen Sulfide Odor (C1)	___ Drainage Patterns (B10)	
___ Saturation (A3)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Moss Trim Lines (B16)	
___ Water Marks (B1)	___ Presence of Reduced Iron (C4)	___ Dry-Season Water Table (C2)	
___ Sediment Deposits (B2)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Crayfish Burrows (C8)	
___ Drift Deposits (B3)	___ Thin Muck Surface (C7)	___ Saturation Visible on Aerial Imagery (C9)	
___ Algal Mat or Crust (B4)	___ Other (Explain in Remarks)	___ Stunted or Stressed Plants (D1)	
___ Iron Deposits (B5)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
___ Inundation Visible on Aerial Imagery (B7)		___ Shallow Aquitard (D3)	
___ Water-Stained Leaves (B9)		___ Microtopographic Relief (D4)	
___ Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators D2 and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-A162

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
				_____ = Total Cover
50% of total cover: _____				20% of total cover: _____
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
				_____ = Total Cover
50% of total cover: _____				20% of total cover: _____
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				
1.	<u>Arthraxon hispidus</u>	15	✓	FAC
2.	<u>Poa trivialis</u>	15	✓	FACW
3.	<u>Murdannia keisak</u>	10	✓	OBL
4.	<u>Ludwigia palustris</u>	10	✓	OBL
5.	<u>Persicaria hydropiper</u>	10	✓	OBL
6.	<u>Juncus effusus</u>	5		FACW
7.	<u>Symphyotrichum lateriflorum</u>	5		FACW
8.	<u>Cyperus strigosus</u>	5		FACW
9.	<u>Bidens aristosa</u>	5		FACW
10.	<u>Sambucus nigra</u>	5		FAC
11.	<u>Scirpus atrovirens</u>	5		OBL
				90 = Total Cover
50% of total cover: <u>45.00</u>				20% of total cover: <u>18.00</u>
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				
1.				
2.				
3.				
4.				
5.				
				_____ = Total Cover
50% of total cover: _____				20% of total cover: _____
Remarks: (Include photo numbers here or on a separate sheet.)				
<b>Dominance test is passed.</b>				

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

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**Prevalence Index worksheet:**

	Total % Cover of:		Multiply by:
OBL species	<u>35</u>	x 1 =	<u>35</u>
FACW species	<u>35</u>	x 2 =	<u>70</u>
FAC species	<u>20</u>	x 3 =	<u>60</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column Totals:	<u>90</u> (A)		<u>165</u> (B)

Prevalence Index = B/A = 1.83

---

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

---

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

---

**Hydrophytic Vegetation Present?**      Yes       No



**SOIL**

Sampling Point: SP-A162

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 6	10YR 5/1	90	10YR 5/6	10	C	PL / M	Sandy Clay Loam	
6 - 20	10YR 6/1	75	10YR 5/8	25	C	PL / M	Sandy Clay Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project City/County: Rockingham County Sampling Date: 2024-09-03  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-A163  
 Investigator(s): WJ, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.52863274 Long: -79.64587512 Datum: NAD 83  
 Soil Map Unit Name: DaA - Dan River loam, 0 to 2 percent slopes, frequently flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____	

Remarks:  
**Wetland sample plot within PSS W-B056a. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)	
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B16)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators B9, D2 and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-A163

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____				20% of total cover: _____
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )				
1. <u>Platanus occidentalis</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Liquidambar styraciflua</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Fraxinus pennsylvanica</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
_____ = Total Cover				
50% of total cover: <u>22.50</u>				20% of total cover: <u>9.00</u>
Herb Stratum (Plot size: <u>5 ft r</u> )				
1. <u>Diodia virginiana</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Symphotrichum lateriflorum</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. <u>Juncus effusus</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
4. <u>Boehmeria cylindrica</u>	<u>5</u>		<u>FACW</u>	
5. <u>Solidago altissima</u>	<u>5</u>		<u>FACU</u>	
6. <u>Verbesina alternifolia</u>	<u>5</u>		<u>FAC</u>	
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
50% of total cover: <u>27.50</u>				20% of total cover: <u>11.00</u>
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
50% of total cover: _____				20% of total cover: _____

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:		Multiply by:		
OBL species	<u>0</u>	x 1 =	<u>0</u>	
FACW species	<u>75</u>	x 2 =	<u>150</u>	
FAC species	<u>20</u>	x 3 =	<u>60</u>	
FACU species	<u>5</u>	x 4 =	<u>20</u>	
UPL species	<u>0</u>	x 5 =	<u>0</u>	
Column Totals:	<u>100</u>	(A)	<u>230</u>	(B)

Prevalence Index = B/A = 2.30

---

**Hydrophytic Vegetation Indicators:**

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0<sup>1</sup>
- 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

---

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

---

**Hydrophytic Vegetation Present?**      Yes       No

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test is passed.**



**SOIL**

Sampling Point: SP-A163

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 8	10YR 5/2	90	10YR 5/6	10	C	M	Sandy Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Restrictive; rock  
 Depth (inches): 8

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project City/County: Rockingham County Sampling Date: 2024-09-03  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-A164  
 Investigator(s): WJ, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Mound Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.52855504 Long: -79.64586909 Datum: NAD 83  
 Soil Map Unit Name: DaA - Dan River loam, 0 to 2 percent slopes, frequently flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PSS W-B056a. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/></b>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicator D5 is present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-A164

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>165</u> (A) <u>490</u> (B)  Prevalence Index = B/A = <u>2.96</u>
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )</b>				
1. <u>Liquidambar styraciflua</u>	<u>55</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Juniperus virginiana</u>	<u>15</u>	_____	<u>FACU</u>	
3. <u>Acer negundo</u>	<u>15</u>	_____	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>42.50</u>		20% of total cover: <u>17.00</u>		
<b>Herb Stratum (Plot size: <u>5 ft r</u> )</b>				
1. <u>Erechtites hieraciifolia</u>	<u>25</u>	<input checked="" type="checkbox"/>	_____	
2. <u>Boehmeria cylindrica</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. <u>Eupatorium serotinum</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
4. <u>Viola striata</u>	<u>10</u>	_____	<u>FACW</u>	
5. <u>Poa pratensis</u>	<u>10</u>	_____	<u>FACU</u>	
6. <u>Bidens aristosa</u>	<u>5</u>	_____	<u>FACW</u>	
7. <u>Commelina communis</u>	<u>5</u>	_____	<u>FAC</u>	
8. <u>Diodia virginiana</u>	<u>5</u>	_____	<u>FACW</u>	
9. <u>Symphyotrichum lateriflorum</u>	<u>5</u>	_____	<u>FACW</u>	
10. <u>Eupatorium capillifolium</u>	<u>5</u>	_____	<u>FACU</u>	
11. <u>Ambrosia artemisiifolia</u>	<u>5</u>	_____	<u>FACU</u>	
_____ = Total Cover				
50% of total cover: <u>52.50</u>		20% of total cover: <u>21.00</u>		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		
<b>Hydrophytic Vegetation Indicators:</b>				
<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation				
<input checked="" type="checkbox"/> 2 - Dominance Test is >50%				
<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>				
<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)				
<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Definitions of Four Vegetation Strata:</b>				
<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.				
<b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.				
<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.				
<b>Woody vine</b> – All woody vines greater than 3.28 ft in height.				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____				

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test is passed.**



**SOIL**

Sampling Point: SP-A164

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 3	10YR 3/3	100					Sandy Loam	
3 - 18	10YR 3/4	100					Sandy Loam	
18 - 20	10YR 5/3	70	10YR 6/6	30	C	M	Sandy Clay Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project City/County: Rockingham County Sampling Date: 2024-10-03  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-A165  
 Investigator(s): WJ Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.519168 Long: -79.669729 Datum: NAD 83  
 Soil Map Unit Name: CmB - Clover sandy loam, 2 to 8 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:  
 Upland sample plot adjacent to PEM W-B034. Region has received more than 2 inches of rain in the week prior to survey, normal hydrologic conditions are not present. Vegetation significantly disturbed by mowing.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> High Water Table (A2)	_____ Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	_____ Moss Trim Lines (B16)
_____ True Aquatic Plants (B14)	_____ Dry-Season Water Table (C2)
_____ Hydrogen Sulfide Odor (C1)	_____ Crayfish Burrows (C8)
_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Presence of Reduced Iron (C4)	_____ Stunted or Stressed Plants (D1)
_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Geomorphic Position (D2)
_____ Thin Muck Surface (C7)	_____ Shallow Aquitard (D3)
_____ Other (Explain in Remarks)	_____ Microtopographic Relief (D4)
_____ Water Marks (B1)	_____ FAC-Neutral Test (D5)
_____ Sediment Deposits (B2)	
_____ Drift Deposits (B3)	
_____ Algal Mat or Crust (B4)	
_____ Iron Deposits (B5)	
_____ Inundation Visible on Aerial Imagery (B7)	
_____ Water-Stained Leaves (B9)	
_____ Aquatic Fauna (B13)	

<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>10</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>10</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
---	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Indicators A2 and A3 are present, however, they may be misapplied due to recent rainfall.



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-A165

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status		
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.00</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>45</u> (A) <u>175</u> (B)  Prevalence Index = B/A = <u>3.88</u>	
50% of total cover: _____		20% of total cover: _____			
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
50% of total cover: _____		20% of total cover: _____			
Herb Stratum (Plot size: <u>5 ft r</u> )					
1. <u>Allium vineale</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
2. <u>Solidago altissima</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
3. <u>Rumex crispus</u>	<u>5</u>	<input type="checkbox"/>	<u>FAC</u>		
4. <u>Rubus allegheniensis</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>		
5. <u>Lespedeza cuneata</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
<u>45</u> = Total Cover					
50% of total cover: <u>22.50</u>		20% of total cover: <u>9.00</u>			
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover					
50% of total cover: _____		20% of total cover: _____			

Remarks: (Include photo numbers here or on a separate sheet.)

No tests for hydrophytic vegetation are met. An unidentified *Carex* species occupied 5% of the herbaceous stratum. Because this taxon could not be identified to species level, it was not included in dominance test calculations. If it were included, no hydrophytic vegetation indicator would be met regardless of indicator status. Vegetation significantly disturbed by mowing. Mowed stems of *Solidago altissima* (FACU) were abundant in the sample plot location.



**SOIL**

Sampling Point: SP-A165

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10YR 4/4	100					Silt Loam	
4 - 6	10YR 5/2	95	10YR 4/6	5	C	M	Silty Clay Loam	
6 - 20	10YR 6/2	90	10YR 5/6	10	C	M	Sandy Clay Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is met.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project City/County: Rockingham County Sampling Date: 2024-10-03  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-A166  
 Investigator(s): WJ Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.519145 Long: -79.66986 Datum: NAD 83  
 Soil Map Unit Name: CmB - Clover sandy loam, 2 to 8 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____			

Remarks:  
 Wetland sample plot in PEM W-B034. Region has received more than 2 inches of rain in the week prior to survey, normal hydrologic conditions are not present. Vegetation significantly disturbed by mowing.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Microtopographic Relief (D4)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>10</u>	
Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>10</u> (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Indicators A2, A3, C3, and D2 are met. Indicators A2 and A3 may be misapplied due to recent rainfall event.



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-A166

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>65</u> x 2 = <u>130</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>80</u> (A) <u>185</u> (B)  Prevalence Index = B/A = <u>2.31</u>
50% of total cover: _____		20% of total cover: _____		
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover: _____		20% of total cover: _____		
Herb Stratum (Plot size: <u>5 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. <u>Juncus effusus</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Rubus allegheniensis</u>	<u>5</u>		<u>FACU</u>	
3. <u>Solidago altissima</u>	<u>5</u>		<u>FACU</u>	
4. <u>Phalaris arundinacea</u>	<u>5</u>		<u>FACW</u>	
5. <u>Rumex crispus</u>	<u>5</u>		<u>FAC</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>80</u> = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
50% of total cover: <u>40.00</u>		20% of total cover: <u>16.00</u>		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		

Remarks: (Include photo numbers here or on a separate sheet.)

Rapid test, dominance test, and prevalence index for hydrophytic vegetation are passed. Vegetation significantly disturbed by mowing. Many fewer mowed Solidago altissima (FACU) stems observed within mapped wetland boundary than outside of boundary.



**SOIL**

Sampling Point: SP-A166

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 6	10YR 5/2	90	10YR 4/6	10	C	PL / M	Silty Clay Loam	
6 - 20	10YR 6/2	70	10YR 5/6	30	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is met.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-03  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B001  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.49548386 Long: -79.6796029 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:  
**Wetland sample plot within PEM W-B001. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)	
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B16)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators D2 and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B001

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				
1. <u>Liquidambar styraciflua</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>5</u>	<u>10</u>	= Total Cover	<u>2</u>	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				
1. <u>Liquidambar styraciflua</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>20</u> x 1 = <u>20</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>65</u> x 3 = <u>195</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>125</u> (A) <u>295</u> (B)  Prevalence Index = B/A = <u>2.36</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
50% of total cover: <u>7.5</u>	<u>15</u>	= Total Cover	<u>3</u>	
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				
1. <u>Juncus effusus</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. <u>Toxicodendron radicans</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Carex alata</u>	<u>10</u>	_____	<u>OBL</u>	
4. <u>Cyperus strigosus</u>	<u>10</u>	_____	<u>FACW</u>	
5. <u>Persicaria sagittata</u>	<u>10</u>	_____	<u>OBL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% of total cover: <u>42.5</u>	<u>85</u>	= Total Cover	<u>17</u>	
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				
1. <u>Campsis radicans</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50% of total cover: <u>7.5</u>	<u>15</u>	= Total Cover	<u>3</u>	
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____				

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test and prevalence index are met.**



**SOIL**

Sampling Point: SP-B001

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 10	10YR 6/2	92	10YR 5/8	8	C	M	Clay Loam	
10 - 21	2.5Y 5/2	90	10YR 5/8	10	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-03  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B002  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.4954649 Long: -79.67969663 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PEM W-B001. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	____ Surface Soil Cracks (B6)
____ Surface Water (A1)	____ Sparsely Vegetated Concave Surface (B8)
____ High Water Table (A2)	____ Drainage Patterns (B10)
____ Saturation (A3)	____ Moss Trim Lines (B16)
____ Water Marks (B1)	____ Dry-Season Water Table (C2)
____ Sediment Deposits (B2)	____ Crayfish Burrows (C8)
____ Drift Deposits (B3)	____ Saturation Visible on Aerial Imagery (C9)
____ Algal Mat or Crust (B4)	____ Stunted or Stressed Plants (D1)
____ Iron Deposits (B5)	____ Geomorphic Position (D2)
____ Inundation Visible on Aerial Imagery (B7)	____ Shallow Aquitard (D3)
____ Water-Stained Leaves (B9)	____ Microtopographic Relief (D4)
____ Aquatic Fauna (B13)	____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B002

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )					
1. <u>Liquidambar styraciflua</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.00</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
50% of total cover: <u>5</u>	<u>10</u>	= Total Cover			<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>105</u> x 4 = <u>420</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>125</u> (A) <u>475</u> (B)  Prevalence Index = B/A = <u>3.80</u>
20% of total cover: <u>2</u>	<u>2</u>				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )					
1. <u>Ligustrum sinense</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
2. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACW</u>		
3. <u>Liquidambar styraciflua</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
50% of total cover: <u>12.5</u>	<u>25</u>	= Total Cover			
20% of total cover: <u>5</u>	<u>5</u>				
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )					
1. <u>Poa pratensis</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
2. <u>Trifolium pratense</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
3. <u>Lespedeza cuneata</u>	<u>5</u>	_____	<u>FACU</u>		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
50% of total cover: <u>45</u>	<u>90</u>	= Total Cover			
20% of total cover: <u>18</u>	<u>18</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover					
50% of total cover: _____					
20% of total cover: _____					

Remarks: (Include photo numbers here or on a separate sheet.)

**No indicators are present.**

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No



**SOIL**

Sampling Point: SP-B002

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 21	10YR 5/2	90	10YR 5/6	10	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Rockingham County Sampling Date: 2024-06-03  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B003  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5  
 Subregion (LRR or MLRA): P 136 Lat: 36.494490 Long: -79.679068 Datum: NAD 83  
 Soil Map Unit Name: CsA - Codorus loam, 0 to 2 percent slopes, frequently flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:  
**Wetland sample plot within PFO W-B002. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
<input checked="" type="checkbox"/> Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators B1, B9, B10, D2 and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B003

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
1. <u>Fraxinus pennsylvanica</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Liquidambar styraciflua</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Platanus occidentalis</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
4. <u>Acer rubrum</u>	<u>10</u>		<u>FAC</u>	
5. _____				
6. _____				
7. _____				
$\frac{100}{50.00} = \text{Total Cover}$ 50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>55</u> x 2 = <u>110</u> FAC species <u>45</u> x 3 = <u>135</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>245</u> (B)  Prevalence Index = B/A = <u>2.45</u>
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
$\text{_____} = \text{Total Cover}$ 50% of total cover: _____      20% of total cover: _____				
Herb Stratum (Plot size: <u>5 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
$\text{_____} = \text{Total Cover}$ 50% of total cover: _____      20% of total cover: _____				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
$\text{_____} = \text{Total Cover}$ 50% of total cover: _____      20% of total cover: _____				
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
<b>Dominance test and prevalence index are met.</b>				



**SOIL**

Sampling Point: SP-B003

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 21	5Y 6/1	90	7.5YR 5/8	10	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	Hydric Soil Present?    Yes <input checked="" type="checkbox"/> No _____
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Remarks:  
**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-03  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B004  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex Slope (%): 5  
 Subregion (LRR or MLRA): P 136 Lat: 36.49447855 Long: -79.67912489 Datum: NAD 83  
 Soil Map Unit Name: CsA - Codorus loam, 0 to 2 percent slopes, frequently flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PFO W-B002. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B004

	Absolute % Cover	Dominant Species?	Indicator Status																									
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )																												
1. <u>Liquidambar styraciflua</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60.00</u> (A/B)																								
2. _____	_____	_____	_____																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
6. _____	_____	_____	_____																									
7. _____	_____	_____	_____																									
<u>30</u> = Total Cover																												
50% of total cover: <u>15</u>		20% of total cover: <u>6</u>																										
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )																												
1. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 1 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td style="text-align:right;">FACW species</td> <td style="text-align:center;"><u>15</u></td> <td style="text-align:center;">x 2 =</td> <td style="text-align:center;"><u>30</u></td> </tr> <tr> <td style="text-align:right;">FAC species</td> <td style="text-align:center;"><u>35</u></td> <td style="text-align:center;">x 3 =</td> <td style="text-align:center;"><u>105</u></td> </tr> <tr> <td style="text-align:right;">FACU species</td> <td style="text-align:center;"><u>50</u></td> <td style="text-align:center;">x 4 =</td> <td style="text-align:center;"><u>200</u></td> </tr> <tr> <td style="text-align:right;">UPL species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 5 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td style="text-align:right;">Column Totals:</td> <td style="text-align:center;"><u>100</u></td> <td style="text-align:center;">(A)</td> <td style="text-align:center;"><u>335</u></td> (B)                 </tr></table> Prevalence Index = B/A = <u>3.35</u>	Total % Cover of:	<u>0</u>	x 1 =	<u>0</u>	FACW species	<u>15</u>	x 2 =	<u>30</u>	FAC species	<u>35</u>	x 3 =	<u>105</u>	FACU species	<u>50</u>	x 4 =	<u>200</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>100</u>	(A)	<u>335</u>
Total % Cover of:	<u>0</u>	x 1 =	<u>0</u>																									
FACW species	<u>15</u>	x 2 =	<u>30</u>																									
FAC species	<u>35</u>	x 3 =	<u>105</u>																									
FACU species	<u>50</u>	x 4 =	<u>200</u>																									
UPL species	<u>0</u>	x 5 =	<u>0</u>																									
Column Totals:	<u>100</u>	(A)	<u>335</u>																									
2. <u>Liquidambar styraciflua</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
6. _____	_____	_____	_____																									
7. _____	_____	_____	_____																									
8. _____	_____	_____	_____																									
9. _____	_____	_____	_____																									
<u>10</u> = Total Cover																												
50% of total cover: <u>5</u>		20% of total cover: <u>2</u>																										
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )																												
1. <u>Rubus argutus</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																								
2. <u>Prasina atlantica</u>	<u>5</u>	_____	<u>FACW</u>																									
3. <u>Juncus effusus</u>	<u>5</u>	_____	<u>FACW</u>																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
6. _____	_____	_____	_____																									
7. _____	_____	_____	_____																									
8. _____	_____	_____	_____																									
9. _____	_____	_____	_____																									
10. _____	_____	_____	_____																									
11. _____	_____	_____	_____																									
<u>30</u> = Total Cover																												
50% of total cover: <u>15</u>		20% of total cover: <u>6</u>																										
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																												
1. <u>Lonicera japonica</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																								
2. _____	_____	_____	_____																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
<u>30</u> = Total Cover																												
50% of total cover: <u>15</u>		20% of total cover: <u>6</u>																										
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____																												

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test is passed.**



**SOIL**

Sampling Point: SP-B004

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 5	10YR 3/3	100					Loam	
5 - 21	7.5YR 6/6	100					Clay Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-03  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B005  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.4941603 Long: -79.67878759 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____			

Remarks:  
**Wetland sample plot within PFO W-B002. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)	
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
<input checked="" type="checkbox"/> High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B16)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present?	Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>4</u>	
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators A2, D2 and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B005

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )					
1. <u>Acer rubrum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)	
2. <u>Liquidambar styraciflua</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
3. <u>Fraxinus pennsylvanica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>		
4. _____					
5. _____					
6. _____					
7. _____					
<u>80</u> = Total Cover 50% of total cover: <u>40</u> 20% of total cover: <u>16</u>				<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>15</u> x 1 = <u>15</u> FACW species <u>80</u> x 2 = <u>160</u> FAC species <u>65</u> x 3 = <u>195</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>160</u> (A) <u>370</u> (B)  Prevalence Index = B/A = <u>2.31</u>	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )					
1. <u>Fraxinus pennsylvanica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>		
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
<u>20</u> = Total Cover 50% of total cover: <u>10</u> 20% of total cover: <u>4</u>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )					
1. <u>Prasina atlantica</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACW</u>		
2. <u>Carex canescens</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>OBL</u>		
3. <u>Cyperus strigosus</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>		
4. <u>Toxicodendron radicans</u>	<u>5</u>		<u>FAC</u>		
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
<u>60</u> = Total Cover 50% of total cover: <u>30</u> 20% of total cover: <u>12</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )					
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
_____ = Total Cover 50% of total cover: _____      20% of total cover: _____				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____	

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test and prevalence index are met.**



**SOIL**

Sampling Point: SP-B005

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 21	10YR 5/1	80	7.5YR 5/6	20	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-03  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B006  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.49419027 Long: -79.67885583 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PFO W-B002. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B006

	Absolute % Cover	Dominant Species?	Indicator Status																																	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )																																				
1. <u>Celtis occidentalis</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.00</u> (A/B)																																
2. <u>Liquidambar styraciflua</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																																	
3. <u>Ulmus alata</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																																	
4. <u>Acer rubrum</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																																	
5. _____																																				
6. _____																																				
7. _____																																				
_____ = Total Cover 50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:center;">_____</td> <td style="text-align:right;">Multiply by:</td> <td style="text-align:center;">_____</td> </tr> <tr> <td>OBL species</td> <td style="text-align:center;"><u>0</u></td> <td>x 1 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center;"><u>0</u></td> <td>x 2 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;"><u>125</u></td> <td>x 3 =</td> <td style="text-align:center;"><u>375</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>75</u></td> <td>x 4 =</td> <td style="text-align:center;"><u>300</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center;"><u>0</u></td> <td>x 5 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align:center;"><u>200</u></td> <td>(A)</td> <td style="text-align:center;"><u>675</u></td> </tr> <tr> <td colspan="4" style="text-align:right;">Prevalence Index = B/A = <u>3.37</u></td> </tr> </table>	Total % Cover of:	_____	Multiply by:	_____	OBL species	<u>0</u>	x 1 =	<u>0</u>	FACW species	<u>0</u>	x 2 =	<u>0</u>	FAC species	<u>125</u>	x 3 =	<u>375</u>	FACU species	<u>75</u>	x 4 =	<u>300</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>200</u>	(A)	<u>675</u>	Prevalence Index = B/A = <u>3.37</u>			
Total % Cover of:	_____	Multiply by:	_____																																	
OBL species	<u>0</u>	x 1 =	<u>0</u>																																	
FACW species	<u>0</u>	x 2 =	<u>0</u>																																	
FAC species	<u>125</u>	x 3 =	<u>375</u>																																	
FACU species	<u>75</u>	x 4 =	<u>300</u>																																	
UPL species	<u>0</u>	x 5 =	<u>0</u>																																	
Column Totals:	<u>200</u>	(A)	<u>675</u>																																	
Prevalence Index = B/A = <u>3.37</u>																																				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )																																				
1. _____				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																																
2. _____																																				
3. _____																																				
4. _____																																				
5. _____																																				
6. _____																																				
7. _____																																				
8. _____																																				
9. _____																																				
_____ = Total Cover 50% of total cover: _____    20% of total cover: _____																																				
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )																																				
1. <u>Toxicodendron radicans</u>	<u>80</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																																
2. <u>Parthenocissus quinquefolia</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																																	
3. _____																																				
4. _____																																				
5. _____																																				
6. _____																																				
7. _____																																				
8. _____																																				
9. _____																																				
10. _____																																				
11. _____																																				
_____ = Total Cover 50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>																																				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																																				
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes _____    No <input checked="" type="checkbox"/>																																
2. _____																																				
3. _____																																				
4. _____																																				
5. _____																																				
_____ = Total Cover 50% of total cover: _____    20% of total cover: _____																																				

Remarks: (Include photo numbers here or on a separate sheet.)

**No tests are passed.**



**SOIL**

Sampling Point: SP-B006

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 21	10YR 5/3	90	10YR 4/6	10	C	M	Sandy Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-04  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B007  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.49473273 Long: -79.67763675 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:  
**Wetland sample plot within PFO W-B003. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators C9, D2 and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B007

	Absolute % Cover	Dominant Species?	Indicator Status															
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. <u>Liquidambar styraciflua</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)														
2. <u>Acer rubrum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
3. <u>Fraxinus pennsylvanica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
4. _____																		
5. _____																		
6. _____																		
7. _____																		
$\frac{100}{50} = \text{Total Cover}$ 50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>55</u></td> <td>x 1 = <u>55</u></td> </tr> <tr> <td>FACW species <u>65</u></td> <td>x 2 = <u>130</u></td> </tr> <tr> <td>FAC species <u>100</u></td> <td>x 3 = <u>300</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>220</u> (A)</td> <td><u>485</u> (B)</td> </tr> </table> <p style="text-align:center;">Prevalence Index = B/A = <u>2.20</u></p>	Total % Cover of:	Multiply by:	OBL species <u>55</u>	x 1 = <u>55</u>	FACW species <u>65</u>	x 2 = <u>130</u>	FAC species <u>100</u>	x 3 = <u>300</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>220</u> (A)	<u>485</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>55</u>	x 1 = <u>55</u>																	
FACW species <u>65</u>	x 2 = <u>130</u>																	
FAC species <u>100</u>	x 3 = <u>300</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>220</u> (A)	<u>485</u> (B)																	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )																		
1. <u>Fraxinus pennsylvanica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
$\frac{20}{10} = \text{Total Cover}$ 50% of total cover: <u>10.00</u> 20% of total cover: <u>4.00</u>																		
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )																		
1. <u>Ludwigia palustris</u>	<u>55</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Cyperus rotundus</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
3. <u>Juncus effusus</u>	<u>15</u>		<u>FACW</u>															
4. <u>Eleocharis tortilis</u>	<u>10</u>		<u>FACW</u>															
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
$\frac{100}{50} = \text{Total Cover}$ 50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>																		
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. _____				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
_____ = Total Cover 50% of total cover: _____    20% of total cover: _____																		
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____																		

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test and prevalence index are met.**



**SOIL**

Sampling Point: SP-B007

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 3	10YR 5/2	98	5YR 4/6	2	C	M	Silty Clay	
3 - 11	10YR 6/2	95	7.5YR 5/8	5	D	M	Silty Clay	
11 - 21	10YR 7/1	90	10YR 6/8	10	C	M	Silty Clay	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Rockingham County Sampling Date: 2024-06-04  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B008  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.494675 Long: -79.677836 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____			

Remarks:  
**Upland sample plot adjacent to PFO W-B003. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)	
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B16)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		_____ Geomorphic Position (D2)	
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicator D5 is present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B008

	Absolute % Cover	Dominant Species?	Indicator Status																													
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )																																
1. <u>Acer rubrum</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75.00</u> (A/B)																												
2. <u>Liquidambar styraciflua</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																													
3. <u>Fraxinus pennsylvanica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																													
4. _____																																
5. _____																																
6. _____																																
7. _____																																
$\frac{100}{50.00} = \text{Total Cover}$ 50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:center;"><u>55</u></td> <td style="text-align:center;">x 1 =</td> <td style="text-align:center;"><u>55</u></td> </tr> <tr> <td style="text-align:right;">OBL species</td> <td style="text-align:center;"><u>55</u></td> <td style="text-align:center;">x 2 =</td> <td style="text-align:center;"><u>110</u></td> </tr> <tr> <td style="text-align:right;">FACW species</td> <td style="text-align:center;"><u>90</u></td> <td style="text-align:center;">x 3 =</td> <td style="text-align:center;"><u>270</u></td> </tr> <tr> <td style="text-align:right;">FAC species</td> <td style="text-align:center;"><u>50</u></td> <td style="text-align:center;">x 4 =</td> <td style="text-align:center;"><u>200</u></td> </tr> <tr> <td style="text-align:right;">FACU species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 5 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td style="text-align:right;">UPL species</td> <td style="text-align:center;"><u>250</u></td> <td style="text-align:center;">(A)</td> <td style="text-align:center;"><u>635</u></td> </tr> <tr> <td style="text-align:right;">Column Totals:</td> <td></td> <td></td> <td style="text-align:center;"><u>(B)</u></td> </tr> </table> Prevalence Index = B/A = <u>2.54</u>	Total % Cover of:	<u>55</u>	x 1 =	<u>55</u>	OBL species	<u>55</u>	x 2 =	<u>110</u>	FACW species	<u>90</u>	x 3 =	<u>270</u>	FAC species	<u>50</u>	x 4 =	<u>200</u>	FACU species	<u>0</u>	x 5 =	<u>0</u>	UPL species	<u>250</u>	(A)	<u>635</u>	Column Totals:			<u>(B)</u>
Total % Cover of:	<u>55</u>	x 1 =	<u>55</u>																													
OBL species	<u>55</u>	x 2 =	<u>110</u>																													
FACW species	<u>90</u>	x 3 =	<u>270</u>																													
FAC species	<u>50</u>	x 4 =	<u>200</u>																													
FACU species	<u>0</u>	x 5 =	<u>0</u>																													
UPL species	<u>250</u>	(A)	<u>635</u>																													
Column Totals:			<u>(B)</u>																													
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )																																
1. <u>Fraxinus pennsylvanica</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																												
2. <u>Salix nigra</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>OBL</u>																													
3. <u>Alnus serrulata</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>OBL</u>																													
4. <u>Liquidambar styraciflua</u>	<u>10</u>		<u>FAC</u>																													
5. _____																																
6. _____																																
7. _____																																
8. _____																																
9. _____																																
$\frac{100}{50.00} = \text{Total Cover}$ 50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																												
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )																																
1. <u>Toxicodendron radicans ssp. radicans</u>	<u>30</u>	<input checked="" type="checkbox"/>																														
2. <u>Anthoxanthum odoratum</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																													
3. <u>Lonicera japonica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																													
4. <u>Achillea millefolium</u>	<u>5</u>		<u>FACU</u>																													
5. <u>Solidago canadensis</u>	<u>5</u>		<u>FACU</u>																													
6. _____																																
7. _____																																
8. _____																																
9. _____																																
10. _____																																
11. _____																																
$\frac{80}{40.00} = \text{Total Cover}$ 50% of total cover: <u>40.00</u> 20% of total cover: <u>16.00</u>																																
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																																
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																												
2. _____																																
3. _____																																
4. _____																																
5. _____																																
_____ = Total Cover 50% of total cover: _____    20% of total cover: _____																																

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test is passed.**



**SOIL**

Sampling Point: SP-B008

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 21	2.5Y 6/2	97	7.5YR 5/8	3	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate City/County: Rockingham County Sampling Date: 2024-08-27  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-B008a  
 Investigator(s): AC, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-1  
 Subregion (LRR or MLRA): P 136 Lat: 36.49470941 Long: -79.6777966 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____	

Remarks:  
**Wetland sample plot within W-B051. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)	
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B16)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators A3, B9, B10, D2, and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B008a

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )					
1. <u>Acer rubrum</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>9</u> (A)  Total Number of Dominant Species Across All Strata: <u>9</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)	
2. <u>Quercus phellos</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
3. <u>Liquidambar styraciflua</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
4. _____					
5. _____					
6. _____					
7. _____					
50% of total cover: <u>27.50</u>		<u>55</u> = Total Cover		<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>35</u> x 2 = <u>70</u> FAC species <u>130</u> x 3 = <u>390</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>165</u> (A) <u>460</u> (B)  Prevalence Index = B/A = <u>2.78</u>	
20% of total cover: <u>11.00</u>					
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )					
1. <u>Liquidambar styraciflua</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
2. <u>Quercus phellos</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
3. <u>Carpinus caroliniana</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
50% of total cover: <u>30.00</u>		<u>60</u> = Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
20% of total cover: <u>12.00</u>					
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )					
1. <u>Boehmeria cylindrica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>		
2. <u>Leersia virginica</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>		
3. <u>Toxicodendron radicans</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
50% of total cover: <u>25.00</u>		<u>50</u> = Total Cover		<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
20% of total cover: <u>10.00</u>					
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )					
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
50% of total cover: _____		_____ = Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____	
20% of total cover: _____					

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test and prevalence index are met.**



**SOIL**

Sampling Point: SP-B008a

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10YR 5/3	100					Clay Loam	
4 - 14	10YR 5/2	95	10YR 5/8	5	C	M	Clay Loam	
14 - 20	10YR 5/2	85	10YR 5/8	15	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
---	--

Remarks:  
**Indicator F3 is met.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-04  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B009  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.4935978 Long: -79.67595217 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____			

Remarks:  
**Wetland sample plot within PEM W-B004. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)	
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Moss Trim Lines (B16)	_____ Dry-Season Water Table (C2)
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Crayfish Burrows (C8)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Stunted or Stressed Plants (D1)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Shallow Aquitard (D3)	_____ Microtopographic Relief (D4)
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)		
_____ Iron Deposits (B5)			
_____ Inundation Visible on Aerial Imagery (B7)			
_____ Water-Stained Leaves (B9)			
_____ Aquatic Fauna (B13)			

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators B10, D2 and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B009

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>30</u> x 1 = <u>30</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>90</u> (A) <u>210</u> (B)  Prevalence Index = B/A = <u>2.33</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>Zea mays</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Ludwigia palustris</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
3. <u>Lemna minor</u>	<u>10</u>	<input type="checkbox"/>	<u>OBL</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>45.00</u> 20% of total cover: <u>18.00</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
<p><b>Dominance test and prevalence index are met.</b></p>				



**SOIL**

Sampling Point: SP-B009

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 5	7.5YR 4/2	100					Clay Loam	
5 - 11	10YR 5/2	90	5YR 5/6	10	C	M	Clay Loam	
11 - 16	7.5YR 6/2	85	7.5YR 6/6	15	C	M	Clay Loam	
16 - 21	7.5YR 7/1	80	10YR 5/8	20	C	M	Clay Loam	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-04  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B010  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR or MLRA): \_\_\_\_\_ Lat: 36.49359695 Long: -79.67598241 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PEM W-B004. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B010

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u>	(A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u>	(B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.00</u>	(A/B)
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b>	
5. _____	_____	_____	_____	Total % Cover of: _____ Multiply by:	
6. _____	_____	_____	_____	OBL species <u>0</u>	x 1 = <u>0</u>
7. _____	_____	_____	_____	FACW species <u>0</u>	x 2 = <u>0</u>
_____ = Total Cover				FAC species <u>3</u>	x 3 = <u>9</u>
50% of total cover: _____ 20% of total cover: _____				FACU species <u>7</u>	x 4 = <u>28</u>
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				UPL species <u>90</u>	x 5 = <u>450</u>
1. _____	_____	_____	_____	Column Totals: <u>100</u>	(A) <u>487</u> (B)
2. _____	_____	_____	_____	Prevalence Index = B/A = <u>4.87</u>	
3. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b>	
4. _____	_____	_____	_____	___ 1 - Rapid Test for Hydrophytic Vegetation	
5. _____	_____	_____	_____	___ 2 - Dominance Test is >50%	
6. _____	_____	_____	_____	___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
7. _____	_____	_____	_____	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
8. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
9. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
_____ = Total Cover				<b>Definitions of Four Vegetation Strata:</b>	
50% of total cover: _____ 20% of total cover: _____				<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				<b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.	
1. <u>Zea mays</u>	<u>90</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
2. <u>Solanum carolinense</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>	<b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
3. <u>Acer rubrum</u>	<u>3</u>	<input type="checkbox"/>	<u>FAC</u>	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>	
4. <u>Apocynum cannabinum</u>	<u>2</u>	<input type="checkbox"/>	<u>FACU</u>		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____	<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )	
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
_____	_____	_____	_____		
_____ = Total Cover					
50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>					

Remarks: (Include photo numbers here or on a separate sheet.)

**No indicators are present.**



**SOIL**

Sampling Point: SP-B010

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 15	10YR 4/3	100					Sandy Loam	
15 - 21	10YR 5/3	85	10YR 4/6	15	C	M	Sandy Clay Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-04  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B011  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.50159731 Long: -79.67157062 Datum: NAD 83  
 Soil Map Unit Name: CsA - Codorus loam, 0 to 2 percent slopes, frequently flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____			

Remarks:  
**Wetland sample plot within PFO W-B005. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators B7 and D2 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B011

	Absolute % Cover	Dominant Species?	Indicator Status															
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. <u>Liquidambar styraciflua</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>85.71</u> (A/B)														
2. <u>Acer rubrum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
3. <u>Carpinus caroliniana</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
4. <u>Pinus taeda</u>	<u>5</u>		<u>FAC</u>															
5. _____																		
6. _____																		
7. _____																		
$\frac{100}{50.00} = \text{Total Cover}$ 50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; text-align: right;">Total % Cover of:</td> <td style="width:50%; text-align: left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>230</u></td> <td>x 3 = <u>690</u></td> </tr> <tr> <td>FACU species <u>40</u></td> <td>x 4 = <u>160</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>290</u> (A)</td> <td><u>880</u> (B)</td> </tr> </table> <p style="text-align: center;">Prevalence Index = B/A = <u>3.03</u></p>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>230</u>	x 3 = <u>690</u>	FACU species <u>40</u>	x 4 = <u>160</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>290</u> (A)	<u>880</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>10</u>	x 1 = <u>10</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>230</u>	x 3 = <u>690</u>																	
FACU species <u>40</u>	x 4 = <u>160</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>290</u> (A)	<u>880</u> (B)																	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )																		
1. <u>Liriodendron tulipifera</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
2. <u>Acer rubrum</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
3. <u>Carpinus caroliniana</u>	<u>10</u>		<u>FAC</u>															
4. <u>Nyssa sylvatica</u>	<u>5</u>		<u>FAC</u>															
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
$\frac{70}{35.00} = \text{Total Cover}$ 50% of total cover: <u>35.00</u> 20% of total cover: <u>14.00</u>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )																		
1. <u>Microstegium vimineum</u>	<u>70</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
2. <u>Dulichium arundinaceum</u>	<u>10</u>		<u>OBL</u>															
3. <u>Impatiens capensis</u>	<u>10</u>		<u>FACW</u>															
4. <u>Polystichum acrostichoides</u>	<u>10</u>		<u>FACU</u>															
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
$\frac{100}{50.00} = \text{Total Cover}$ 50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. <u>Vitis rotundifolia</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
2. _____																		
3. _____																		
4. _____																		
5. _____																		
$\frac{20}{10.00} = \text{Total Cover}$ 50% of total cover: <u>10.00</u> 20% of total cover: <u>4.00</u>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														
Remarks: (Include photo numbers here or on a separate sheet.)																		

**Dominance test is passed.**



**SOIL**

Sampling Point: SP-B011

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10YR 5/2	60	7.5YR 5/8	10	C	M	Sandy Clay Loam	
0 - 4	10YR 6/2	30					Sandy Clay Loam	
4 - 12	10YR 5/3	85	7.5YR 5/8	15	C	M	Sandy Clay Loam	
12 - 21	10YR 6/2	70	10YR 6/6	30	C	M	Sandy Clay Loam	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-04  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B012  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR or MLRA): P 136 Lat: 36.50177534 Long: -79.67145072 Datum: NAD 83  
 Soil Map Unit Name: CsA - Codorus loam, 0 to 2 percent slopes, frequently flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PFO W-B005. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/></b>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B012

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )					
1. <u>Pinus taeda</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.66</u> (A/B)	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
50% of total cover: <u>5.00</u>	<u>10</u>	= Total Cover			<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>100</u> x 3 = <u>300</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>140</u> (A) <u>460</u> (B)  Prevalence Index = B/A = <u>3.28</u>
20% of total cover: <u>2.00</u>					
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )					
1. <u>Acer rubrum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
2. <u>Liriodendron tulipifera</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
3. <u>Liquidambar styraciflua</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
50% of total cover: <u>42.50</u>	<u>85</u>	= Total Cover			
20% of total cover: <u>17.00</u>					
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )					
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
_____ = Total Cover					
50% of total cover: _____					
20% of total cover: _____					
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )					
1. <u>Vitis rotundifolia</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____	
2. <u>Smilax bona-nox</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
3. _____					
4. _____					
5. _____					
_____ = Total Cover					
50% of total cover: <u>22.50</u>					
20% of total cover: <u>9.00</u>					

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test is passed.**



**SOIL**

Sampling Point: SP-B012

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 18	10YR 4/4	80	10YR 4/6	20	C	M	Sandy Clay Loam	
18 - 21	10YR 4/4	100					Sandy Clay Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-05  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B013  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.5166371 Long: -79.65717197 Datum: NAD 83  
 Soil Map Unit Name: CmB - Clover sandy loam, 2 to 8 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____			

Remarks:  
**Wetland sample plot within PEM W-B007. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)	
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B16)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators D2 and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B013

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )					
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>85</u> x 2 = <u>170</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>200</u> (B)  Prevalence Index = B/A = <u>2.00</u>	
50% of total cover: _____		20% of total cover: _____			
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
50% of total cover: _____		20% of total cover: _____			
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )					
1. <u>Juncus effusus</u>	<u>65</u>	<input checked="" type="checkbox"/>	<u>FACW</u>		
2. <u>Carex scoparia</u>	<u>10</u>		<u>FACW</u>		
3. <u>Carex vulpinoidea</u>	<u>10</u>		<u>OBL</u>		
4. <u>Dichanthelium scoparium</u>	<u>10</u>		<u>FACW</u>		
5. <u>Solidago canadensis</u>	<u>5</u>		<u>FACU</u>		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
<u>100</u> = Total Cover				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
50% of total cover: <u>50</u>		20% of total cover: <u>20</u>			
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____	
50% of total cover: _____		20% of total cover: _____			

Remarks: (Include photo numbers here or on a separate sheet.)

**Rapid test, dominance test and prevalence index are met.**



**SOIL**

Sampling Point: SP-B013

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 2	7.5YR 5/3	100					Clay Loam	
2 - 10	10YR 5/2	55	7.5YR 5/8	10	C	M	Clay Loam	
2 - 10	10YR 6/2	35					Clay Loam	
10 - 21	10YR 5/2	65	7.5YR 6/8	15	C	M	Clay Loam	
10 - 21	10YR 6/1	20					Clay Loam	
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-05  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B014  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.51658798 Long: -79.65721347 Datum: NAD 83  
 Soil Map Unit Name: CmB - Clover sandy loam, 2 to 8 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PEM W-B007. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B014

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.00</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>80</u> x 4 = <u>320</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>360</u> (B)  Prevalence Index = B/A = <u>3.60</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>Lolium perenne</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Bidens aristosa</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. <u>Chamaecrista nictitans</u>	<u>15</u>	<input type="checkbox"/>	<u>FACU</u>	
4. <u>Verbena incompta</u>	<u>15</u>	<input type="checkbox"/>	<u>FACU</u>	
5. <u>Trifolium repens</u>	<u>10</u>	<input type="checkbox"/>	<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>				

Remarks: (Include photo numbers here or on a separate sheet.)

**No tests are passed.**



**SOIL**

Sampling Point: SP-B014

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 21	10YR 6/3	50	7.5YR 5/8	2	C	M	Clay Loam	
0 - 21	10YR 6/2	48					Clay Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-05  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B015  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.51321174 Long: -79.66002915 Datum: NAD 83  
 Soil Map Unit Name: CmD - Clover sandy loam, 8 to 15 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:  
**Wetland sample plot within PEM W-B008. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators C9 and D2 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B015

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )					
1. <u>Acer rubrum</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83.33</u> (A/B)	
2. <u>Pinus taeda</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
3. <u>Liriodendron tulipifera</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
4. _____					
5. _____					
6. _____					
7. _____					
<u>45</u> = Total Cover 50% of total cover: <u>22.5</u> 20% of total cover: <u>9</u>				<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>45</u> x 1 = <u>45</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>75</u> x 3 = <u>225</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>155</u> (A) <u>390</u> (B)  Prevalence Index = B/A = <u>2.51</u>	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )					
1. <u>Liquidambar styraciflua</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
<u>10</u> = Total Cover 50% of total cover: <u>5</u> 20% of total cover: <u>2</u>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )					
1. <u>Carex crinita</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>OBL</u>		
2. <u>Microstegium vimineum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
3. <u>Lonicera japonica</u>	<u>15</u>		<u>FACU</u>		
4. <u>Bidens aristosa</u>	<u>10</u>		<u>FACW</u>		
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
<u>100</u> = Total Cover 50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )					
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
_____ = Total Cover 50% of total cover: _____      20% of total cover: _____				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Include photo numbers here or on a separate sheet.)					

**Dominance test and prevalence index are met.**



**SOIL**

Sampling Point: SP-B015

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 10	7.5YR 3/2	60	7.5YR 5/6	3	C	M	Sandy Loam	
0 - 10	10YR 4/2	37					Sandy Loam	
10 - 21	2.5Y 5/1	95	7.5R 4/8	5	C	M	Sandy Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-05  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B016  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.51327012 Long: -79.66008564 Datum: NAD 83  
 Soil Map Unit Name: CmD - Clover sandy loam, 8 to 15 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PEM W-B008. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/></b>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicator D5 is present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B016

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )					
1. <u>Pinus taeda</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>85.71</u> (A/B)	
2. <u>Fraxinus pennsylvanica</u>	<u>5</u>		<u>FACW</u>		
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
50% of total cover: <u>17.50</u>		<u>35</u> = Total Cover		<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>5</u> x 1 = <u>5</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>120</u> (A) <u>365</u> (B)  Prevalence Index = B/A = <u>3.04</u>	
20% of total cover: <u>7.00</u>					
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )					
1. <u>Carya glabra</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
2. <u>Nyssa sylvatica</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
3. <u>Quercus phellos</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
50% of total cover: <u>20.00</u>		<u>40</u> = Total Cover			
20% of total cover: <u>8.00</u>					
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )					
1. <u>Athyrium asplenioides</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. <u>Carex crinita</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>OBL</u>		
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
50% of total cover: <u>10.00</u>		<u>20</u> = Total Cover			
20% of total cover: <u>4.00</u>					
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )					
1. <u>Smilax rotundifolia</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
2. _____					
3. _____					
4. _____					
5. _____					
50% of total cover: <u>12.50</u>		<u>25</u> = Total Cover			
20% of total cover: <u>5.00</u>					
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test is passed.**



**SOIL**

Sampling Point: SP-B016

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 21	2.5Y 5/2	98	10YR 6/6	2	C	M	Sandy Loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) ( <b>MLRA 147</b> )
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> <b>(MLRA 147, 148)</b>
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> <b>(MLRA 136, 147)</b>
<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> )	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) ( <b>LRR N, MLRA 147, 148</b> )	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>MLRA 147, 148</b> )	
<input type="checkbox"/> Thin Dark Surface (S9) ( <b>MLRA 147, 148</b> )	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR N, MLRA 136</b> )	
<input type="checkbox"/> Umbric Surface (F13) ( <b>MLRA 136, 122</b> )	
<input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 148</b> )	
<input type="checkbox"/> Red Parent Material (F21) ( <b>MLRA 127, 147</b> )	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	Hydric Soil Present?    Yes <input checked="" type="checkbox"/> No _____
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Remarks:  
**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate City/County: Rockingham County Sampling Date: 2024-08-27  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-B016a  
 Investigator(s): AC, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 3  
 Subregion (LRR or MLRA): P 136 Lat: 36.51325001 Long: -79.66008075 Datum: NAD 83  
 Soil Map Unit Name: CmD - Clover sandy loam, 8 to 15 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PEM W-B008. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	___ Surface Soil Cracks (B6)
___ Surface Water (A1)	___ Sparsely Vegetated Concave Surface (B8)
___ High Water Table (A2)	___ Drainage Patterns (B10)
___ Saturation (A3)	___ Moss Trim Lines (B16)
___ Water Marks (B1)	___ Dry-Season Water Table (C2)
___ Sediment Deposits (B2)	___ Crayfish Burrows (C8)
___ Drift Deposits (B3)	___ Saturation Visible on Aerial Imagery (C9)
___ Algal Mat or Crust (B4)	___ Stunted or Stressed Plants (D1)
___ Iron Deposits (B5)	___ Geomorphic Position (D2)
___ Inundation Visible on Aerial Imagery (B7)	___ Shallow Aquitard (D3)
___ Water-Stained Leaves (B9)	___ Microtopographic Relief (D4)
___ Aquatic Fauna (B13)	___ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators met.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B016a

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				
1. <u>Pinus taeda</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.00</u> (A/B)
2. <u>Carya glabra</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
<u>90</u> = Total Cover				
50% of total cover: <u>45.00</u> 20% of total cover: <u>18.00</u>				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				
1. <u>Carya glabra</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>75</u> x 4 = <u>300</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>165</u> (A) <u>570</u> (B)  Prevalence Index = B/A = <u>3.45</u>
2. <u>Liquidambar styraciflua</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Pinus taeda</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
<u>35</u> = Total Cover				
50% of total cover: <u>17.50</u> 20% of total cover: <u>7.00</u>				
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				
1. <u>Lonicera japonica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. <u>Rubus argutus</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Smilax rotundifolia</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
<u>40</u> = Total Cover				
50% of total cover: <u>20.00</u> 20% of total cover: <u>8.00</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
50% of total cover: _____    20% of total cover: _____				

Remarks: (Include photo numbers here or on a separate sheet.)

**No indicators are present.**

**Hydrophytic Vegetation Present?**    Yes \_\_\_\_\_    No



**SOIL**

Sampling Point: SP-B016a

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 10	10YR 4/3	100					Clay Loam	
10 - 16	10YR 6/3	98	7.5YR 5/6	2	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Gravel  
 Depth (inches): 16

Hydric Soil Present? Yes  No

Remarks:

**No indicators met.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-05  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B017  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.51656825 Long: -79.65662027 Datum: NAD 83  
 Soil Map Unit Name: CmB - Clover sandy loam, 2 to 8 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:  
**Wetland sample plot within PFO W-B009a. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)	
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
_____ Saturation (A3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B16)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____		
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____		
Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators B7, C3, D2 and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B017

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )					
1. <u>Liquidambar styraciflua</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>120.00</u> (A/B)	
2. <u>Quercus phellos</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
50% of total cover: <u>30</u>	<u>60</u>	= Total Cover			<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>45</u> x 2 = <u>90</u> FAC species <u>140</u> x 3 = <u>420</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>185</u> (A) <u>510</u> (B)  Prevalence Index = B/A = <u>2.75</u>
20% of total cover: <u>12</u>					
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )					
1. <u>Liquidambar styraciflua</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
50% of total cover: <u>15</u>	<u>30</u>	= Total Cover			
20% of total cover: <u>6</u>					
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )					
1. <u>Microstegium vimineum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
2. <u>Dichantheium scoparium</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>		
3. <u>Smilax rotundifolia</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
4. <u>Juncus effusus</u>	<u>15</u>		<u>FACW</u>		
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
50% of total cover: <u>47.5</u>	<u>95</u>	= Total Cover			
20% of total cover: <u>19</u>					
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )					
1. _____				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
2. _____					
3. _____					
4. _____					
5. _____					
_____ = Total Cover					
50% of total cover: _____					
20% of total cover: _____					

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test and prevalence index are met.**



**SOIL**

Sampling Point: SP-B017

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 12	10YR 5/2	80	7.5YR 4/6	20	C		Sandy Clay Loam	
12 - 21	10YR 6/3	70	10YR 5/6	30	C	M	Sandy Clay Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-05  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B018  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.51666334 Long: -79.65664601 Datum: NAD 83  
 Soil Map Unit Name: CmB - Clover sandy loam, 2 to 8 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PFO W-B009a. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B018

	Absolute % Cover	Dominant Species?	Indicator Status															
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. <u>Liquidambar styraciflua</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>9</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>55.55</u> (A/B)														
2. <u>Quercus phellos</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
<u>40</u> = Total Cover 50% of total cover: <u>20.00</u> 20% of total cover: <u>8.00</u>				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:right;">Total % Cover of:</td> <td style="width:50%; text-align:left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>55</u></td> <td>x 3 = <u>165</u></td> </tr> <tr> <td>FACU species <u>100</u></td> <td>x 4 = <u>400</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>160</u> (A)</td> <td><u>575</u> (B)</td> </tr> </table> <p style="text-align:center;">Prevalence Index = B/A = <u>3.59</u></p>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>55</u>	x 3 = <u>165</u>	FACU species <u>100</u>	x 4 = <u>400</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>160</u> (A)	<u>575</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>5</u>	x 2 = <u>10</u>																	
FAC species <u>55</u>	x 3 = <u>165</u>																	
FACU species <u>100</u>	x 4 = <u>400</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>160</u> (A)	<u>575</u> (B)																	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )																		
1. <u>Quercus phellos</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
2. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
3. <u>Liquidambar styraciflua</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
<u>20</u> = Total Cover 50% of total cover: <u>10.00</u> 20% of total cover: <u>4.00</u>																		
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )																		
1. <u>Lespedeza cuneata</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Rubus argutus</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
3. <u>Solidago canadensis</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
<u>90</u> = Total Cover 50% of total cover: <u>45.00</u> 20% of total cover: <u>18.00</u>																		
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. <u>Lonicera japonica</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
<u>10</u> = Total Cover 50% of total cover: <u>5.00</u> 20% of total cover: <u>2.00</u>																		
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																		

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test is passed.**



**SOIL**

Sampling Point: SP-B018

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 6	10YR 4/3	100					Sandy Clay Loam	
6 - 21	10YR 5/3	70	10YR 5/8	2	C	M	Sandy Clay Loam	
6 - 21	10YR 6/6	28					Sandy Clay Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-05  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B019  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.51703014 Long: -79.65640715 Datum: NAD 83  
 Soil Map Unit Name: CmB - Clover sandy loam, 2 to 8 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:  
**Wetland sample plot within PEM W-B009b. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators D2 and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B019

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>15</u> x 1 = <u>15</u> FACW species <u>70</u> x 2 = <u>140</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>15</u> x 4 = <u>60</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>215</u> (B)  Prevalence Index = B/A = <u>2.15</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>Juncus effusus</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Carex vulpinoidea</u>	<u>15</u>	<input type="checkbox"/>	<u>OBL</u>	
3. <u>Poa pratensis</u>	<u>15</u>	<input type="checkbox"/>	<u>FACU</u>	
4. <u>Juncus marginatus</u>	<u>10</u>	<input type="checkbox"/>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
<b>Rapid test, dominance test, and prevalence index are met.</b>				



**SOIL**

Sampling Point: SP-B019

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 21	7.5YR 5/2	60	10YR 5/6	10	C	M	Silty Clay	
0 - 21	7.5YR 6/2	30					Silty Clay	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-05  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B020  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.51705050 Long: -79.65637947 Datum: NAD 83  
 Soil Map Unit Name: CmB - Clover sandy loam, 2 to 8 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PEM W-B009b. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B020

<u>Tree Stratum</u> (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b>
50% of total cover: _____		20% of total cover: _____		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft r</u> )				Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>70</u> x 4 = <u>280</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>75</u> (A) <u>305</u> (B)  Prevalence Index = B/A = <u>4.06</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50% of total cover: _____		20% of total cover: _____		
<u>Herb Stratum</u> (Plot size: <u>5 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. <u>Lolium perenne</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Plantago aristata</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>_____</u>	
3. <u>Poa pratensis</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
4. <u>Allium vineale</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>	
5. <u>Gamochoeta pensylvanica</u>	<u>5</u>	<input type="checkbox"/>	<u>UPL</u>	
6. <u>Solanum carolinense</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
50% of total cover: <u>50</u>		20% of total cover: <u>20</u>		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		

Remarks: (Include photo numbers here or on a separate sheet.)

**No indicators are present.**



**SOIL**

Sampling Point: SP-B020

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 21	10YR 6/4	40					Silty Clay	
0 - 21	10YR 7/1	25					Silty Clay	
0 - 21	10YR 7/4	35					Silty Clay	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-05  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B021  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.5191816 Long: -79.65474876 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:  
**Wetland sample plot within PEM W-B010. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)	
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B16)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____		
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____		
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators D2 and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B021

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>75</u> x 2 = <u>150</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>225</u> (B)  Prevalence Index = B/A = <u>2.25</u>
50% of total cover: _____ 20% of total cover: _____				
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover: _____ 20% of total cover: _____				
Herb Stratum (Plot size: <u>5 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. <u>Juncus effusus</u>	50	✓	FACW	
2. <u>Calystegia sepium</u>	25	✓	FAC	
3. <u>Carex triangularis</u>	25	✓	FACW	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test and prevalence index are met.**



**SOIL**

Sampling Point: SP-B021

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 2	7.5YR 4/2	100						
2 - 8	7.5YR 5/2	95	2.5YR 5/8	5	C	M	Silty Clay	
8 - 21	7.5YR 6/2	90	7.5YR 6/8	10	C	M	Silty Clay	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-05  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B022  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.51913364 Long: -79.65461571 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PEM W-B010. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B022

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.00</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>90</u> x 4 = <u>360</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>390</u> (B)  Prevalence Index = B/A = <u>3.90</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>Dichantheium aciculare</u>	<u>80</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Diospyros virginiana</u>	<u>10</u>	<input type="checkbox"/>	<u>FAC</u>	
3. <u>Verbena incompta</u>	<u>10</u>	<input type="checkbox"/>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
<p><b>No indicators are present.</b></p>				



**SOIL**

Sampling Point: SP-B022

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 2	7.5YR 3/1	100					Clay Loam	
2 - 21	10YR 5/3	95	7.5YR 5/6	5	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Rockingham County Sampling Date: 2024-06-06  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B023  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.538134 Long: -79.636323 Datum: NAD 83  
 Soil Map Unit Name: CmB - Clover sandy loam, 2 to 8 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____	

Remarks:  
**Wetland sample plot within PEM W-B011. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)	
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B16)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators D2 and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B023

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>15</u> x 1 = <u>15</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>65</u> x 3 = <u>195</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>250</u> (B)  Prevalence Index = B/A = <u>2.50</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>Dichanthelium clandestinum</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Campsis radicans</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Juncus effusus</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
4. <u>Galium palustre</u>	<u>15</u>		<u>OBL</u>	
5. <u>Rumex crispus</u>	<u>10</u>		<u>FAC</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
<p><b>Dominance test and prevalence index are met.</b></p>				



**SOIL**

Sampling Point: SP-B023

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10YR 4/2	90	2.5YR 4/4	10	C	M	Silty Clay Loam	
4 - 21	10YR 5/2	85	7.5YR 6/8	15	C	M	Silty Clay Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-06  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B024  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.53820512 Long: -79.63626283 Datum: NAD 83  
 Soil Map Unit Name: CmB - Clover sandy loam, 2 to 8 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PEM W-B011. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	____ Surface Soil Cracks (B6)
____ Surface Water (A1)	____ Sparsely Vegetated Concave Surface (B8)
____ High Water Table (A2)	____ Drainage Patterns (B10)
____ Saturation (A3)	____ Moss Trim Lines (B16)
____ Water Marks (B1)	____ Dry-Season Water Table (C2)
____ Sediment Deposits (B2)	____ Crayfish Burrows (C8)
____ Drift Deposits (B3)	____ Saturation Visible on Aerial Imagery (C9)
____ Algal Mat or Crust (B4)	____ Stunted or Stressed Plants (D1)
____ Iron Deposits (B5)	____ Geomorphic Position (D2)
____ Inundation Visible on Aerial Imagery (B7)	____ Shallow Aquitard (D3)
____ Water-Stained Leaves (B9)	____ Microtopographic Relief (D4)
____ Aquatic Fauna (B13)	____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/></b>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B024

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>70</u> x 3 = <u>210</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>310</u> (B)  Prevalence Index = B/A = <u>3.10</u>
50% of total cover: _____		20% of total cover: _____		
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover: _____		20% of total cover: _____		
Herb Stratum (Plot size: <u>5 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. <u>Holcus lanatus</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Dichanthelium clandestinum</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Solidago canadensis</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
4. <u>Toxicodendron radicans</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
5. <u>Juncus effusus</u>	<u>5</u>		<u>FACW</u>	
6. <u>Tripsacum dactyloides</u>	<u>5</u>		<u>FACW</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
50% of total cover: <u>50</u>		20% of total cover: <u>20</u>		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test is passed.**



**SOIL**

Sampling Point: SP-B024

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 2	10YR 4/3	100					Silt Loam	
2 - 11	10YR 4/3	97	10YR 6/6	3	C	M	Silty Clay Loam	
11 - 21	2.5Y 6/1	80	7.5YR 6/8	20	C	M	Silty Clay	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-06  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B025  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.53946675 Long: -79.63440321 Datum: NAD 83  
 Soil Map Unit Name: CmB - Clover sandy loam, 2 to 8 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____			

Remarks:  
 Wetland sample plot within PEM W-B012. Vegetation and hydrology significantly disturbed by logging. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Indicators D2 and D5 are present.



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B025

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u>	(A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u>	(B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u>	(A/B)
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b>	
5. _____	_____	_____	_____	Total % Cover of: _____ Multiply by:	
6. _____	_____	_____	_____	OBL species <u>40</u>	x 1 = <u>40</u>
7. _____	_____	_____	_____	FACW species <u>15</u>	x 2 = <u>30</u>
8. _____	_____	_____	_____	FAC species <u>35</u>	x 3 = <u>105</u>
9. _____	_____	_____	_____	FACU species <u>10</u>	x 4 = <u>40</u>
_____	_____	_____	_____	UPL species <u>0</u>	x 5 = <u>0</u>
_____	_____	_____	_____	Column Totals: <u>100</u>	(A) <u>215</u> (B)
_____ = Total Cover				Prevalence Index = B/A = <u>2.15</u>	
50% of total cover: _____ 20% of total cover: _____				<b>Hydrophytic Vegetation Indicators:</b>	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
1. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. _____	_____	_____	_____	<b>Definitions of Four Vegetation Strata:</b>	
3. _____	_____	_____	_____	<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
4. _____	_____	_____	_____	<b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.	
5. _____	_____	_____	_____	<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
6. _____	_____	_____	_____	<b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____	
50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>					
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )					
1. <u>Dulichium arundinaceum</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>OBL</u>		
2. <u>Microstegium vimineum</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
3. <u>Juncus effusus</u>	<u>15</u>		<u>FACW</u>		
4. <u>Lonicera japonica</u>	<u>10</u>		<u>FACU</u>		
5. <u>Persicaria longiseta</u>	<u>10</u>		<u>FAC</u>		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
_____ = Total Cover					
50% of total cover: _____ 20% of total cover: _____					
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover					
50% of total cover: _____ 20% of total cover: _____					

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test and prevalence index are met.**



**SOIL**

Sampling Point: SP-B025

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 6	10YR 5/2	100					Sandy Loam	
6 - 21	10YR 6/2	98	10YR 6/6	2	C	M	Sandy Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-06  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B026  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR or MLRA): \_\_\_\_\_ Lat: 36.53952853 Long: -79.63448735 Datum: NAD 83  
 Soil Map Unit Name: CmB - Clover sandy loam, 2 to 8 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
--	--

Remarks:  
 Upland sample plot adjacent to PEM W-B012. Vegetation and hydrology significantly disturbed by logging. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1)      ___ True Aquatic Plants (B14) ___ High Water Table (A2)      ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3)      ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1)      ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2)      ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3)      ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4)      ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
---	--

<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  
 Clear cut area with large amounts of debris covering large portions of both upland and wetland sample plots. Small pockets of depression within area. Upland vegetation is scarce due to heavy tree debris.

Remarks:  
 No indicators are present.



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B026

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.66</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>5</u> x 1 = <u>5</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>30</u> (A) <u>90</u> (B)  Prevalence Index = B/A = <u>3.00</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				
1. <u>Eleocharis acicularis</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
2. <u>Lonicera japonica</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Pinus taeda</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
4. <u>Rumex crispus</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
5. <u>Solidago canadensis</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
6. <u>Vitis rotundifolia</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>30</u> = Total Cover				
50% of total cover: <u>15.00</u> 20% of total cover: <u>6.00</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Remarks: (Include photo numbers here or on a separate sheet.)				

**Dominance test is passed. Clear cut area with large amounts of tree debris covering large portion of both upland and wetland sample plots. upland vegetation is scarce due to heavy tree debris.**



**SOIL**

Sampling Point: SP-B026

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 21	10YR 5/2	10	10YR 6/6	2	C	M	Sandy Loam	
0 - 21	10YR 6/3	88					Sandy Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-11  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B056  
 Investigator(s): ES, LC, PM Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.52813651 Long: -79.64604124 Datum: NAD 83  
 Soil Map Unit Name: DaA - Dan River loam, 0 to 2 percent slopes, frequently flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
 Upland sample plot adjacent to PFO W-B027. Vegetation and hydrology significantly disturbed by natural gas pipeline right-of-way. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 No indicators are present.



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B056

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )					
1. <u>Acer rubrum</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60.00</u> (A/B)	
2. <u>Liquidambar styraciflua</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
3. <u>Juglans nigra</u>	<u>10</u>		<u>FACU</u>		
4. <u>Acer saccharum</u>	<u>5</u>		<u>FACU</u>		
5. _____					
6. _____					
7. _____					
<u>95</u> = Total Cover 50% of total cover: <u>47.5</u> 20% of total cover: <u>19</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>115</u> x 3 = <u>345</u> FACU species <u>2020</u> x 4 = <u>8080</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>2145</u> (A) <u>8475</u> (B)  Prevalence Index = B/A = <u>3.95</u>	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )					
1. <u>Acer negundo</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
2. <u>Juglans nigra</u>	<u>5</u>		<u>FACU</u>		
3. <u>Liquidambar styraciflua</u>	<u>5</u>		<u>FAC</u>		
4. <u>Acer negundo</u>	<u>5</u>		<u>FAC</u>		
5. <u>Acer saccharum</u>			<u>FACU</u>		
6. _____					
7. _____					
8. _____					
9. _____					
<u>35</u> = Total Cover 50% of total cover: <u>17.5</u> 20% of total cover: <u>7</u>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )					
1. <u>Rubus trivialis</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
2. <u>Elymus hystrix</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>UPL</u>		
3. <u>Smilax rotundifolia</u>	<u>5</u>		<u>FAC</u>		
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
<u>35</u> = Total Cover 50% of total cover: <u>17.5</u> 20% of total cover: <u>7</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )					
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
_____ = Total Cover 50% of total cover: _____    20% of total cover: _____				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Include photo numbers here or on a separate sheet.)					

**Dominance test is passed.**



**SOIL**

Sampling Point: SP-B056

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 7	10YR 4/3	100					Sandy Loam	
7 - 14	7.5YR 5/4	100					Sandy Loam	
14 - 21	7.5YR 4/6	100					Sandy Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate City/County: Rockingham County Sampling Date: 2024-06-12  
 Applicant/Owner: Mountain Valley PIPELINE LLC State: North Carolina Sampling Point: SP-B057  
 Investigator(s): P.Meier, E.Sanchez, L.Cooper Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.5281506 Long: -79.6461866 Datum: WGS 84  
 Soil Map Unit Name: DaA - Dan River loam, 0 to 2 percent slopes, frequently flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks:  <p style="font-size: 1.2em; margin-top: 10px;"><b>Wetland bench along UNT to Cascade Creek</b></p>	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1)      ___ True Aquatic Plants (B14) ___ High Water Table (A2)      ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3)      ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1)      ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2)      ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3)      ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4)      ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND HYDROLOGY INDICATORS B10, D2, AND D5 ARE MET.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B057

	Absolute % Cover	Dominant Species?	Indicator Status																													
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )																																
1. <u>Acer negundo</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>11</u> (A)  Total Number of Dominant Species Across All Strata: <u>12</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>91.66</u> (A/B)																												
2. <u>Platanus occidentalis</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																													
3. <u>Acer rubrum</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																													
4. <u>Liquidambar styraciflua</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																													
5. _____																																
6. _____																																
7. _____																																
$\frac{100}{50.00} = \text{Total Cover}$ 50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:center;"><u>20</u></td> <td style="text-align:center;">x 1 =</td> <td style="text-align:center;"><u>20</u></td> </tr> <tr> <td style="text-align:right;">OBL species</td> <td style="text-align:center;"><u>70</u></td> <td style="text-align:center;">x 2 =</td> <td style="text-align:center;"><u>140</u></td> </tr> <tr> <td style="text-align:right;">FACW species</td> <td style="text-align:center;"><u>145</u></td> <td style="text-align:center;">x 3 =</td> <td style="text-align:center;"><u>435</u></td> </tr> <tr> <td style="text-align:right;">FAC species</td> <td style="text-align:center;"><u>10</u></td> <td style="text-align:center;">x 4 =</td> <td style="text-align:center;"><u>40</u></td> </tr> <tr> <td style="text-align:right;">FACU species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 5 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td style="text-align:right;">UPL species</td> <td style="text-align:center;"><u>245</u></td> <td style="text-align:center;">(A)</td> <td style="text-align:center;"><u>635</u></td> </tr> <tr> <td style="text-align:right;">Column Totals:</td> <td></td> <td></td> <td style="text-align:center;"><u>635</u> (B)</td> </tr> </table> <p style="text-align:center;">Prevalence Index = B/A = <u>2.59</u></p>	Total % Cover of:	<u>20</u>	x 1 =	<u>20</u>	OBL species	<u>70</u>	x 2 =	<u>140</u>	FACW species	<u>145</u>	x 3 =	<u>435</u>	FAC species	<u>10</u>	x 4 =	<u>40</u>	FACU species	<u>0</u>	x 5 =	<u>0</u>	UPL species	<u>245</u>	(A)	<u>635</u>	Column Totals:			<u>635</u> (B)
Total % Cover of:	<u>20</u>	x 1 =	<u>20</u>																													
OBL species	<u>70</u>	x 2 =	<u>140</u>																													
FACW species	<u>145</u>	x 3 =	<u>435</u>																													
FAC species	<u>10</u>	x 4 =	<u>40</u>																													
FACU species	<u>0</u>	x 5 =	<u>0</u>																													
UPL species	<u>245</u>	(A)	<u>635</u>																													
Column Totals:			<u>635</u> (B)																													
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )																																
1. <u>Carpinus caroliniana</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																													
2. <u>Fraxinus pennsylvanica</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																													
3. <u>Ligustrum sinense</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																													
4. _____																																
5. _____																																
6. _____																																
7. _____																																
8. _____																																
9. _____																																
$\frac{40}{20.00} = \text{Total Cover}$ 50% of total cover: <u>20.00</u> 20% of total cover: <u>8.00</u>																																
<b>Herb Stratum</b> (Plot size: <u>10 ft r</u> )																																
1. <u>Panicum virginianum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																													
2. <u>Carex radiata</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																													
3. <u>Carex scoparia</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																													
4. <u>Glyceria striata</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>																													
5. <u>Cinna arundinacea</u>	<u>10</u>		<u>FACW</u>																													
6. _____																																
7. _____																																
8. _____																																
9. _____																																
10. _____																																
11. _____																																
$\frac{100}{50.00} = \text{Total Cover}$ 50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>																																
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																																
1. <u>Smilax rotundifolia</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																													
2. _____																																
3. _____																																
4. _____																																
5. _____																																
$\frac{5}{2.50} = \text{Total Cover}$ 50% of total cover: <u>2.50</u> 20% of total cover: <u>1.00</u>																																
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____																												
<p><b>DOMINANCE TEST AND PREVALENCE INDEX ARE MET.</b></p>																																



**SOIL**

Sampling Point: SP-B057

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 6	10YR 4/1	80	10YR 3/6	20	C	M	Sandy Loam	
6 - 20	10YR 5/1	80	10YR 4/6	20	C	M	Sandy Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**HYDRIC SOIL INDICATOR F3 IS MET.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate City/County: Rockingham County Sampling Date: 2024-08-27  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-B057a  
 Investigator(s): AC, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 3  
 Subregion (LRR or MLRA): P 136 Lat: 36.52808705 Long: -79.64613422 Datum: NAD 83  
 Soil Map Unit Name: DaA - Dan River loam, 0 to 2 percent slopes, frequently flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PFO W-B027. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators met.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B057a

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )					
1. <u>Acer saccharum</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25.00</u> (A/B)	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
50% of total cover: <u>5.00</u>	<u>10</u>	= Total Cover			<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>55</u> x 4 = <u>220</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>80</u> (A) <u>295</u> (B)  Prevalence Index = B/A = <u>3.68</u>
20% of total cover: <u>2.00</u>					
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )					
1. <u>Lonicera japonica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
2. <u>Celtis occidentalis</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
3. <u>Vitis rotundifolia</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
4. <u>Chasmanthium latifolium</u>	<u>10</u>		<u>FACU</u>		
5. <u>Smilax rotundifolia</u>	<u>10</u>		<u>FAC</u>		
6. _____					
7. _____					
8. _____					
9. _____					
50% of total cover: <u>35.00</u>	<u>70</u>	= Total Cover			
20% of total cover: <u>14.00</u>					
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )					
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
50% of total cover: _____		= Total Cover			
20% of total cover: _____					
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )					
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
50% of total cover: _____		= Total Cover			
20% of total cover: _____					
Remarks: (Include photo numbers here or on a separate sheet.)					
<b>No indicators met.</b>					

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ 1 - Rapid Test for Hydrophytic Vegetation  
 \_\_\_ 2 - Dominance Test is >50%  
 \_\_\_ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No



**SOIL**

Sampling Point: SP-B057a

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 20	10YR 3/6	100					Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators met.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate City/County: Rockingham County Sampling Date: 2024-06-12  
 Applicant/Owner: Mountain Valley PIPELINE LLC State: North Carolina Sampling Point: SP-B058  
 Investigator(s): P.Meier, E.Sanchez, L.Cooper Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.5293623 Long: -79.6448313 Datum: WGS 84  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?    Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present?                    Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present?            Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks:  <p align="center"><b>PEM W-B028 IN FIELD SOUTH OF CIRCLE D BAR ROAD</b></p>	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1)                    ___ True Aquatic Plants (B14) ___ High Water Table (A2)                ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1)                        ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2)                ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3)                      ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4)                 ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?        Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
  

**WETLAND HYDROLOGY INDICATORS C3, D2, AND D5 ARE MET.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B058

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>20</u> x 1 = <u>20</u> FACW species <u>65</u> x 2 = <u>130</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>105</u> (A) <u>210</u> (B)  Prevalence Index = B/A = <u>2.00</u>
50% of total cover: _____		20% of total cover: _____		
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )</b>				
1. <u>Platanus occidentalis</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>2.50</u>		20% of total cover: <u>1.00</u>		
<b>Herb Stratum (Plot size: <u>10 ft r</u> )</b>				
1. <u>Juncus effusus</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Arthraxon hispidus</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Murdannia keisak</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
4. <u>Bidens aristosa</u>	<u>10</u>	_____	<u>FACW</u>	
5. <u>Solidago gigantea</u>	<u>10</u>	_____	<u>FACW</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>50.00</u>		20% of total cover: <u>20.00</u>		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		
Remarks: (Include photo numbers here or on a separate sheet.)  <b>DOMINANCE TEST AND PREVALENCE INDEX ARE MET.</b>				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____				



**SOIL**

Sampling Point: SP-B058

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 8	10YR 4/2	80	10YR 4/6	10	C	M	Sandy Clay Loam	
0 - 8			10YR 4/6	10	C	PL	Sandy Clay Loam	
8 - 20	10YR 7/1	80	10YR 6/8	20	C	M	Silty Clay Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**HYDRIC SOIL INDICATOR F3 IS MET.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-12  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B059  
 Investigator(s): ES, LC, PM Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Mound Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.5145835 Long: -79.6592419 Datum: NAD 83  
 Soil Map Unit Name: CmD - Clover sandy loam, 8 to 15 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
 Upland sample plot adjacent to PEM W-B028. Vegetation and hydrology significantly disturbed by natural gas pipeline right-of-way. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.

**HYDROLOGY**

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 No indicators are present.



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B059

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status		
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25.00</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>75</u> x 4 = <u>300</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>95</u> (A) <u>340</u> (B)  Prevalence Index = B/A = <u>3.57</u>	
50% of total cover: _____		20% of total cover: _____			
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
50% of total cover: _____		20% of total cover: _____			
Herb Stratum (Plot size: <u>5 ft r</u> )					
1. <u>Solidago canadensis</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
2. <u>Lespedeza cuneata</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
3. <u>Bidens frondosa</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>		
4. <u>Schizachyrium scoparium</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
5. <u>Rubus trivialis</u>	<u>10</u>	<input type="checkbox"/>	<u>FACU</u>		
6. <u>Cyperus echinatus</u>	<u>10</u>	<input type="checkbox"/>	<u>FACU</u>		
7. <u>Eupatorium capillifolium</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>		
8. <u>Juncus effusus</u>	<u>5</u>	<input type="checkbox"/>	<u>FACW</u>		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
<u>95</u> = Total Cover				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
50% of total cover: <u>47.50</u>		20% of total cover: <u>19.00</u>			
Woody Vine Stratum (Plot size: <u>30 ft r</u> )					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____      No <input checked="" type="checkbox"/>	
50% of total cover: _____		20% of total cover: _____			

Remarks: (Include photo numbers here or on a separate sheet.)

**No tests are passed.**



**SOIL**

Sampling Point: SP-B059

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 18	7.5YR 6/2	99	7.5YR 7/6	1	C	M	Sandy Loam	
18 - 21	7.5YR 6/2	75					Sandy Loam	
18 - 21	7.5YR 7/1	20	5YR 6/6	5	C	M	Sandy Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> (MLRA 147, 148)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> (MLRA 136, 147)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	
<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	--

Remarks:  
**Indicator F3 is present.**

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-12  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B060  
 Investigator(s): ES, LC, PM Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-1  
 Subregion (LRR or MLRA): P 136 Lat: 36.53054083 Long: -79.64263374 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____	

Remarks:  
 Wetland sample plot within PEM W-B029. Vegetation and hydrology significantly disturbed by natural gas pipeline right-of-way. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)	
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B16)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Indicators D2 and D5 are present.



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B060

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.66</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>20</u> x 1 = <u>20</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>35</u> x 3 = <u>105</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>265</u> (B)  Prevalence Index = B/A = <u>2.65</u>
50% of total cover: _____		20% of total cover: _____		
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50% of total cover: _____		20% of total cover: _____		
Herb Stratum (Plot size: <u>5 ft r</u> )				
1. <u>Arthraxon hispidus</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.   <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
2. <u>Carex vulpinoidea</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
3. <u>Cyperus echinatus</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
4. <u>Rumex crispus</u>	<u>10</u>		<u>FAC</u>	
5. <u>Juncus effusus</u>	<u>10</u>		<u>FACW</u>	
6. <u>Diodia virginiana</u>	<u>10</u>		<u>FACW</u>	
7. <u>Andropogon virginicus</u>	<u>10</u>		<u>FACU</u>	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>50.00</u>		20% of total cover: <u>20.00</u>		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test is passed.**

**SOIL**

Sampling Point: SP-B060

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 8	10YR 4/2	75					Silt Loam	
0 - 8	10YR 5/2	22	10YR 5/8	3	C	M	Silt Loam	
8 - 16	10YR 4/3	30					Silty Clay	
8 - 16	10YR 5/2	65	10YR 5/8	5	C	M	Silty Clay	
16 - 21	10YR 5/6	90	10YR 4/3	10	C	M	Sandy Clay	
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-12  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B061  
 Investigator(s): ES, LC, PM Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.53066314 Long: -79.64269308 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
 Upland sample plot adjacent to PEM W-B029. Vegetation and hydrology significantly disturbed by natural gas pipeline right-of-way. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 No indicators are present.

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B061

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.33</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>25</u> x 2 = <u>50</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>70</u> x 4 = <u>280</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>345</u> (B)  Prevalence Index = B/A = <u>3.45</u>
50% of total cover: _____		20% of total cover: _____		
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover: _____		20% of total cover: _____		
Herb Stratum (Plot size: <u>5 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. <u>Lespedeza cuneata</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Solidago altissima</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Bidens frondosa</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
4. <u>Rubus trivialis</u>	<u>10</u>	<input type="checkbox"/>	<u>FACU</u>	
5. <u>Arthraxon hispidus</u>	<u>5</u>	<input type="checkbox"/>	<u>FAC</u>	
6. <u>Cyperus echinatus</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>	
7. <u>Ambrosia artemisiifolia</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>100</u> = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
50% of total cover: <u>50.00</u>		20% of total cover: <u>20.00</u>		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		

Remarks: (Include photo numbers here or on a separate sheet.)

**No tests are passed.**



**SOIL**

Sampling Point: SP-B061

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 10	10YR 4/4	50					Silty Clay Loam	
0 - 10	10YR 5/4	50					Silty Clay Loam	
10 - 21	10YR 5/3	38	10YR 5/6	2	C	M	Sandy Clay	
10 - 21	10YR 4/3	60					Sandy Clay	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate City/County: Rockingham County Sampling Date: 2024-06-12  
 Applicant/Owner: Mountain Valley PIPELINE LLC State: North Carolina Sampling Point: SP-B062  
 Investigator(s): P.Meier, E.Sanchez, L.Cooper Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.5293114 Long: -79.6431587 Datum: WGS 84  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____			

Remarks:  
**PSS WETLAND W-B030 SOUTHWEST OF CIRCLE BAR D RANCH ROAD.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)	
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
_____ Saturation (A3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B16)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

**Field Observations:**  
 Surface Water Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
**Wetland Hydrology Present? Yes  No \_\_\_\_\_**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**WETLAND HYDROLOGY INDICATORS C3, D2, AND D5 ARE MET.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B062

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>20</u> x 1 = <u>20</u> FACW species <u>120</u> x 2 = <u>240</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>150</u> (A) <u>290</u> (B)  Prevalence Index = B/A = <u>1.93</u>
1. <u>Fraxinus pennsylvanica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Cephalanthus occidentalis</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
3. <u>Diospyros virginiana</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
4. <u>Rosa palustris</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>25.00</u>		20% of total cover: <u>10.00</u>		
<b>Herb Stratum</b> (Plot size: <u>10 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>Carex scoparia</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Juncus effusus</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. <u>Hibiscus moscheutos ssp. moscheutos</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
4. <u>Cinna arundinacea</u>	<u>10</u>	_____	<u>FACW</u>	
5. <u>Diodia virginiana</u>	<u>10</u>	_____	<u>FACW</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>50.00</u>		20% of total cover: <u>20.00</u>		
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.   <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		

Remarks: (Include photo numbers here or on a separate sheet.)

**DOMINANCE TEST AND PREVALENCE INDEX ARE MET.**

**SOIL**

Sampling Point: SP-B062

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 6	10YR 5/1	80	7.5YR 4/4	10	C	M	Sandy Clay Loam	
0 - 6			7.5YR 4/4	10	C	PL	Sandy Clay Loam	
6 - 20	10YR 5/2	80	10YR 3/4	10	C	M	Sandy Clay Loam	
6 - 20			10YR 4/4	10	C	M	Sandy Clay Loam	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**HYDRIC SOIL INDICATOR F3 IS MET.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Rockingham County Sampling Date: 2024-06-12  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B063  
 Investigator(s): ES, LC, PM Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2  
 Subregion (LRR or MLRA): P 136 Lat: 36.52953553 Long: -79.64318493 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
 Upland sample plot adjacent to PSS W-B030. Vegetation and hydrology significantly disturbed by natural gas pipeline right-of-way. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Indicator D5 is present.

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B063

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.66</u> (A/B)
1.				
2.				
3.				
4.				
5.				
6.				
7.				
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>60</u> x 4 = <u>240</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>320</u> (B)  Prevalence Index = B/A = <u>3.20</u>
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1.	<u>Solidago altissima</u>	<u>60</u>	<input checked="" type="checkbox"/> <u>FACU</u>	
2.	<u>Bidens frondosa</u>	<u>20</u>	<input checked="" type="checkbox"/> <u>FACW</u>	
3.	<u>Panicum dichotomiflorum</u>	<u>20</u>	<input checked="" type="checkbox"/> <u>FACW</u>	
4.				
5.				
6.				
7.				
8.				
9.				
_____ = Total Cover				
50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.   <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1.				
2.				
3.				
4.				
5.				
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test is passed.**



**SOIL**

Sampling Point: SP-B063

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 11	2.5Y 4/4	100					Sandy Loam	
11 - 21	2.5Y 4/4	65					Clay Loam	
11 - 21	2.5Y 6/4	30					Clay Loam	
11 - 21	2.5Y 4/2	5					Clay Loam	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-12  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B064  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Undulating Slope (%): 1-2  
 Subregion (LRR or MLRA): P 136 Lat: 36.53122267 Long: -79.64332934 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
 Upland sample plot adjacent to PSS W-B031b. Vegetation and hydrology significantly disturbed by natural gas pipeline right-of-way. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 No indicators are present.



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B064

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status		
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.00</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>80</u> x 4 = <u>320</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>365</u> (B)  Prevalence Index = B/A = <u>3.65</u>	
50% of total cover: _____		20% of total cover: _____			
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
50% of total cover: _____		20% of total cover: _____			
Herb Stratum (Plot size: <u>5 ft r</u> )					
1. <u>Lespedeza cuneata</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
2. <u>Eupatorium capillifolium</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
3. <u>Rubus trivialis</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
4. <u>Bidens frondosa</u>	<u>15</u>		<u>FACW</u>		
5. <u>Solidago altissima</u>	<u>15</u>		<u>FACU</u>		
6. <u>Ranunculus hispidus</u>	<u>5</u>		<u>FAC</u>		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
<u>100</u> = Total Cover				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
50% of total cover: <u>50.00</u>		20% of total cover: <u>20.00</u>			
Woody Vine Stratum (Plot size: <u>30 ft r</u> )					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____      No <input checked="" type="checkbox"/>	
50% of total cover: _____		20% of total cover: _____			

Remarks: (Include photo numbers here or on a separate sheet.)

**No tests are passed.**

**SOIL**

Sampling Point: SP-B064

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 11	10YR 4/4	100					Sandy Loam	
11 - 21	10YR 5/4	55	5YR 4/4	3	C	M	Sandy Loam	
11 - 21	10YR 4/4	42					Sandy Clay Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**



## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-12  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B065  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.5311762 Long: -79.64350305 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
--	---

Remarks:  
 Wetland sample plot within PSS W-B031b. Vegetation and hydrology significantly disturbed by natural gas pipeline right-of-way. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1)      ___ True Aquatic Plants (B14) ___ High Water Table (A2)      ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3)      ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1)      ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2)      ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3)      ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4)      ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Indicators D2 and D5 are present.

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B065

<u>Tree Stratum</u> (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.66</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b>
50% of total cover: _____		20% of total cover: _____		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft r</u> )				Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>115</u> x 2 = <u>230</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>30</u> x 4 = <u>120</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>150</u> (A) <u>365</u> (B)
1. <u>Platanus occidentalis</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Prevalence Index = B/A = <u>2.43</u>  <b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover: <u>30.00</u>		20% of total cover: <u>12.00</u>		
<u>Herb Stratum</u> (Plot size: <u>5 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. <u>Solidago altissima</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Dichantheium scoparium</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. <u>Juncus effusus</u>	<u>10</u>	_____	<u>FACW</u>	
4. <u>Arthraxon hispidus</u>	<u>5</u>	_____	<u>FAC</u>	
5. <u>Carex tribuloides</u>	<u>5</u>	_____	<u>FACW</u>	
6. <u>Bidens frondosa</u>	<u>5</u>	_____	<u>FACW</u>	
7. <u>Platanus occidentalis</u>	<u>5</u>	_____	<u>FACW</u>	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
50% of total cover: _____		20% of total cover: _____		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test is passed.**



**SOIL**

Sampling Point: SP-B065

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 9	10YR 4/2	95	5YR 5/6	5	C	M	Sandy Clay	
9 - 21	10YR 5/1	70	7.5YR 5/8	8	C	M	Sandy Clay	
9 - 21	10YR 6/4	22					Sandy Clay	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-12  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B066  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.53093912 Long: -79.64380614 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____	

Remarks:  
 Wetland sample plot within PEM W-B031a. Vegetation and hydrology significantly disturbed by natural gas pipeline right-of-way. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)	
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B16)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Indicators D2 and D5 are present.



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B066

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>55</u> x 2 = <u>110</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>270</u> (B)  Prevalence Index = B/A = <u>2.70</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>Juncus effusus</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Arthraxon hispidus</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Dichantherium scoparium</u>	<u>15</u>		<u>FACW</u>	
4. <u>Eupatorium capillifolium</u>	<u>15</u>		<u>FACU</u>	
5. <u>Lespedeza cuneata</u>	<u>10</u>		<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>100</u> = Total Cover				
50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
<b>Dominance test is passed.</b>				

**SOIL**

Sampling Point: SP-B066

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 15	10YR 5/1	30					Sandy Clay	
0 - 15	10YR 6/1	60	7.5YR 4/6	10	C	M	Sandy Clay	
15 - 21	10YR 6/2	85	10YR 5/6	15	C	M	Sandy Clay	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate City/County: Rockingham County Sampling Date: 2024-06-12  
 Applicant/Owner: Mountain Valley PIPELINE LLC State: North Carolina Sampling Point: SP-B067  
 Investigator(s): P.Meier, E.Sanchez, L.Cooper Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.5345211 Long: -79.639083 Datum: WGS 84  
 Soil Map Unit Name: CmD - Clover sandy loam, 8 to 15 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?    Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present?                    Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present?          Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks:  <p align="center"><b>PEM WETLAND W-B032; AREA SIGNIFICANTLY IMPACTED BY CATTLE.</b></p>	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1)                    ___ True Aquatic Plants (B14) ___ High Water Table (A2)                ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3)                         ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1)                        ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2)                ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3)                      ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4)                 ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?        Yes <input checked="" type="checkbox"/> No _____    Depth (inches): <u>10</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
  

**WETLAND HYDROLOGY INDICATORS B10, D2, AND D5 ARE MET.**

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B067

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>30</u> x 1 = <u>30</u> FACW species <u>50</u> x 2 = <u>100</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>190</u> (B)  Prevalence Index = B/A = <u>1.90</u>
50% of total cover: _____		20% of total cover: _____		
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )</b>				
1. <u>Liquidambar styraciflua</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>5.00</u>		20% of total cover: <u>2.00</u>		
<b>Herb Stratum (Plot size: <u>10 ft r</u> )</b>				
1. <u>Carex frankii</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
2. <u>Juncus effusus</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. <u>Mentha spicata</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
4. <u>Arthraxon hispidus</u>	<u>10</u>	_____	<u>FAC</u>	
5. <u>Bidens aristosa</u>	<u>10</u>	_____	<u>FACW</u>	
6. <u>Persicaria hydropiperoides</u>	<u>10</u>	_____	<u>OBL</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>45.00</u>		20% of total cover: <u>18.00</u>		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		
Remarks: (Include photo numbers here or on a separate sheet.)				

**DOMINANCE TEST AND PREVALENCE INDEX ARE MET.**

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ 1 - Rapid Test for Hydrophytic Vegetation  
 2 - Dominance Test is >50%  
 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**  
  
**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  
  
**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  
  
**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  
  
**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_



**SOIL**

Sampling Point: SP-B067

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 6	10YR 5/1	80	7.5YR 3/4	20	C	M	Sandy Loam	
6 - 20	10YR 5/1	80	10YR 4/6	20	C	M	Sandy Clay Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**HYDRIC SOIL INDICATOR F3 IS MET.**

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate City/County: Pittsylvania Sampling Date: 2024-06-12  
 Applicant/Owner: Mountain Valley PIPELINE LLC State: Virginia Sampling Point: SP-B068  
 Investigator(s): P.Meier, E.Sanchez, L.Cooper Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Base Slope Local relief (concave, convex, none): Concave Slope (%): 5  
 Subregion (LRR or MLRA): \_\_\_\_\_ Lat: 36.5346677 Long: -79.6389047 Datum: WGS 84  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Cattle impacted Upland adjacent to PEM W-B032.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B068

	Absolute % Cover	Dominant Species?	Indicator Status															
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. <u>Liquidambar styraciflua</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0</u> (A/B)														
2. <u>Quercus phellos</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
$\frac{20}{100} = \text{Total Cover}$ 50% of total cover: <u>10</u> 20% of total cover: <u>4</u>				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>90</u></td> <td>x 4 = <u>360</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>120</u> (A)</td> <td><u>440</u> (B)</td> </tr> </table> <p style="text-align:center;">Prevalence Index = B/A = <u>3.67</u></p>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>90</u>	x 4 = <u>360</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>120</u> (A)	<u>440</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>20</u>	x 3 = <u>60</u>																	
FACU species <u>90</u>	x 4 = <u>360</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>120</u> (A)	<u>440</u> (B)																	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )																		
1. _____																		
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
$\text{_____} = \text{Total Cover}$ 50% of total cover: _____      20% of total cover: _____				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )																		
1. <u>Lolium perenne</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.													
2. <u>Trifolium repens</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
3. <u>Juncus effusus</u>	<u>10</u>		<u>FACW</u>															
4. <u>Solanum carolinense</u>	<u>10</u>		<u>FACU</u>															
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
$\frac{100}{100} = \text{Total Cover}$ 50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				<b>Hydrophytic Vegetation Present?</b> Yes _____      No <input checked="" type="checkbox"/>														
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. _____																		
2. _____																		
3. _____																		
4. _____																		
5. _____																		
$\text{_____} = \text{Total Cover}$ 50% of total cover: _____      20% of total cover: _____																		

Remarks: (Include photo numbers here or on a separate sheet.)

**NO INDICATORS OF HYDROPHYTIC VEGETATION ARE PRESENT.**

**SOIL**

Sampling Point: SP-B068

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10YR 4/2	95	10YR 4/6	5	C	M	Sandy Loam	
4 - 12	10YR 6/3	95	7.5YR 6/8	5	C	M	Sandy Loam	
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**NO HYDRIC SOIL INDICATORS ARE MET.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate City/County: Rockingham County Sampling Date: 2024-08-27  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-B069a  
 Investigator(s): AC, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Terrace/floodplain Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR or MLRA): P 136 Lat: 36.52555808 Long: -79.64853518 Datum: NAD 83  
 Soil Map Unit Name: DaA - Dan River loam, 0 to 2 percent slopes, frequently flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____			

Remarks:  
 Wetland sample plot within W-B053. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions 3 months prior to survey. This wetland exhibited disturbed hydrology, vegetation, and soils from poor farming practices, resulting in an isolated feature that does not connect down valley to any nearby WOTUS.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)	
___ Surface Water (A1)	___ True Aquatic Plants (B14)	___ Sparsely Vegetated Concave Surface (B8)	
___ High Water Table (A2)	___ Hydrogen Sulfide Odor (C1)	___ Drainage Patterns (B10)	
___ Saturation (A3)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Moss Trim Lines (B16)	
___ Water Marks (B1)	___ Presence of Reduced Iron (C4)	___ Dry-Season Water Table (C2)	
___ Sediment Deposits (B2)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Crayfish Burrows (C8)	
___ Drift Deposits (B3)	___ Thin Muck Surface (C7)	___ Saturation Visible on Aerial Imagery (C9)	
___ Algal Mat or Crust (B4)	___ Other (Explain in Remarks)	___ Stunted or Stressed Plants (D1)	
___ Iron Deposits (B5)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
___ Inundation Visible on Aerial Imagery (B7)		___ Shallow Aquitard (D3)	
___ Water-Stained Leaves (B9)		___ Microtopographic Relief (D4)	
___ Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Indicators D2 and D5 are present.

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B069a

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>55</u> x 2 = <u>110</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>130</u> (A) <u>385</u> (B)  Prevalence Index = B/A = <u>2.96</u>
50% of total cover: _____		20% of total cover: _____		
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )</b>				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover: _____		20% of total cover: _____		
<b>Herb Stratum (Plot size: <u>5 ft r</u> )</b>				
1. <u>Boehmeria cylindrica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
2. <u>Lonicera japonica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Juncus effusus</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
4. <u>Rubus argutus</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
5. <u>Toxicodendron radicans</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
6. <u>Chamaecrista fasciculata</u>	<u>10</u>	_____	<u>FACU</u>	
7. <u>Eupatorium serotinum</u>	<u>10</u>	_____	<u>FAC</u>	
8. <u>Persicaria pensylvanica</u>	<u>10</u>	_____	<u>FACW</u>	
9. <u>Diodia virginiana</u>	<u>5</u>	_____	<u>FACW</u>	
10. <u>Solidago altissima</u>	<u>5</u>	_____	<u>FACU</u>	
11. <u>Vernonia noveboracensis</u>	<u>5</u>	_____	<u>FACW</u>	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
50% of total cover: <u>65.00</u>		20% of total cover: <u>26.00</u>		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test indicator is met.**



**SOIL**

Sampling Point: SP-B069a

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 20	10YR 5/3						Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**No indicators are present. Surrounding area recently tilled, soils previously disturbed.**

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate City/County: Rockingham County Sampling Date: 2024-08-27  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-B069b  
 Investigator(s): AC, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Terrace/floodplain Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR or MLRA): P 136 Lat: 36.52555028 Long: -79.64868399 Datum: NAD 83  
 Soil Map Unit Name: DaA - Dan River loam, 0 to 2 percent slopes, frequently flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PEM W-A053. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B069b

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>70</u> x 4 = <u>280</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>95</u> (A) <u>335</u> (B)  Prevalence Index = B/A = <u>3.52</u>
50% of total cover: _____		20% of total cover: _____		
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50% of total cover: _____		20% of total cover: _____		
Herb Stratum (Plot size: <u>5 ft r</u> )				
1. <u>Rubus argutus</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.   <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
2. <u>Solidago altissima</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Lespedeza cuneata</u>	<u>15</u>	<input type="checkbox"/>	<u>FACU</u>	
4. <u>Toxicodendron radicans</u>	<u>15</u>	<input type="checkbox"/>	<u>FAC</u>	
5. <u>Carex lurida</u>	<u>10</u>	<input type="checkbox"/>	<u>OBL</u>	
6. <u>Chamaecrista fasciculata</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>95</u> = Total Cover				
50% of total cover: <u>47.50</u>		20% of total cover: <u>19.00</u>		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____		20% of total cover: _____		

Remarks: (Include photo numbers here or on a separate sheet.)

**No indicators are present.**

**SOIL**

Sampling Point: SP-B069b

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 20	10YR 3/6	100					Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-12  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B070  
 Investigator(s): ES, LC, PM Section, Township, Range: P 136  
 Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 0-1  
 Subregion (LRR or MLRA): P 136 Lat: 36.5207652 Long: -79.65324675 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland confirmation plot near previously-marked wetland in fallow field. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicator D2 is present.**

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B070

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status		
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.33</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>30</u> x 3 = <u>90</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>90</u> (A) <u>340</u> (B)  Prevalence Index = B/A = <u>3.77</u>	
50% of total cover: _____		20% of total cover: _____			
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
50% of total cover: _____		20% of total cover: _____			
Herb Stratum (Plot size: <u>5 ft r</u> )					
1. <u>Rumex crispus</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
2. <u>Vernonia angustifolia</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
3. <u>Lespedeza cuneata</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
4. <u>Bromus inermis</u>	<u>10</u>		<u>UPL</u>		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
<u>90</u> = Total Cover					
50% of total cover: <u>45.00</u>		20% of total cover: <u>18.00</u>			
Woody Vine Stratum (Plot size: <u>30 ft r</u> )					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>	
50% of total cover: _____		20% of total cover: _____			

Remarks: (Include photo numbers here or on a separate sheet.)

**No indicators are present.**



**SOIL**

Sampling Point: SP-B070

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 2	7.5YR 3/1	100						
2 - 20	10YR 5/3	95	7.5YR 5/6	5	C	M		
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-17  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B090  
 Investigator(s): ES, JM Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.53427844 Long: -79.64258431 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
 Upland sample plot adjacent to PFO W-B045. Vegetation and hydrology significantly disturbed by natural gas pipeline right-of-way. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Indicator D5 is present.



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B090

	Absolute % Cover	Dominant Species?	Indicator Status																													
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )																																
1. <u>Liquidambar styraciflua</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>85.71</u> (A/B)																												
2. <u>Quercus alba</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>																													
3. <u>Salix nigra</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>OBL</u>																													
4. <u>Carpinus caroliniana</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																													
5. <u>Ulmus rubra</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																													
6. _____																																
7. _____																																
<u>60</u> = Total Cover 50% of total cover: <u>30.00</u> 20% of total cover: <u>12.00</u>				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:center;"><u>20</u></td> <td style="text-align:center;">x 1 =</td> <td style="text-align:center;"><u>20</u></td> </tr> <tr> <td>OBL species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 2 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center;"><u>50</u></td> <td style="text-align:center;">x 3 =</td> <td style="text-align:center;"><u>150</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;"><u>10</u></td> <td style="text-align:center;">x 4 =</td> <td style="text-align:center;"><u>40</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 5 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>UPL species</td> <td colspan="3">Column Totals: <u>80</u> (A)    <u>210</u> (B)</td> </tr> <tr> <td colspan="4" style="text-align:center;">Prevalence Index = B/A = <u>2.62</u></td> </tr> </table>	Total % Cover of:	<u>20</u>	x 1 =	<u>20</u>	OBL species	<u>0</u>	x 2 =	<u>0</u>	FACW species	<u>50</u>	x 3 =	<u>150</u>	FAC species	<u>10</u>	x 4 =	<u>40</u>	FACU species	<u>0</u>	x 5 =	<u>0</u>	UPL species	Column Totals: <u>80</u> (A) <u>210</u> (B)			Prevalence Index = B/A = <u>2.62</u>			
Total % Cover of:	<u>20</u>	x 1 =	<u>20</u>																													
OBL species	<u>0</u>	x 2 =	<u>0</u>																													
FACW species	<u>50</u>	x 3 =	<u>150</u>																													
FAC species	<u>10</u>	x 4 =	<u>40</u>																													
FACU species	<u>0</u>	x 5 =	<u>0</u>																													
UPL species	Column Totals: <u>80</u> (A) <u>210</u> (B)																															
Prevalence Index = B/A = <u>2.62</u>																																
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )																																
1. _____					<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																											
2. _____																																
3. _____																																
4. _____																																
5. _____																																
6. _____																																
7. _____																																
8. _____																																
9. _____																																
_____ = Total Cover 50% of total cover: _____    20% of total cover: _____																																
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )																																
1. <u>Microstegium vimineum</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																												
2. <u>Ludwigia peploides</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>OBL</u>																													
3. _____																																
4. _____																																
5. _____																																
6. _____																																
7. _____																																
8. _____																																
9. _____																																
10. _____																																
11. _____																																
<u>20</u> = Total Cover 50% of total cover: <u>10.00</u> 20% of total cover: <u>4.00</u>																																
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																																
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____																												
2. _____																																
3. _____																																
4. _____																																
5. _____																																
_____ = Total Cover 50% of total cover: _____    20% of total cover: _____																																

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test is passed.**

**SOIL**

Sampling Point: SP-B090

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 21	7.5YR 4/6	100					Silt Loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-17  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B091  
 Investigator(s): ES, JM Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-1  
 Subregion (LRR or MLRA): P 136 Lat: 36.53428439 Long: -79.64264902 Datum: NAD 83  
 Soil Map Unit Name: BaB - Banister loam, 0 to 4 percent slopes, rarely flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:  
 Wetland sample plot within PFO W-B045. Vegetation and hydrology significantly disturbed by natural gas pipeline right-of-way. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> High Water Table (A2)	_____ Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	<input checked="" type="checkbox"/> Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>10</u>	
Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>8</u> (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Indicators A2, A3, D2 and D5 are present.

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B091

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )																				
1. <u>Acer rubrum</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)																
2. <u>Carpinus caroliniana</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																	
3. <u>Fraxinus pennsylvanica</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
<u>45</u> = Total Cover 50% of total cover: <u>22.50</u> 20% of total cover: <u>9.00</u>				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:right;">Total % Cover of:</td> <td style="width:50%; text-align:left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>80</u></td> <td>x 3 = <u>240</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>120</u> (A)</td> <td><u>310</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>2.58</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>80</u>	x 3 = <u>240</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>120</u> (A)	<u>310</u> (B)	Prevalence Index = B/A = <u>2.58</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>10</u>	x 1 = <u>10</u>																			
FACW species <u>30</u>	x 2 = <u>60</u>																			
FAC species <u>80</u>	x 3 = <u>240</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>120</u> (A)	<u>310</u> (B)																			
Prevalence Index = B/A = <u>2.58</u>																				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )																				
1. _____				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
_____ = Total Cover 50% of total cover: _____    20% of total cover: _____				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )																				
1. <u>Microstegium vimineum</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																	
2. <u>Impatiens capensis</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																	
3. <u>Ludwigia peploides</u>	<u>10</u>		<u>OBL</u>																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
<u>75</u> = Total Cover 50% of total cover: <u>37.50</u> 20% of total cover: <u>15.00</u>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____																
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
_____ = Total Cover 50% of total cover: _____    20% of total cover: _____																				

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test is passed.**



**SOIL**

Sampling Point: SP-B091

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 12	7.5YR 5/1	70	7.5YR 5/4	5	C	M	Silty Clay	
0 - 12	10YR 4/2	25					Silty Clay	
12 - 21	10YR 5/1	100					Sandy Clay Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-05  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B102  
 Investigator(s): ES, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 36.50159731 Long: -79.67157062 Datum: NAD 83  
 Soil Map Unit Name: CsA - Codorus loam, 0 to 2 percent slopes, frequently flooded NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
--	---

Remarks:  
**Wetland sample plot within PFO W-B006. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1)      ___ True Aquatic Plants (B14) ___ High Water Table (A2)      ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3)      ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1)      ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2)      ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3)      ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4)      ___ Other (Explain in Remarks) ___ Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators B7 and D2 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B102

	Absolute % Cover	Dominant Species?	Indicator Status																																					
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )																																								
1. <u>Liquidambar styraciflua</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>85.71</u> (A/B)																																				
2. <u>Acer rubrum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																																					
3. <u>Carpinus caroliniana</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																																					
4. <u>Pinus taeda</u>	<u>5</u>		<u>FAC</u>																																					
5. _____																																								
6. _____																																								
7. _____																																								
$\frac{100}{50.00} = \text{Total Cover}$ 50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:center;"><u>10</u></td> <td style="text-align:right;">Multiply by:</td> <td style="text-align:center;"><u>10</u></td> </tr> <tr> <td>OBL species</td> <td style="text-align:center;"><u>10</u></td> <td style="text-align:right;">x 1 =</td> <td style="text-align:center;"><u>10</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center;"><u>10</u></td> <td style="text-align:right;">x 2 =</td> <td style="text-align:center;"><u>20</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;"><u>230</u></td> <td style="text-align:right;">x 3 =</td> <td style="text-align:center;"><u>690</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>40</u></td> <td style="text-align:right;">x 4 =</td> <td style="text-align:center;"><u>160</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:right;">x 5 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align:center;"><u>290</u></td> <td style="text-align:right;">(A)</td> <td style="text-align:center;"><u>880</u></td> </tr> <tr> <td></td> <td></td> <td style="text-align:right;">(B)</td> <td></td> </tr> <tr> <td colspan="4" style="text-align:right;">Prevalence Index = B/A = <u>3.03</u></td> </tr> </table>	Total % Cover of:	<u>10</u>	Multiply by:	<u>10</u>	OBL species	<u>10</u>	x 1 =	<u>10</u>	FACW species	<u>10</u>	x 2 =	<u>20</u>	FAC species	<u>230</u>	x 3 =	<u>690</u>	FACU species	<u>40</u>	x 4 =	<u>160</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>290</u>	(A)	<u>880</u>			(B)		Prevalence Index = B/A = <u>3.03</u>			
Total % Cover of:	<u>10</u>	Multiply by:	<u>10</u>																																					
OBL species	<u>10</u>	x 1 =	<u>10</u>																																					
FACW species	<u>10</u>	x 2 =	<u>20</u>																																					
FAC species	<u>230</u>	x 3 =	<u>690</u>																																					
FACU species	<u>40</u>	x 4 =	<u>160</u>																																					
UPL species	<u>0</u>	x 5 =	<u>0</u>																																					
Column Totals:	<u>290</u>	(A)	<u>880</u>																																					
		(B)																																						
Prevalence Index = B/A = <u>3.03</u>																																								
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )																																								
1. <u>Liriodendron tulipifera</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																																				
2. <u>Acer rubrum</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FAC</u>																																					
3. <u>Carpinus caroliniana</u>	<u>10</u>		<u>FAC</u>																																					
4. <u>Nyssa sylvatica</u>	<u>5</u>		<u>FAC</u>																																					
5. _____																																								
6. _____																																								
7. _____																																								
8. _____																																								
9. _____																																								
10. _____																																								
$\frac{70}{35.00} = \text{Total Cover}$ 50% of total cover: <u>35.00</u> 20% of total cover: <u>14.00</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																																				
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )																																								
1. <u>Microstegium vimineum</u>	<u>70</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																																			
2. <u>Dulichium arundinaceum</u>	<u>10</u>		<u>OBL</u>																																					
3. <u>Impatiens capensis</u>	<u>10</u>		<u>FACW</u>																																					
4. <u>Polystichum acrostichoides</u>	<u>10</u>		<u>FACU</u>																																					
5. _____																																								
6. _____																																								
7. _____																																								
8. _____																																								
9. _____																																								
10. _____																																								
11. _____																																								
$\frac{100}{50.00} = \text{Total Cover}$ 50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>				<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																																				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																																								
1. <u>Vitis rotundifolia</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																																			
2. _____																																								
3. _____																																								
4. _____																																								
5. _____																																								
$\frac{20}{10.00} = \text{Total Cover}$ 50% of total cover: <u>10.00</u> 20% of total cover: <u>4.00</u>						<b>Remarks:</b> (Include photo numbers here or on a separate sheet.)  <b>Dominance test is passed.</b>																																		
<b>Remarks:</b> (Include photo numbers here or on a separate sheet.)																																								
<b>Dominance test is passed.</b>																																								

**SOIL**

Sampling Point: SP-B102

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10YR 5/2	60	7.5YR 5/8	10	C	M	Sandy Clay Loam	
0 - 4	10YR 6/2	30					Sandy Clay Loam	
4 - 12	10YR 5/3	85	7.5YR 5/8	15	C	M	Sandy Clay Loam	
12 - 21	10YR 6/2	70	10YR 6/6	30	C	M	Sandy Clay Loam	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 136, 122**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is present.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate Project NC City/County: Eden/Rockingham Sampling Date: 2024-06-05  
 Applicant/Owner: Mountain Valley Pipeline LLC State: North Carolina Sampling Point: SP-B103  
 Investigator(s): EJ, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR or MLRA): P 136 Lat: 36.50805592 Long: -79.66526366 Datum: NAD 83  
 Soil Map Unit Name: CmE - Clover sandy loam, 15 to 25 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PFO W-B006. The USACE Antecedent Precipitation Tool indicates normal conditions were present 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/></b>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators are present.**

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B103

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.66</u> (A/B)
1. <u>Pinus taeda</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>10</u> = Total Cover 50% of total cover: <u>5.00</u> 20% of total cover: <u>2.00</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>100</u> x 3 = <u>300</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>140</u> (A) <u>460</u> (B)  Prevalence Index = B/A = <u>3.28</u>
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				
1. <u>Acer rubrum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Liriodendron tulipifera</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Liquidambar styraciflua</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>85</u> = Total Cover 50% of total cover: <u>42.50</u> 20% of total cover: <u>17.00</u>				
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: _____    20% of total cover: _____				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. <u>Vitis rotundifolia</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Smilax bona-nox</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>45</u> = Total Cover 50% of total cover: <u>22.50</u> 20% of total cover: <u>9.00</u>				
Remarks: (Include photo numbers here or on a separate sheet.)  <b>Dominance test is passed.</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____



**SOIL**

Sampling Point: SP-B103

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 18	10YR 4/4	80	10YR 4/6	20	C	M	Sandy Clay Loam	
18 - 21	10YR 4/4	100					Sandy Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 136, 122**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate City/County: Rockingham County Sampling Date: 2024-08-26  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-B114  
 Investigator(s): AC, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR or MLRA): P 136 Lat: 36.50830043 Long: -79.66523413 Datum: NAD 83  
 Soil Map Unit Name: CmE - Clover sandy loam, 15 to 25 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:  
**Wetland sample plot within PFO W-B052a. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____</b>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators B10, D2 and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B114

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				
1. <u>Liquidambar styraciflua</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83.33</u> (A/B)
2. <u>Quercus phellos</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
50% of total cover: <u>32.50</u>	<u>65</u>	= Total Cover		<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>50</u> x 2 = <u>100</u> FAC species <u>85</u> x 3 = <u>255</u> FACU species <u>15</u> x 4 = <u>60</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>150</u> (A) <u>415</u> (B)  Prevalence Index = B/A = <u>2.76</u>
20% of total cover: <u>13.00</u>				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				
1. <u>Fraxinus pennsylvanica</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
50% of total cover: <u>7.50</u>	<u>15</u>	= Total Cover		
20% of total cover: <u>3.00</u>				
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				
1. <u>Agrimonia parviflora</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.   <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
2. <u>Microstegium vimineum</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Rumex obtusifolius</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
50% of total cover: <u>35.00</u>	<u>70</u>	= Total Cover		
20% of total cover: <u>14.00</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
50% of total cover: _____				
20% of total cover: _____				

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test indicator met.**

**SOIL**

Sampling Point: SP-B114

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10YR 3/2	100					Clay Loam	
4 - 14	10YR 4/2	65	7.5YR 5/6	5	C	M	Clay Loam	
4 - 14	10YR 4/6	30					Clay Loam	
14 - 20	5YR 5/3	100					Clay Loam	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is met.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate City/County: Rockingham County Sampling Date: 2024-08-26  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-B115  
 Investigator(s): AC, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 36.5082618 Long: -79.66534231 Datum: NAD 83  
 Soil Map Unit Name: CmE - Clover sandy loam, 15 to 25 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PFO W-B052a. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	___ Surface Soil Cracks (B6)
___ Surface Water (A1)	___ Sparsely Vegetated Concave Surface (B8)
___ High Water Table (A2)	___ Drainage Patterns (B10)
___ Saturation (A3)	___ Moss Trim Lines (B16)
___ Water Marks (B1)	___ Dry-Season Water Table (C2)
___ Sediment Deposits (B2)	___ Crayfish Burrows (C8)
___ Drift Deposits (B3)	___ Saturation Visible on Aerial Imagery (C9)
___ Algal Mat or Crust (B4)	___ Stunted or Stressed Plants (D1)
___ Iron Deposits (B5)	___ Geomorphic Position (D2)
___ Inundation Visible on Aerial Imagery (B7)	___ Shallow Aquitard (D3)
___ Water-Stained Leaves (B9)	___ Microtopographic Relief (D4)
___ Aquatic Fauna (B13)	___ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators are present.**

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B115

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )					
1. <u>Acer rubrum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>9</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>44.44</u> (A/B)	
2. <u>Pinus taeda</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
3. <u>Ulmus alata</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
4. <u>Carya glabra</u>	<u>15</u>		<u>FACU</u>		
5. <u>Fagus grandifolia</u>	<u>15</u>		<u>FACU</u>		
6. <u>Quercus alba</u>	<u>15</u>		<u>FACU</u>		
7. _____					
<u>115</u> = Total Cover 50% of total cover: <u>57.50</u> 20% of total cover: <u>23.00</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>80</u> x 3 = <u>240</u> FACU species <u>145</u> x 4 = <u>580</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>225</u> (A) <u>820</u> (B)  Prevalence Index = B/A = <u>3.64</u>	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )					
1. <u>Carya glabra</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
2. <u>Ulmus alata</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
<u>40</u> = Total Cover 50% of total cover: <u>20.00</u> 20% of total cover: <u>8.00</u>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )					
1. <u>Asplenium platyneuron</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
2. <u>Lonicera japonica</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
3. <u>Smilax rotundifolia</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
4. <u>Verbesina alternifolia</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
5. <u>Parthenocissus quinquefolia</u>	<u>10</u>		<u>FACU</u>		
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
<u>70</u> = Total Cover 50% of total cover: <u>35.00</u> 20% of total cover: <u>14.00</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )					
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
_____ = Total Cover 50% of total cover: _____    20% of total cover: _____					<b>Hydrophytic Vegetation Present?</b> Yes _____    No <input checked="" type="checkbox"/>
Remarks: (Include photo numbers here or on a separate sheet.)					

No indicators are present.



**SOIL**

Sampling Point: SP-B115

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 2	10YR 3/3	100					Clay Loam	
2 - 12	10YR 4/4	100					Clay Loam	
12 - 20	10YR 5/4	100					Clay Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> (MLRA 147, 148)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	Hydric Soil Present?    Yes _____    No <input checked="" type="checkbox"/>
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Remarks:  
**No indicators are present.**

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate City/County: Rockingham County Sampling Date: 2024-08-26  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-B116  
 Investigator(s): AC, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR or MLRA): P 136 Lat: 36.50839664 Long: -79.66531763 Datum: NAD 83  
 Soil Map Unit Name: CmE - Clover sandy loam, 15 to 25 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:  
**Wetland sample plot within W-B052b. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____</b>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Indicators B10, D2 and D5 are present.**



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B116

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u>	(A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u>	(B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u>	(A/B)
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b>	
5. _____	_____	_____	_____	Total % Cover of: _____ Multiply by:	
6. _____	_____	_____	_____	OBL species <u>45</u>	x 1 = <u>45</u>
7. _____	_____	_____	_____	FACW species <u>30</u>	x 2 = <u>60</u>
8. _____	_____	_____	_____	FAC species <u>40</u>	x 3 = <u>120</u>
9. _____	_____	_____	_____	FACU species <u>0</u>	x 4 = <u>0</u>
10. _____	_____	_____	_____	UPL species <u>0</u>	x 5 = <u>0</u>
11. _____	_____	_____	_____	Column Totals: <u>115</u>	(A) <u>225</u> (B)
_____ = Total Cover				Prevalence Index = B/A = <u>1.95</u>	
50% of total cover: _____ 20% of total cover: _____				<b>Hydrophytic Vegetation Indicators:</b>	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				___ 1 - Rapid Test for Hydrophytic Vegetation	
1. <u>Salix nigra</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
2. _____	_____	_____	_____	<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
3. _____	_____	_____	_____	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
4. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
5. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
6. _____	_____	_____	_____	<b>Definitions of Four Vegetation Strata:</b>	
7. _____	_____	_____	_____	<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
8. _____	_____	_____	_____	<b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.	
9. _____	_____	_____	_____	<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
10. _____	_____	_____	_____	<b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
11. _____	_____	_____	_____		
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____	
50% of total cover: <u>7.50</u> 20% of total cover: <u>3.00</u>					
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )					
1. <u>Microstegium vimineum</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FAC</u>		
2. <u>Bidens aristosa</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>		
3. <u>Carex lurida</u>	<u>15</u>	_____	<u>OBL</u>		
4. <u>Leersia oryzoides</u>	<u>15</u>	_____	<u>OBL</u>		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
_____ = Total Cover					
50% of total cover: <u>50.00</u> 20% of total cover: <u>20.00</u>					
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover					
50% of total cover: _____ 20% of total cover: _____					

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance test and prevalence index are met.**

**SOIL**

Sampling Point: SP-B116

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 1	10YR 3/3	100					Silt Loam	
1 - 5	10YR 5/2	97	5YR 4/6	3	C	M	Clay Loam	
5 - 20	10YR 5/3	98	5YR 4/6	2	C	M		
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**Indicator F3 is met.**



**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP Southgate City/County: Rockingham County Sampling Date: 2024-08-26  
 Applicant/Owner: Mountain Valley Pipeline, LLC State: North Carolina Sampling Point: SP-B117  
 Investigator(s): AC, LC Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Upland, Hillslope Local relief (concave, convex, none): Convex Slope (%): 3  
 Subregion (LRR or MLRA): P 136 Lat: 36.508396 Long: -79.665345 Datum: NAD 83  
 Soil Map Unit Name: CmE - Clover sandy loam, 15 to 25 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:  
**Upland sample plot adjacent to PEM W-B052b. The USACE Antecedent Precipitation Tool indicates wetter than normal conditions 3 months prior to survey.**

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)	_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)	_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No indicators are present.**

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: SP-B117

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u>	(A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u>	(B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.00</u>	(A/B)
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b>	
5. _____	_____	_____	_____	Total % Cover of: _____ Multiply by:	
6. _____	_____	_____	_____	OBL species <u>0</u>	x 1 = <u>0</u>
7. _____	_____	_____	_____	FACW species <u>0</u>	x 2 = <u>0</u>
_____ = Total Cover				FAC species <u>50</u>	x 3 = <u>150</u>
50% of total cover: _____ 20% of total cover: _____				FACU species <u>60</u>	x 4 = <u>240</u>
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )</b>				UPL species <u>0</u>	x 5 = <u>0</u>
1. <u>Liquidambar styraciflua</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	Column Totals: <u>110</u>	(A) <u>390</u>
2. <u>Ulmus alata</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	Prevalence Index = B/A = <u>3.54</u>	
3. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b>	
4. _____	_____	_____	_____	___ 1 - Rapid Test for Hydrophytic Vegetation	
5. _____	_____	_____	_____	___ 2 - Dominance Test is >50%	
6. _____	_____	_____	_____	___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
7. _____	_____	_____	_____	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
8. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
9. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<u>25</u> = Total Cover				<b>Definitions of Four Vegetation Strata:</b>	
50% of total cover: <u>12.50</u> 20% of total cover: <u>5.00</u>				<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
<b>Herb Stratum (Plot size: <u>5 ft r</u> )</b>				<b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.	
1. <u>Lespedeza cuneata</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
2. <u>Microstegium vimineum</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
3. <u>Chamaecrista fasciculata</u>	<u>15</u>	_____	<u>FACU</u>	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>	
4. <u>Dichanthelium clandestinum</u>	<u>10</u>	_____	<u>FAC</u>		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
<u>85</u> = Total Cover					
50% of total cover: <u>42.50</u> 20% of total cover: <u>17.00</u>					
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover					
50% of total cover: _____ 20% of total cover: _____					

Remarks: (Include photo numbers here or on a separate sheet.)

**No tests are passed.**



**SOIL**

Sampling Point: SP-B117

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 20	10YR 5/4	100					Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**No indicators are present.**

## **Appendix C – Ground Photographs**

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Photograph C-1: View of wetland SP-B001 within PEM W-B001, facing east.



Photograph C-2: View of wetland SP-B001 within PEM W-B001, facing west.





Photograph C-3: View of upland SP-B002 adjacent to W-B001, facing east.



Photograph C-4: View of upland SP-B002 adjacent to W-B001, facing west.





Photograph C-5: View of wetland SP-B003 within PFO W-B002, facing east.



Photograph C-6: View of wetland SP-B003 within PFO W-B002, facing west.





Photograph C-7: View of upland SP-B004 west of W-B002, facing northeast.



Photograph C-8: View of upland SP-B004 west of W-B002, facing south.







Photograph C-9: View of wetland SP-B005 within PFO W-B002 and adjacent to S-B001, facing northeast.



Photograph C-10: View of wetland SP-B005 within PFO W-B002 and adjacent to S-B001, facing southwest.





Photograph C-11: View of upland SP-B006 west of W-B002 and east of OW-B001, facing southwest.



Photograph C-12: View of upland SP-B006 west of W-B002 and east of OW-B001, facing northeast.





Photograph C-13: View of wetland SP-B007 within PFO W-B003 and adjacent to S-B003, facing northwest.



Photograph C-14: View of wetland SP-B007 within PFO W-B003 and adjacent to S-B003, facing southeast.





Photograph C-15: View of upland SP-B008 south of W-B003 and W-B051, facing southwest.



Photograph C-16: View of upland SP-B008 south of W-B003 and W-B051, facing northeast.





Photograph C-17: View of wetland SP-B008a within PFO W-B051 and adjacent to S-B003, facing northwest.

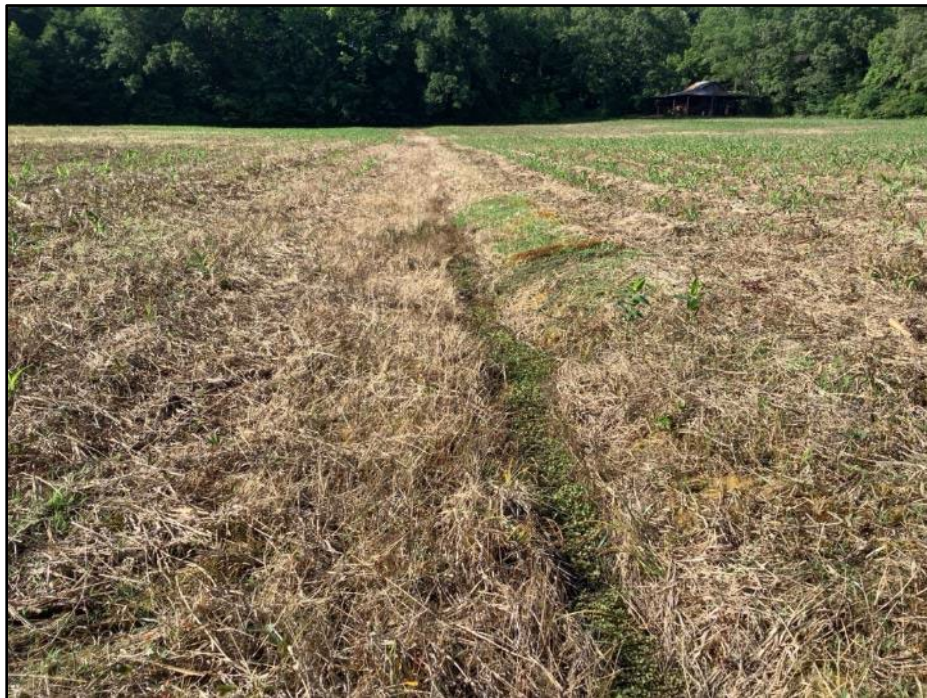


Photograph C-18: View of wetland SP-B008a within PFO W-B051 and adjacent to S-B003, facing southeast.





Photograph C-19: View of wetland SP-B009 within PEM W-B004, facing north.



Photograph C-20: View of wetland SP-B009 within PEM W-B004, facing south.





Photograph C-21: View of upland SP-B010 adjacent to PEM W-B004 and PSS W-B004a, facing north.



Photograph C-22: View of upland SP-B010 adjacent to PEM W-B004 and PSS W-B004a, facing south.





Photograph C-23: View of wetland SP-B011 within PEM W-B005, facing north.



Photograph C-24: View of wetland SP-B011 within PEM W-B005, facing west.





Photograph C-25: View of upland SP-B012 northeast of W-B005, facing south.



Photograph C-26: View of upland SP-B012 northeast of W-B005, facing northwest.





Photograph C-27: View of wetland SP-B013 within PEM W-B007, facing west.



Photograph C-28: View of wetland SP-B013 within PEM W-B007, facing east.





Photograph C-29: View of upland SP-B014 south of W-B007 and S-B015, facing northwest.



Photograph C-30: View of upland SP-B014 south of W-B007 and S-B015, facing east.





Photograph C-31: View of wetland SP-B015 within PEM W-B008, facing east.



Photograph C-32: View of wetland SP-B015 within PEM W-B008, facing west.





Photograph C-33: View of upland SP-B016 northwest of PEM W-B008 and adjacent to S-B017, facing southeast.



Photograph C-34: View of upland SP-B016 northwest of PEM W-B008 and adjacent to S-B017, facing north.





Photograph C-35: View of upland SP-B016a west of PEM W-B008, facing northwest.



Photograph C-36: View of upland SP-B016a west of PEM W-B008, facing southeast.





Photograph C-37: View of wetland SP-B017 within PFO W-B009a, facing south.



Photograph C-38: View of wetland SP-B017 within PFO W-B009a, facing north.





Photograph C-39: View of upland SP-B018 west of W-B009a, facing northwest.



Photograph C-40: View of upland SP-B018 west of W-B009a, facing southeast.





Photograph C-41: View of wetland SP-B019 within PEM W-B009b, facing north.



Photograph C-42: View of wetland SP-B019 within PEM W-B009b, facing south.





Photograph C-43: View of upland SP-B020 east of W-B009b, facing south.



Photograph C-44: View of upland SP-B020 east of W-B009b, facing northeast.







Photograph C-45: View of wetland SP-B021 within PEM W-B010, facing west.



Photograph C-46: View of wetland SP-B021 within PEM W-B010, facing east.





Photograph C-47: View of upland SP-B022 east of W-B010, facing east.



Photograph C-48: View of upland SP-B022 east of W-B010, facing west.





Photograph C-49: View of wetland SP-B023 within PEM W-B011, facing southwest.



Photograph C-50: View of wetland SP-B023 within PEM W-B011, facing northeast.





Photograph C-51: View of upland SP-B024 north of W-B011 and S-B019, facing southwest.



Photograph C-52: View of upland SP-B024 north of W-B011 and S-B019, facing northeast.





Photograph C-53: View of wetland SP-B025 within PEM W-B012, facing northeast.



Photograph C-54: View of wetland SP-B025 within PEM W-B012, facing southwest.





Photograph C-55: View of upland SP-B026 west of W-B012, facing northeast.



Photograph C-56: View of upland SP-B026 west of W-B012, facing southwest.







Photograph C-57: View of upland SP-B056 east of W-B027, facing southeast.



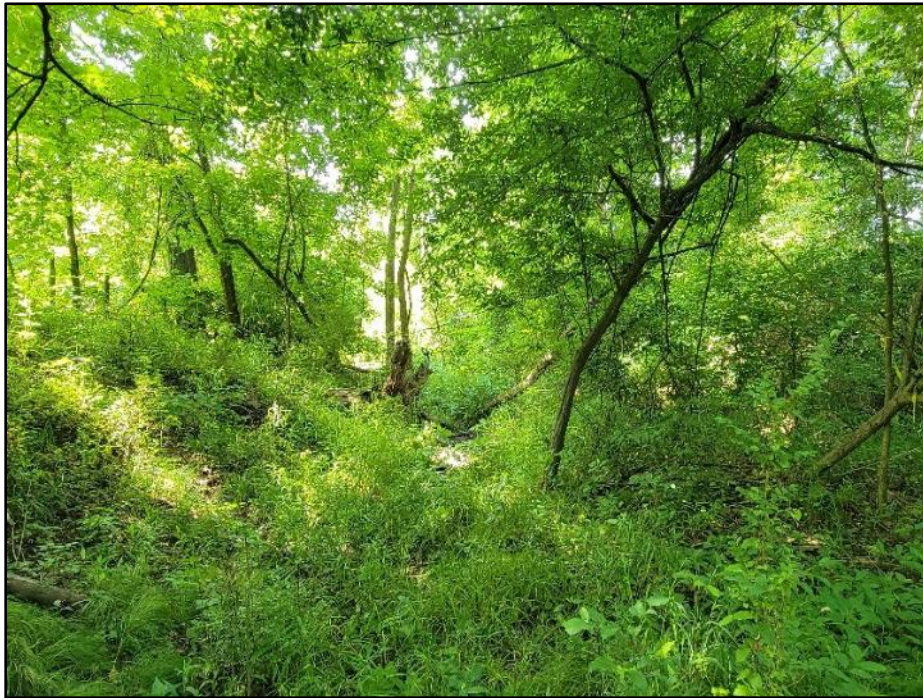
Photograph C-58: View of upland SP-B056 east of W-B027, facing northeast.







Photograph C-59: View of wetland SP-B057 within PFO W-B027, facing north.



Photograph C-60: View of wetland SP-B057 within PFO W-B027, facing south.





Photograph C-61: View of upland SP-B057a east of PFO W-B027, facing northeast.



Photograph C-62: View of upland SP-B057a east of PFO W-B027, facing southwest.





Photograph C-63: View of wetland SP-B058 within PEM W-B028, facing northeast.



Photograph C-64: View of wetland SP-B058 within PEM W-B028, facing southwest.





Photograph C-65: View of upland SP-B059 adjacent to W-B028, facing east.



Photograph C-66: View of upland SP-B059 adjacent to W-B028, facing west.





Photograph C-67: View of wetland SP-B060 within PEM W-B029, facing north.



Photograph C-68: View of wetland SP-B060 within PEM W-B029, facing south.





Photograph C-69: View of upland SP-B061 north of W-B029, facing east.



Photograph C-70: View of upland SP-B061 north of W-B029, facing west.





Photograph C-71: View of wetland SP-B062 within PSS W-B030, facing southwest.



Photograph C-72: View of wetland SP-B062 within PSS W-B030, facing northeast.





Photograph C-73: View of upland SP-B063 north of W-B030, facing west.



Photograph C-74: View of upland SP-B063 north of W-B030, facing east.





Photograph C-75: View of upland SP-B064 northeast of W-B031b facing northeast.



Photograph C-76: View of upland SP-B064 northeast of W-B031b, facing southeast.





Photograph C-77: View of wetland SP-B065 within PSS W-B031b, facing south.



Photograph C-78: View of wetland SP-B065 within PSS W-B031b, facing north.





Photograph C-79: View of wetland SP-B066 within PEM W-B031a and adjacent to W-B031b, facing northwest.



Photograph C-80: View of wetland SP-B066 within PEM W-B031a and adjacent to W-B031b, facing southeast.





Photograph C-81: View of wetland SP-B067 within PEM W-B032, which has been significantly disturbed by cattle, facing northwest.



Photograph C-82: View of wetland SP-B067 within PEM W-B032, which has been significantly disturbed by cattle, facing southeast.





Photograph C-83: View of upland SP-B068 north of W-B032, facing southeast.



Photograph C-84: View of upland SP-B068 north of W-B032, facing northwest.





Photograph C-85: View of wetland SP-B069a within PEM W-B053, facing northeast.



Photograph C-86: View of wetland SP-B069a within PEM W-B053, facing southwest.





Photograph C-87: View of upland SP-B069b west of PEM W-B053, facing northeast.



Photograph C-88: View of upland SP-B069b west of PEM W-B053, facing southwest.





Photograph C-89: View of upland SP-B070 located within previously delineated wetland area, facing southeast.



Photograph C-90: View of upland SP-B070 located within previously delineated wetland area, facing north.





Photograph C-91: View of wetland SP-B102 within PFO W-B006 and adjacent to S-B010, facing east.



Photograph C-92: View of wetland SP-B102 within PFO W-B006 and adjacent to S-B01, facing southwest.





Photograph C-93: View of upland SP-B103 north of W-B006 and S-B010, facing northwest.



Photograph C-94: View of upland SP-B103 north of W-B006 and S-B010, facing northeast.



Photograph C-95: View of wetland SP-B114 within W-B052a, facing east.



Photograph C-96: View of wetland SP-B114 within W-B052a, facing west.







Photograph C-97: View of upland SP-B115 southwest of W-B052a, facing northwest.



Photograph C-98: View of upland SP-B115 southwest of W-B052a, facing southeast.







Photograph C-99: View of wetland SP-B116 within W-B052b, facing east.



Photograph C-100: View of wetland SP-B116 within W-B052b, facing southwest.





Photograph C-101: View of upland SP-B117 west of W-B052b, facing north.



Photograph C-102: View of upland SP-B117 west of W-B052b, facing southwest.





Photograph C-103: View of wetland SP-A157 within PEM W-B027a, facing southwest.



Photograph C-104: View of wetland SP-A157 within PEM W-B027a, facing northeast.





Photograph C-105: View of upland SP-A158 west of W-B027a, facing north.



Photograph C-106: View of upland SP-B103 west of W-B027a, facing south.





Photograph C-107: View of wetland SP-A159 within PSS W-B004a, facing south.



Photograph C-108: View of wetland SP-A159 within PSS W-B004a, facing north.







Photograph C-109: View of upland SP-A160 southeast of PEM W-B056, facing northwest.



Photograph C-110: View of upland SP-A160 southeast of PEM W-B056, facing southeast.





Photograph C-111: View of wetland SP-A161 within PEM W-B056, facing north.



Photograph C-112: View of wetland SP-A161 within PEM W-B056, facing south.





Photograph C-113: View of wetland SP-A162 within PEM W-B055, facing south.



Photograph C-114: View of wetland SP-A162 within PEM W-B055, facing north.





Photograph C-115: View of wetland SP-A163 within PSS W-B056a, facing northeast.



Photograph C-116: View of wetland SP-A163 within PSS W-B056a, facing southwest.





Photograph C-117: View of upland SP-A164 southeast of PSS W-B056a, facing northwest.



Photograph C-118: View of upland SP-A164 southeast of PSS W-B056a, facing southeast.





Photograph C-119: View of upland SP-A165 east of PEM W-B034, facing northeast.



Photograph C-120: View of upland SP-A165 east of PEM W-B034, facing southwest.





Photograph C-121: View of wetland SP-A166 within PEM W-B034, facing southwest.



Photograph C-122: View of wetland SP-A166 within PSS W-B004a, facing northeast.





Photograph C-123: View of open water OW-B001, facing northeast.



Photograph C-124: View of open water OW-B001, facing southwest.







Photograph C-125: View of ephemeral S-B001, facing north.



Photograph C-126: View of ephemeral S-B001, facing south.







Photograph C-127: View of intermittent S-B002, facing north.



Photograph C-128: View of intermittent S-B002, facing south.





Photograph C-129: View of intermittent S-B003, facing northwest.



Photograph C-130: View of intermittent S-B003, facing southeast.





Photograph C-131: View of ephemeral S-B004, facing northwest.



Photograph C-132: View of ephemeral S-B004, facing southeast.





Photograph C-133: View of perennial S-B005, the Dan River, facing northwest.



Photograph C-134: View of perennial S-B005, the Dan River, facing northeast.





Photograph C-135: View of intermittent S-B006, facing northwest.



Photograph C-136: View of intermittent S-B006, facing southeast.





Photograph C-137: View of intermittent S-B007, facing north.



Photograph C-138: View of intermittent S-B007, facing south.





Photograph C-139: View of intermittent S-B008, facing northwest.



Photograph C-140: View of intermittent S-B008, facing southeast.





Photograph C-141: View of ephemeral S-B009, facing west.



Photograph C-142: View of ephemeral S-B009, facing east.





Photograph C-143: View of ephemeral S-B010, facing southwest.



Photograph C-144: View of ephemeral S-B010, facing northeast.





Photograph C-145: View of intermittent S-B011, facing southeast.



Photograph C-146: View of intermittent S-B011, facing northwest.





Photograph C-147: View of intermittent S-B013, facing northwest.



Photograph C-148: View of intermittent S-B013, facing southeast.





Photograph C-149: View of ephemeral S-B014, facing northwest.



Photograph C-150: View of ephemeral S-B014, facing southeast.





Photograph C-151: View of intermittent S-B015, facing northwest.



Photograph C-152: View of intermittent S-B015, facing southeast.





Photograph C-153: View of ephemeral S-B016, facing southwest.



Photograph C-154: View of ephemeral S-B016, facing northeast.





Photograph C-155: View of ephemeral S-B017, facing north.



Photograph C-156: View of ephemeral S-B017, facing southeast.





Photograph C-157: View of ephemeral S-B018, facing northeast.



Photograph C-158: View of ephemeral S-B018, facing southwest.





Photograph C-159: View of ephemeral S-B019, facing north.



Photograph C-160: View of ephemeral S-B019, facing southeast.







Photograph C-161: View of perennial S-B034, Cascade Creek, facing north.



Photograph C-162: View of perennial S-B034, Cascade Creek, facing south.







Photograph C-163: View of perennial S-B035, Dry Creek, facing east.



Photograph C-164: View of perennial S-B035, Dry Creek, facing west.





Photograph C-165: View of intermittent S-B036, facing north.



Photograph C-166: View of intermittent S-B036, facing south.





Photograph C-167: View of ephemeral S-B057, facing northeast.



Photograph C-168: View of ephemeral S-B057, facing southwest.



**Appendix D – North Carolina  
Wetland Method Forms**

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**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/23/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B001
Wetland Type	Basin Wetland	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	79.679598321W/36.495464021N

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?**  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

**Is the assessment area on a coastal island?**  Yes  No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?**  Yes  No

**Does the assessment area experience overbank flooding during normal rainfall conditions?**  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                     |    |                                     |   |
|-------------------------------------|----|-------------------------------------|---|
|                                     | GS | VS                                  |   |
| <input type="checkbox"/>            | A  | <input type="checkbox"/>            | A Not severely altered  |
| <input checked="" type="checkbox"/> | B  | <input checked="" type="checkbox"/> | B Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                     |      |                                     |  |
|-------------------------------------|------|-------------------------------------|--|
|                                     | Surf | Sub                                 |  |
| <input type="checkbox"/>            | A    | <input type="checkbox"/>            | A Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/>            | B    | <input type="checkbox"/>            | B Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input checked="" type="checkbox"/> | C    | <input checked="" type="checkbox"/> | C Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                     |                                     |   |
|-----|-------------------------------------|-------------------------------------|---|
|     | AA                                  | WT                                  |   |
| 3a. | <input type="checkbox"/>            | <input type="checkbox"/>            | A Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/>            | <input type="checkbox"/>            | B Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/>            | <input type="checkbox"/>            | C Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | D Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/>            |                                     | A Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/>            |                                     | B Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> |                                     | C Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                         | 5M                         | 2M                         |   |
|----------------------------|----------------------------|----------------------------|---|
| <input type="checkbox"/> A | <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B | <input type="checkbox"/> B | <input type="checkbox"/> B | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C | <input type="checkbox"/> C | <input type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D | <input type="checkbox"/> D | <input type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E | <input type="checkbox"/> E | <input type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F | <input type="checkbox"/> F | <input type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | <input type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                                    |                       |
|---------------------------------------|---------------------------------------|-----------------------|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input checked="" type="checkbox"/> E | <input checked="" type="checkbox"/> E | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input checked="" type="checkbox"/> I	<input checked="" type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input checked="" type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes
- No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes  No If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A ≥ 25% coverage of vegetation  
 B < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input type="checkbox"/> A	<input type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense herb layer
	<input checked="" type="checkbox"/> B	<input checked="" type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersed between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A Overbank and overland flow are not severely altered in the assessment area.  
 B Overbank flow is severely altered in the assessment area.  
 C Overland flow is severely altered in the assessment area.  
 D Both overbank and overland flow are severely altered in the assessment area.

Notes

Both overbank and overland flow altered by draining, ditching, and road berm in assessment area.

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/23/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B002
Wetland Type	Headwater Forest	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.494175416N/79.678786859W

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed?  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

Is the assessment area on a coastal island?  Yes  No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver?  Yes  No

Does the assessment area experience overbank flooding during normal rainfall conditions?  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                     |    |                                     |   |
|-------------------------------------|----|-------------------------------------|---|
|                                     | GS | VS                                  |   |
| <input checked="" type="checkbox"/> | A  | <input checked="" type="checkbox"/> | A Not severely altered  |
| <input type="checkbox"/>            | B  | <input type="checkbox"/>            | B Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                     |      |                                     |  |
|-------------------------------------|------|-------------------------------------|--|
|                                     | Surf | Sub                                 |  |
| <input checked="" type="checkbox"/> | A    | <input checked="" type="checkbox"/> | A Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/>            | B    | <input type="checkbox"/>            | B Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/>            | C    | <input type="checkbox"/>            | C Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                     |                                     |   |
|-----|-------------------------------------|-------------------------------------|---|
|     | AA                                  | WT                                  |   |
| 3a. | <input type="checkbox"/>            | <input type="checkbox"/>            | A Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/>            | <input type="checkbox"/>            | B Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/>            | <input type="checkbox"/>            | C Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | D Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/>            |                                     | A Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/>            |                                     | B Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> |                                     | C Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| Surf                                  | Sub                                   |   |
| <input type="checkbox"/> A            | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input checked="" type="checkbox"/> B | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- |                                       |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---------------------------------------|---|
| WS                                    | 5M                                    | 2M                                    |   |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | <input type="checkbox"/> C            | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | <input type="checkbox"/> D            | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | <input type="checkbox"/> E            | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | <input type="checkbox"/> F            | ≥ 20% coverage of clear-cut land  |
| <input checked="" type="checkbox"/> G | <input checked="" type="checkbox"/> G | <input checked="" type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- |                            |                                       |                       |
|----------------------------|---------------------------------------|-----------------------|
| WT                         | WC                                    |                       |
| <input type="checkbox"/> A | <input checked="" type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input type="checkbox"/> F | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input checked="" type="checkbox"/> G	<input checked="" type="checkbox"/> G	<input checked="" type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input checked="" type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

- |           |                                       |                                       |  |
|-----------|---------------------------------------|---------------------------------------|--|
|           | AA                                    | WT                                    |  |
| Canopy    | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Canopy closed, or nearly closed, with natural gaps associated with natural processes |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Canopy present, but opened more than natural gaps                                    |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Canopy sparse or absent  |
| Mid-Story | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense mid-story/sapling layer  |
|           | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Moderate density mid-story/sapling layer   |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Mid-story/sapling layer sparse or absent   |
| Shrub     | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense shrub layer  |
|           | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Moderate density shrub layer   |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Shrub layer sparse or absent   |
| Herb      | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense herb layer   |
|           | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Moderate density herb layer  |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Herb layer sparse or absent  |

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersions between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/23/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B003
Wetland Type	Headwater Forest	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.494736034N/79.677700932W

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed?  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

Is the assessment area on a coastal island?  Yes  No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver?  Yes  No

Does the assessment area experience overbank flooding during normal rainfall conditions?  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                     |    |                                     |   |
|-------------------------------------|----|-------------------------------------|---|
|                                     | GS | VS                                  |   |
| <input checked="" type="checkbox"/> | A  | <input checked="" type="checkbox"/> | A Not severely altered  |
| <input type="checkbox"/>            | B  | <input type="checkbox"/>            | B Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                     |      |                                     |  |
|-------------------------------------|------|-------------------------------------|--|
|                                     | Surf | Sub                                 |  |
| <input checked="" type="checkbox"/> | A    | <input checked="" type="checkbox"/> | A Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/>            | B    | <input type="checkbox"/>            | B Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/>            | C    | <input type="checkbox"/>            | C Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                     |                                     |   |
|-----|-------------------------------------|-------------------------------------|---|
|     | AA                                  | WT                                  |   |
| 3a. | <input type="checkbox"/>            | <input type="checkbox"/>            | A Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/>            | <input type="checkbox"/>            | B Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/>            | <input type="checkbox"/>            | C Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | D Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/>            |                                     | A Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/>            |                                     | B Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> |                                     | C Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                                    | 5M                                    | 2M                                    |   |
|---------------------------------------|---------------------------------------|---------------------------------------|---|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | <input type="checkbox"/> C            | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | <input type="checkbox"/> D            | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | <input checked="" type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | <input type="checkbox"/> F            | ≥ 20% coverage of clear-cut land  |
| <input checked="" type="checkbox"/> G | <input checked="" type="checkbox"/> G | <input checked="" type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                         | WC                                    |                       |
|----------------------------|---------------------------------------|-----------------------|
| <input type="checkbox"/> A | <input checked="" type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input type="checkbox"/> F | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input checked="" type="checkbox"/> G	<input checked="" type="checkbox"/> G	<input checked="" type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input checked="" type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

- |           |                                       |                                       |  |
|-----------|---------------------------------------|---------------------------------------|--|
|           | AA                                    | WT                                    |  |
| Canopy    | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Canopy closed, or nearly closed, with natural gaps associated with natural processes |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Canopy present, but opened more than natural gaps                                    |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Canopy sparse or absent  |
| Mid-Story | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense mid-story/sapling layer  |
|           | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Moderate density mid-story/sapling layer   |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Mid-story/sapling layer sparse or absent   |
| Shrub     | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Dense shrub layer  |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Moderate density shrub layer   |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Shrub layer sparse or absent   |
| Herb      | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense herb layer   |
|           | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Moderate density herb layer  |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Herb layer sparse or absent  |

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/23/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B004
Wetland Type	Basin Wetland	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.493588316N/79.675951061W

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed?  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

Is the assessment area on a coastal island?  Yes  No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver?  Yes  No

Does the assessment area experience overbank flooding during normal rainfall conditions?  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Not severely altered  |
| <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                         | 5M                         | 2M                         |   |
|----------------------------|----------------------------|----------------------------|---|
| <input type="checkbox"/> A | <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B | <input type="checkbox"/> B | <input type="checkbox"/> B | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C | <input type="checkbox"/> C | <input type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D | <input type="checkbox"/> D | <input type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E | <input type="checkbox"/> E | <input type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F | <input type="checkbox"/> F | <input type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | <input type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                                    |                       |
|---------------------------------------|---------------------------------------|-----------------------|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input checked="" type="checkbox"/> F | <input checked="" type="checkbox"/> F | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input checked="" type="checkbox"/> J	<input checked="" type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input checked="" type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes
- No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes  No If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A ≥ 25% coverage of vegetation  
 B < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input type="checkbox"/> A	<input type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C Majority of canopy trees are < 6 inches DBH or no trees.

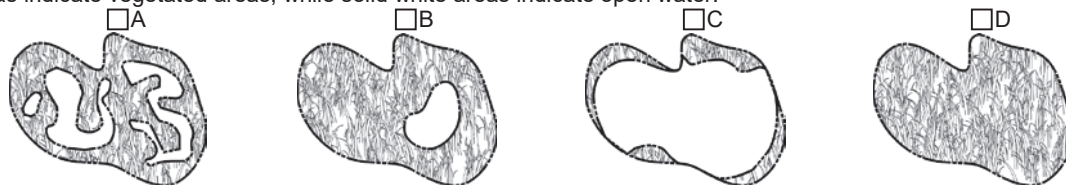
**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A Overbank and overland flow are not severely altered in the assessment area.  
 B Overbank flow is severely altered in the assessment area.  
 C Overland flow is severely altered in the assessment area.  
 D Both overbank and overland flow are severely altered in the assessment area.

Notes

Overland flow altered by draining and agricultural activity.

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/23/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B004a
Wetland Type	Basin Wetland	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.493867671N/79.675951915W

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?**  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

**Is the assessment area on a coastal island?**  Yes  No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?**  Yes  No

**Does the assessment area experience overbank flooding during normal rainfall conditions?**  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Not severely altered  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                         | 5M                         | 2M                         |   |
|----------------------------|----------------------------|----------------------------|---|
| <input type="checkbox"/> A | <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B | <input type="checkbox"/> B | <input type="checkbox"/> B | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C | <input type="checkbox"/> C | <input type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D | <input type="checkbox"/> D | <input type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E | <input type="checkbox"/> E | <input type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F | <input type="checkbox"/> F | <input type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | <input type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                                    |                       |
|---------------------------------------|---------------------------------------|-----------------------|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input checked="" type="checkbox"/> F | <input checked="" type="checkbox"/> F | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input checked="" type="checkbox"/> J	<input checked="" type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input checked="" type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes
- No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes  No If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A ≥ 25% coverage of vegetation  
 B < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

- |           |                                       |                                       |  |
|-----------|---------------------------------------|---------------------------------------|--|
|           | AA                                    | WT                                    |  |
| Canopy    | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Canopy closed, or nearly closed, with natural gaps associated with natural processes |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Canopy present, but opened more than natural gaps                                    |
|           | <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Canopy sparse or absent  |
| Mid-Story | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Dense mid-story/sapling layer  |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Moderate density mid-story/sapling layer   |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Mid-story/sapling layer sparse or absent   |
| Shrub     | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Dense shrub layer  |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Moderate density shrub layer   |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Shrub layer sparse or absent   |
| Herb      | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense herb layer   |
|           | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Moderate density herb layer  |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Herb layer sparse or absent  |

**18. Snags – wetland type condition metric (skip for all marshes)**

- A Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A Overbank and overland flow are not severely altered in the assessment area.  
 B Overbank flow is severely altered in the assessment area.  
 C Overland flow is severely altered in the assessment area.  
 D Both overbank and overland flow are severely altered in the assessment area.

Notes

Overland flow altered by draining and agricultural activity.

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/23/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B005
Wetland Type	Headwater Forest	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.501595294N/79.671561390W

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed?  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

Is the assessment area on a coastal island?  Yes  No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver?  Yes  No

Does the assessment area experience overbank flooding during normal rainfall conditions?  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                     |    |                                     |   |
|-------------------------------------|----|-------------------------------------|---|
|                                     | GS | VS                                  |   |
| <input checked="" type="checkbox"/> | A  | <input checked="" type="checkbox"/> | A Not severely altered  |
| <input type="checkbox"/>            | B  | <input type="checkbox"/>            | B Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                     |      |                                     |  |
|-------------------------------------|------|-------------------------------------|--|
|                                     | Surf | Sub                                 |  |
| <input checked="" type="checkbox"/> | A    | <input checked="" type="checkbox"/> | A Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/>            | B    | <input type="checkbox"/>            | B Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/>            | C    | <input type="checkbox"/>            | C Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                     |                                     |   |
|-----|-------------------------------------|-------------------------------------|---|
|     | AA                                  | WT                                  |   |
| 3a. | <input type="checkbox"/>            | <input type="checkbox"/>            | A Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | B Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/>            | <input type="checkbox"/>            | C Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input type="checkbox"/>            | <input type="checkbox"/>            | D Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/>            |                                     | A Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/>            |                                     | B Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> |                                     | C Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| Surf                                  | Sub                                   |   |
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- |                                       |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---------------------------------------|---|
| WS                                    | 5M                                    | 2M                                    |   |
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | <input type="checkbox"/> C            | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | <input type="checkbox"/> D            | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input checked="" type="checkbox"/> E | <input checked="" type="checkbox"/> E | <input checked="" type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | <input type="checkbox"/> F            | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | <input type="checkbox"/> G            | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- |                            |                                       |                       |
|----------------------------|---------------------------------------|-----------------------|
| WT                         | WC                                    |                       |
| <input type="checkbox"/> A | <input checked="" type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input type="checkbox"/> F | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input checked="" type="checkbox"/> B	<input checked="" type="checkbox"/> B	<input checked="" type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input checked="" type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input type="checkbox"/> C	<input type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

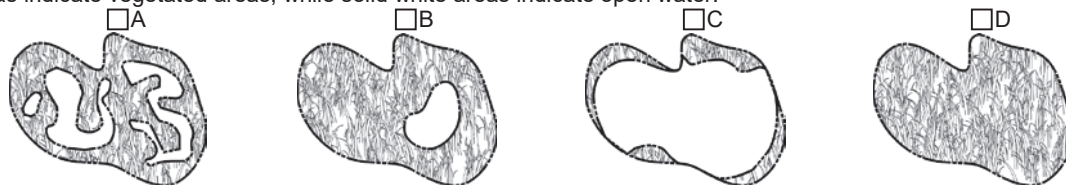
**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersions between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/24/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B006
Wetland Type	Headwater Forest	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.508010944N/79.665355594W

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed?  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

Is the assessment area on a coastal island?  Yes  No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver?  Yes  No

Does the assessment area experience overbank flooding during normal rainfall conditions?  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                     |    |                                     |   |
|-------------------------------------|----|-------------------------------------|---|
|                                     | GS | VS                                  |   |
| <input checked="" type="checkbox"/> | A  | <input checked="" type="checkbox"/> | A Not severely altered  |
| <input type="checkbox"/>            | B  | <input type="checkbox"/>            | B Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                     |      |                                     |  |
|-------------------------------------|------|-------------------------------------|--|
|                                     | Surf | Sub                                 |  |
| <input checked="" type="checkbox"/> | A    | <input checked="" type="checkbox"/> | A Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/>            | B    | <input type="checkbox"/>            | B Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/>            | C    | <input type="checkbox"/>            | C Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                     |                                     |   |
|-----|-------------------------------------|-------------------------------------|---|
|     | AA                                  | WT                                  |   |
| 3a. | <input type="checkbox"/>            | <input type="checkbox"/>            | A Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/>            | <input type="checkbox"/>            | B Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/>            | <input type="checkbox"/>            | C Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | D Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/>            |                                     | A Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/>            |                                     | B Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> |                                     | C Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                                    | 5M                                    | 2M                                    |   |
|---------------------------------------|---------------------------------------|---------------------------------------|---|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | <input type="checkbox"/> C            | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | <input type="checkbox"/> D            | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | <input type="checkbox"/> E            | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | <input type="checkbox"/> F            | ≥ 20% coverage of clear-cut land  |
| <input checked="" type="checkbox"/> G | <input checked="" type="checkbox"/> G | <input checked="" type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                         | WC                                    |                       |
|----------------------------|---------------------------------------|-----------------------|
| <input type="checkbox"/> A | <input type="checkbox"/> A            | ≥ 100 feet            |
| <input type="checkbox"/> B | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E | <input checked="" type="checkbox"/> E | From 30 to < 40 feet  |
| <input type="checkbox"/> F | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input checked="" type="checkbox"/> J	<input checked="" type="checkbox"/> J	<input checked="" type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input checked="" type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input type="checkbox"/> C	<input type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

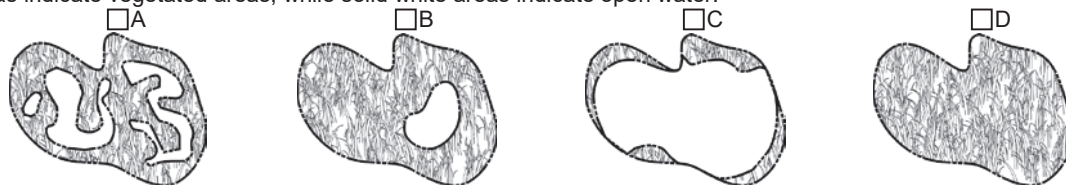
**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/25/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B007
Wetland Type	Non-tidal Freshwater Marsh	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.516636304/79.657168817

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?**  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

**Is the assessment area on a coastal island?**  Yes  No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?**  Yes  No

**Does the assessment area experience overbank flooding during normal rainfall conditions?**  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input checked="" type="checkbox"/> A | <input type="checkbox"/> A            | Not severely altered  |
| <input type="checkbox"/> B            | <input checked="" type="checkbox"/> B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                            |                            |   |
|-----|----------------------------|----------------------------|---|
|     | AA                         | WT                         |   |
| 3a. | <input type="checkbox"/> A | <input type="checkbox"/> A | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B | <input type="checkbox"/> B | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C | <input type="checkbox"/> C | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input type="checkbox"/> D | <input type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A |                            | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B |                            | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input type="checkbox"/> C |                            | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                                    | 5M                                    | 2M                                    |   |
|---------------------------------------|---------------------------------------|---------------------------------------|---|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | <input type="checkbox"/> C            | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | <input type="checkbox"/> D            | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | <input type="checkbox"/> E            | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | <input type="checkbox"/> F            | ≥ 20% coverage of clear-cut land  |
| <input checked="" type="checkbox"/> G | <input checked="" type="checkbox"/> G | <input checked="" type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                         |                       |
|---------------------------------------|----------------------------|-----------------------|
| <input type="checkbox"/> A            | <input type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F | From 15 to < 30 feet  |
| <input checked="" type="checkbox"/> G | <input type="checkbox"/> G | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input checked="" type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input checked="" type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

- |           |                            |                            |  |
|-----------|----------------------------|----------------------------|--|
|           | AA                         | WT                         |  |
| Canopy    | <input type="checkbox"/> A | <input type="checkbox"/> A | Canopy closed, or nearly closed, with natural gaps associated with natural processes |
|           | <input type="checkbox"/> B | <input type="checkbox"/> B | Canopy present, but opened more than natural gaps                                    |
|           | <input type="checkbox"/> C | <input type="checkbox"/> C | Canopy sparse or absent  |
| Mid-Story | <input type="checkbox"/> A | <input type="checkbox"/> A | Dense mid-story/sapling layer  |
|           | <input type="checkbox"/> B | <input type="checkbox"/> B | Moderate density mid-story/sapling layer   |
|           | <input type="checkbox"/> C | <input type="checkbox"/> C | Mid-story/sapling layer sparse or absent   |
| Shrub     | <input type="checkbox"/> A | <input type="checkbox"/> A | Dense shrub layer  |
|           | <input type="checkbox"/> B | <input type="checkbox"/> B | Moderate density shrub layer   |
|           | <input type="checkbox"/> C | <input type="checkbox"/> C | Shrub layer sparse or absent   |
| Herb      | <input type="checkbox"/> A | <input type="checkbox"/> A | Dense herb layer   |
|           | <input type="checkbox"/> B | <input type="checkbox"/> B | Moderate density herb layer  |
|           | <input type="checkbox"/> C | <input type="checkbox"/> C | Herb layer sparse or absent  |

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/24/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B008
Wetland Type	Headwater Forest	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.513211743N/79.660029159W

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed?  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

Is the assessment area on a coastal island?  Yes  No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver?  Yes  No

Does the assessment area experience overbank flooding during normal rainfall conditions?  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Not severely altered  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                                    | 5M                                    | 2M                                    |   |
|---------------------------------------|---------------------------------------|---------------------------------------|---|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | <input type="checkbox"/> C            | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | <input type="checkbox"/> D            | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | <input type="checkbox"/> E            | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | <input type="checkbox"/> F            | ≥ 20% coverage of clear-cut land  |
| <input checked="" type="checkbox"/> G | <input checked="" type="checkbox"/> G | <input checked="" type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                         | WC                                    |                       |
|----------------------------|---------------------------------------|-----------------------|
| <input type="checkbox"/> A | <input type="checkbox"/> A            | ≥ 100 feet            |
| <input type="checkbox"/> B | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input type="checkbox"/> F | <input checked="" type="checkbox"/> F | From 15 to < 30 feet  |
| <input type="checkbox"/> G | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input checked="" type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input checked="" type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input type="checkbox"/> A	<input type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input checked="" type="checkbox"/> B	<input checked="" type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input type="checkbox"/> C	<input type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

WL abuts cleared gas ROW.

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/24/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B009a
Wetland Type	Headwater Forest	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.516016283/-79.656736591

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?**  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

**Is the assessment area on a coastal island?**  Yes  No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?**  Yes  No

**Does the assessment area experience overbank flooding during normal rainfall conditions?**  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Not severely altered  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                                    | 5M                                    | 2M                                    |   |
|---------------------------------------|---------------------------------------|---------------------------------------|---|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | <input type="checkbox"/> C            | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | <input type="checkbox"/> D            | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | <input checked="" type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | <input checked="" type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input checked="" type="checkbox"/> G | <input checked="" type="checkbox"/> G | <input checked="" type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                         | WC                                    |                       |
|----------------------------|---------------------------------------|-----------------------|
| <input type="checkbox"/> A | <input type="checkbox"/> A            | ≥ 100 feet            |
| <input type="checkbox"/> B | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input type="checkbox"/> F | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G | <input checked="" type="checkbox"/> G | From 5 to < 15 feet   |
| <input type="checkbox"/> H | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input checked="" type="checkbox"/> I	<input checked="" type="checkbox"/> I	<input checked="" type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input checked="" type="checkbox"/> C	From 50 to < 100 acres
<input checked="" type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

- |           |                                       |                                       |  |
|-----------|---------------------------------------|---------------------------------------|--|
|           | AA                                    | WT                                    |  |
| Canopy    | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Canopy closed, or nearly closed, with natural gaps associated with natural processes |
|           | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Canopy present, but opened more than natural gaps                                    |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Canopy sparse or absent  |
| Mid-Story | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense mid-story/sapling layer  |
|           | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Moderate density mid-story/sapling layer   |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Mid-story/sapling layer sparse or absent   |
| Shrub     | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense shrub layer  |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Moderate density shrub layer   |
|           | <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Shrub layer sparse or absent   |
| Herb      | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Dense herb layer   |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Moderate density herb layer  |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Herb layer sparse or absent  |

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/24/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B009b
Wetland Type	Non-Tidal Freshwater Marsh	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.517046768/-79.656379297

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?**  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

**Is the assessment area on a coastal island?**  Yes  No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?**  Yes  No

**Does the assessment area experience overbank flooding during normal rainfall conditions?**  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input checked="" type="checkbox"/> A | <input type="checkbox"/> A            | Not severely altered  |
| <input type="checkbox"/> B            | <input checked="" type="checkbox"/> B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                            |                            |   |
|-----|----------------------------|----------------------------|---|
|     | AA                         | WT                         |   |
| 3a. | <input type="checkbox"/> A | <input type="checkbox"/> A | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B | <input type="checkbox"/> B | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C | <input type="checkbox"/> C | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input type="checkbox"/> D | <input type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A |                            | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B |                            | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input type="checkbox"/> C |                            | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                                    | 5M                                    | 2M                                    |   |
|---------------------------------------|---------------------------------------|---------------------------------------|---|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | <input type="checkbox"/> C            | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | <input type="checkbox"/> D            | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | <input type="checkbox"/> E            | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | <input type="checkbox"/> F            | ≥ 20% coverage of clear-cut land  |
| <input checked="" type="checkbox"/> G | <input checked="" type="checkbox"/> G | <input checked="" type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                         |                       |
|---------------------------------------|----------------------------|-----------------------|
| <input type="checkbox"/> A            | <input type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F | From 15 to < 30 feet  |
| <input checked="" type="checkbox"/> G | <input type="checkbox"/> G | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input checked="" type="checkbox"/> I	<input checked="" type="checkbox"/> I From 0.1 to < 0.5 acre
<input checked="" type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input checked="" type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input checked="" type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes
- No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input type="checkbox"/> A	<input type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input type="checkbox"/> C	<input type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/24/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B010
Wetland Type	Non-Tidal Freshwater Marsh	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.519180981/-79.654751578

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed?  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

Is the assessment area on a coastal island?  Yes  No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver?  Yes  No

Does the assessment area experience overbank flooding during normal rainfall conditions?  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Not severely altered  |
| <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input type="checkbox"/> A            | <input checked="" type="checkbox"/> A | Water storage capacity <u>and</u> duration are not altered.  |
| <input checked="" type="checkbox"/> B | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                         | 5M                         | 2M                         |   |
|----------------------------|----------------------------|----------------------------|---|
| <input type="checkbox"/> A | <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B | <input type="checkbox"/> B | <input type="checkbox"/> B | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C | <input type="checkbox"/> C | <input type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D | <input type="checkbox"/> D | <input type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E | <input type="checkbox"/> E | <input type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F | <input type="checkbox"/> F | <input type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | <input type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                         | WC                         |                       |
|----------------------------|----------------------------|-----------------------|
| <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B | <input type="checkbox"/> B | From 80 to < 100 feet |
| <input type="checkbox"/> C | <input type="checkbox"/> C | From 50 to < 80 feet  |
| <input type="checkbox"/> D | <input type="checkbox"/> D | From 40 to < 50 feet  |
| <input type="checkbox"/> E | <input type="checkbox"/> E | From 30 to < 40 feet  |
| <input type="checkbox"/> F | <input type="checkbox"/> F | From 15 to < 30 feet  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | From 5 to < 15 feet   |
| <input type="checkbox"/> H | <input type="checkbox"/> H | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input checked="" type="checkbox"/> H	<input checked="" type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input checked="" type="checkbox"/> F	<input checked="" type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes
- No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input type="checkbox"/> A	<input type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

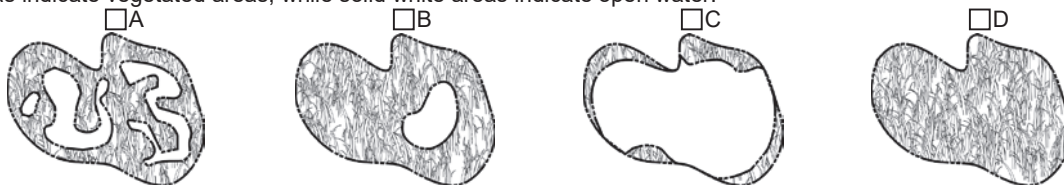
**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

Overland flow altered by road and ditches adjacent to wetland.

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/25/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B011
Wetland Type	Non-Tidal Freshwater Marsh	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Mountain Run
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.538182045/79.636198321

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?**  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

**Is the assessment area on a coastal island?**  Yes  No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?**  Yes  No

**Does the assessment area experience overbank flooding during normal rainfall conditions?**  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                     |    |                                     |   |
|-------------------------------------|----|-------------------------------------|---|
|                                     | GS | VS                                  |   |
| <input type="checkbox"/>            | A  | <input type="checkbox"/>            | A Not severely altered  |
| <input checked="" type="checkbox"/> | B  | <input checked="" type="checkbox"/> | B Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                     |      |                                     |  |
|-------------------------------------|------|-------------------------------------|--|
|                                     | Surf | Sub                                 |  |
| <input type="checkbox"/>            | A    | <input type="checkbox"/>            | A Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/>            | B    | <input type="checkbox"/>            | B Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input checked="" type="checkbox"/> | C    | <input checked="" type="checkbox"/> | C Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                          |                          |   |
|-----|--------------------------|--------------------------|---|
|     | AA                       | WT                       |   |
| 3a. | <input type="checkbox"/> | <input type="checkbox"/> | A Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> | <input type="checkbox"/> | B Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> | <input type="checkbox"/> | C Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input type="checkbox"/> | <input type="checkbox"/> | D Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> |                          | A Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> |                          | B Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input type="checkbox"/> |                          | C Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                                    | 5M                                    | 2M                                    |   |
|---------------------------------------|---------------------------------------|---------------------------------------|---|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D            | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | <input type="checkbox"/> E            | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F            | <input checked="" type="checkbox"/> F | <input checked="" type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | <input type="checkbox"/> G            | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                         |                       |
|---------------------------------------|----------------------------|-----------------------|
| <input type="checkbox"/> A            | <input type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F | From 15 to < 30 feet  |
| <input checked="" type="checkbox"/> G | <input type="checkbox"/> G | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input checked="" type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input checked="" type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

- |           |                            |                            |  |
|-----------|----------------------------|----------------------------|--|
|           | AA                         | WT                         |  |
| Canopy    | <input type="checkbox"/> A | <input type="checkbox"/> A | Canopy closed, or nearly closed, with natural gaps associated with natural processes |
|           | <input type="checkbox"/> B | <input type="checkbox"/> B | Canopy present, but opened more than natural gaps                                    |
|           | <input type="checkbox"/> C | <input type="checkbox"/> C | Canopy sparse or absent  |
| Mid-Story | <input type="checkbox"/> A | <input type="checkbox"/> A | Dense mid-story/sapling layer  |
|           | <input type="checkbox"/> B | <input type="checkbox"/> B | Moderate density mid-story/sapling layer   |
|           | <input type="checkbox"/> C | <input type="checkbox"/> C | Mid-story/sapling layer sparse or absent   |
| Shrub     | <input type="checkbox"/> A | <input type="checkbox"/> A | Dense shrub layer  |
|           | <input type="checkbox"/> B | <input type="checkbox"/> B | Moderate density shrub layer   |
|           | <input type="checkbox"/> C | <input type="checkbox"/> C | Shrub layer sparse or absent   |
| Herb      | <input type="checkbox"/> A | <input type="checkbox"/> A | Dense herb layer   |
|           | <input type="checkbox"/> B | <input type="checkbox"/> B | Moderate density herb layer  |
|           | <input type="checkbox"/> C | <input type="checkbox"/> C | Herb layer sparse or absent  |

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/25/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B012
Wetland Type	Basin Wetland	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Mountain Run
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.539457818/79.634387144

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?**  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

**Is the assessment area on a coastal island?**  Yes  No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?**  Yes  No

**Does the assessment area experience overbank flooding during normal rainfall conditions?**  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Not severely altered  |
| <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                         | 5M                         | 2M                         |   |
|----------------------------|----------------------------|----------------------------|---|
| <input type="checkbox"/> A | <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B | <input type="checkbox"/> B | <input type="checkbox"/> B | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C | <input type="checkbox"/> C | <input type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D | <input type="checkbox"/> D | <input type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E | <input type="checkbox"/> E | <input type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F | <input type="checkbox"/> F | <input type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | <input type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                                    |                       |
|---------------------------------------|---------------------------------------|-----------------------|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input checked="" type="checkbox"/> K	<input checked="" type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input checked="" type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input type="checkbox"/> A	<input type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/25/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B013b
Wetland Type	Pine Flat	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Mountain Run
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010104
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.541667413/79.63262024

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed?  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

Is the assessment area on a coastal island?  Yes  No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver?  Yes  No

Does the assessment area experience overbank flooding during normal rainfall conditions?  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Not severely altered  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                         | 5M                         | 2M                         |   |
|----------------------------|----------------------------|----------------------------|---|
| <input type="checkbox"/> A | <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B | <input type="checkbox"/> B | <input type="checkbox"/> B | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C | <input type="checkbox"/> C | <input type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D | <input type="checkbox"/> D | <input type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E | <input type="checkbox"/> E | <input type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F | <input type="checkbox"/> F | <input type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | <input type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                                    |                       |
|---------------------------------------|---------------------------------------|-----------------------|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input checked="" type="checkbox"/> I	<input checked="" type="checkbox"/> I	<input checked="" type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input checked="" type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

- |           |                                       |                                       |  |
|-----------|---------------------------------------|---------------------------------------|--|
|           | AA                                    | WT                                    |  |
| Canopy    | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Canopy closed, or nearly closed, with natural gaps associated with natural processes |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Canopy present, but opened more than natural gaps                                    |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Canopy sparse or absent  |
| Mid-Story | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense mid-story/sapling layer  |
|           | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Moderate density mid-story/sapling layer   |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Mid-story/sapling layer sparse or absent   |
| Shrub     | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense shrub layer  |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Moderate density shrub layer   |
|           | <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Shrub layer sparse or absent   |
| Herb      | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense herb layer   |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Moderate density herb layer  |
|           | <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Herb layer sparse or absent  |

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

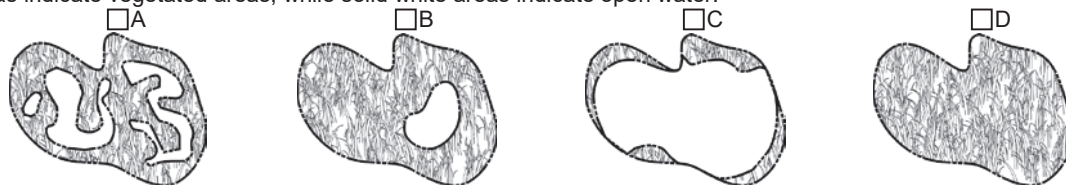
**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersions between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/24/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B027
Wetland Type	Riverine Swamp Forest	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Cascade Creek
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.528131016/79.646126512

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed?  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

Is the assessment area on a coastal island?  Yes  No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver?  Yes  No

Does the assessment area experience overbank flooding during normal rainfall conditions?  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                     |    |                                     |   |
|-------------------------------------|----|-------------------------------------|---|
|                                     | GS | VS                                  |   |
| <input checked="" type="checkbox"/> | A  | <input checked="" type="checkbox"/> | A Not severely altered  |
| <input type="checkbox"/>            | B  | <input type="checkbox"/>            | B Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                     |      |                                     |  |
|-------------------------------------|------|-------------------------------------|--|
|                                     | Surf | Sub                                 |  |
| <input checked="" type="checkbox"/> | A    | <input checked="" type="checkbox"/> | A Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/>            | B    | <input type="checkbox"/>            | B Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/>            | C    | <input type="checkbox"/>            | C Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                     |                                     |   |
|-----|-------------------------------------|-------------------------------------|---|
|     | AA                                  | WT                                  |   |
| 3a. | <input type="checkbox"/>            | <input type="checkbox"/>            | A Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/>            | <input type="checkbox"/>            | B Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/>            | <input type="checkbox"/>            | C Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | D Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/>            |                                     | A Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/>            |                                     | B Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> |                                     | C Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                                    | 5M                                    | 2M                                    |   |
|---------------------------------------|---------------------------------------|---------------------------------------|---|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | <input type="checkbox"/> C            | ≥ 20% coverage of pasture   |
| <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input checked="" type="checkbox"/> E | <input checked="" type="checkbox"/> E | <input checked="" type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | <input type="checkbox"/> F            | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | <input type="checkbox"/> G            | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                         | WC                                    |                       |
|----------------------------|---------------------------------------|-----------------------|
| <input type="checkbox"/> A | <input type="checkbox"/> A            | ≥ 100 feet            |
| <input type="checkbox"/> B | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E | <input checked="" type="checkbox"/> E | From 30 to < 40 feet  |
| <input type="checkbox"/> F | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input checked="" type="checkbox"/> J	<input checked="" type="checkbox"/> J	<input checked="" type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input checked="" type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes  No If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A ≥ 25% coverage of vegetation  
 B < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input type="checkbox"/> C	<input type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input checked="" type="checkbox"/> B	<input checked="" type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersions between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A Overbank and overland flow are not severely altered in the assessment area.  
 B Overbank flow is severely altered in the assessment area.  
 C Overland flow is severely altered in the assessment area.  
 D Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/24/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B027a
Wetland Type	Non-Tidal Freshwater Marsh	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Cascade Creek
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.528131016/79.646126512

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?**  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

**Is the assessment area on a coastal island?**  Yes  No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?**  Yes  No

**Does the assessment area experience overbank flooding during normal rainfall conditions?**  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                     |    |                                     |   |
|-------------------------------------|----|-------------------------------------|---|
|                                     | GS | VS                                  |   |
| <input checked="" type="checkbox"/> | A  | <input checked="" type="checkbox"/> | A Not severely altered  |
| <input type="checkbox"/>            | B  | <input type="checkbox"/>            | B Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                     |      |                                     |  |
|-------------------------------------|------|-------------------------------------|--|
|                                     | Surf | Sub                                 |  |
| <input checked="" type="checkbox"/> | A    | <input checked="" type="checkbox"/> | A Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/>            | B    | <input type="checkbox"/>            | B Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/>            | C    | <input type="checkbox"/>            | C Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                          |                          |   |
|-----|--------------------------|--------------------------|---|
|     | AA                       | WT                       |   |
| 3a. | <input type="checkbox"/> | <input type="checkbox"/> | A Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> | <input type="checkbox"/> | B Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> | <input type="checkbox"/> | C Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input type="checkbox"/> | <input type="checkbox"/> | D Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> |                          | A Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> |                          | B Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input type="checkbox"/> |                          | C Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                                    | 5M                                    | 2M                                    |   |
|---------------------------------------|---------------------------------------|---------------------------------------|---|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | <input type="checkbox"/> C            | ≥ 20% coverage of pasture   |
| <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input checked="" type="checkbox"/> E | <input checked="" type="checkbox"/> E | <input checked="" type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | <input type="checkbox"/> F            | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | <input type="checkbox"/> G            | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                         |                       |
|---------------------------------------|----------------------------|-----------------------|
| <input type="checkbox"/> A            | <input type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E | From 30 to < 40 feet  |
| <input checked="" type="checkbox"/> F | <input type="checkbox"/> F | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input checked="" type="checkbox"/> J	<input checked="" type="checkbox"/> J From 0.01 to < 0.1 acre
<input checked="" type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input checked="" type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes  No If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A ≥ 25% coverage of vegetation  
 B < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input type="checkbox"/> A	<input type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input type="checkbox"/> C	<input type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A Overbank and overland flow are not severely altered in the assessment area.  
 B Overbank flow is severely altered in the assessment area.  
 C Overland flow is severely altered in the assessment area.  
 D Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southagate	Date of Evaluation	10/24/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B028
Wetland Type	Basin Wetland	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Cascade Creek
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.529337282/79.644831362

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?**  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

**Is the assessment area on a coastal island?**  Yes  No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?**  Yes  No

**Does the assessment area experience overbank flooding during normal rainfall conditions?**  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Not severely altered  |
| <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                         | 5M                         | 2M                         |   |
|----------------------------|----------------------------|----------------------------|---|
| <input type="checkbox"/> A | <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B | <input type="checkbox"/> B | <input type="checkbox"/> B | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C | <input type="checkbox"/> C | <input type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D | <input type="checkbox"/> D | <input type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E | <input type="checkbox"/> E | <input type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F | <input type="checkbox"/> F | <input type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | <input type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                                    |                       |
|---------------------------------------|---------------------------------------|-----------------------|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input checked="" type="checkbox"/> G	<input checked="" type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input checked="" type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes
- No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input type="checkbox"/> A	<input type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersions between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/25/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B029
Wetland Type	Basin Wetland	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Cascade Creek
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.530525822/-79.642631657

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?**  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

**Is the assessment area on a coastal island?**  Yes  No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?**  Yes  No

**Does the assessment area experience overbank flooding during normal rainfall conditions?**  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Not severely altered  |
| <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                         | 5M                         | 2M                         |   |
|----------------------------|----------------------------|----------------------------|---|
| <input type="checkbox"/> A | <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B | <input type="checkbox"/> B | <input type="checkbox"/> B | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C | <input type="checkbox"/> C | <input type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D | <input type="checkbox"/> D | <input type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E | <input type="checkbox"/> E | <input type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F | <input type="checkbox"/> F | <input type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | <input type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                                    |                       |
|---------------------------------------|---------------------------------------|-----------------------|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input checked="" type="checkbox"/> G	<input checked="" type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input checked="" type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input type="checkbox"/> A	<input type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southagate	Date of Evaluation	10/25/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B030
Wetland Type	Non-tidal Freshwater Marsh	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Cascade Creek
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.529299482/-79.643140079

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed?  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

Is the assessment area on a coastal island?  Yes  No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver?  Yes  No

Does the assessment area experience overbank flooding during normal rainfall conditions?  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Not severely altered  |
| <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Water storage capacity <u>and</u> duration are not altered.  |
| <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input type="checkbox"/> D            | <input type="checkbox"/> D            | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                                    | 5M                                    | 2M                                    |   |
|---------------------------------------|---------------------------------------|---------------------------------------|---|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | <input type="checkbox"/> C            | ≥ 20% coverage of pasture   |
| <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input checked="" type="checkbox"/> E | <input checked="" type="checkbox"/> E | <input checked="" type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | <input type="checkbox"/> F            | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | <input type="checkbox"/> G            | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                         |                       |
|---------------------------------------|----------------------------|-----------------------|
| <input checked="" type="checkbox"/> A | <input type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input checked="" type="checkbox"/> H	<input checked="" type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input checked="" type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes
- No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

- |           |                                       |                                       |  |
|-----------|---------------------------------------|---------------------------------------|--|
|           | AA                                    | WT                                    |  |
| Canopy    | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Canopy closed, or nearly closed, with natural gaps associated with natural processes |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Canopy present, but opened more than natural gaps                                    |
|           | <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Canopy sparse or absent  |
| Mid-Story | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense mid-story/sapling layer  |
|           | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Moderate density mid-story/sapling layer   |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Mid-story/sapling layer sparse or absent   |
| Shrub     | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense shrub layer  |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Moderate density shrub layer   |
|           | <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Shrub layer sparse or absent   |
| Herb      | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Dense herb layer   |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Moderate density herb layer  |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Herb layer sparse or absent  |

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

Overbank flow impacted by stream incision

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/25/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B031a
Wetland Type	Basin Wetland	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Cascade Creek
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.530941150/-79.643797843

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?**  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

**Is the assessment area on a coastal island?**  Yes  No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?**  Yes  No

**Does the assessment area experience overbank flooding during normal rainfall conditions?**  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Not severely altered  |
| <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input type="checkbox"/> A            | <input checked="" type="checkbox"/> A | Water storage capacity <u>and</u> duration are not altered.  |
| <input checked="" type="checkbox"/> B | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                         | 5M                         | 2M                         |   |
|----------------------------|----------------------------|----------------------------|---|
| <input type="checkbox"/> A | <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B | <input type="checkbox"/> B | <input type="checkbox"/> B | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C | <input type="checkbox"/> C | <input type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D | <input type="checkbox"/> D | <input type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E | <input type="checkbox"/> E | <input type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F | <input type="checkbox"/> F | <input type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | <input type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                                    |                       |
|---------------------------------------|---------------------------------------|-----------------------|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input checked="" type="checkbox"/> G	<input checked="" type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input checked="" type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes
- No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input type="checkbox"/> A	<input type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersions between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/25/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B031b
Wetland Type	Basin Wetland	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Cascade Creek
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.531186704/-79.643498818

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?**  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

**Is the assessment area on a coastal island?**  Yes  No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?**  Yes  No

**Does the assessment area experience overbank flooding during normal rainfall conditions?**  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Not severely altered  |
| <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input type="checkbox"/> A            | <input checked="" type="checkbox"/> A | Water storage capacity <u>and</u> duration are not altered.  |
| <input checked="" type="checkbox"/> B | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                         | 5M                         | 2M                         |   |
|----------------------------|----------------------------|----------------------------|---|
| <input type="checkbox"/> A | <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B | <input type="checkbox"/> B | <input type="checkbox"/> B | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C | <input type="checkbox"/> C | <input type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D | <input type="checkbox"/> D | <input type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E | <input type="checkbox"/> E | <input type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F | <input type="checkbox"/> F | <input type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | <input type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                                    |                       |
|---------------------------------------|---------------------------------------|-----------------------|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input checked="" type="checkbox"/> G	<input checked="" type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input checked="" type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes
- No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input type="checkbox"/> A	<input type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input checked="" type="checkbox"/> B	<input checked="" type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southagate	Date of Evaluation	10/25/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B032
Wetland Type	Basin Wetland	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Cascade Creek
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.534483915/-79.639091413

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?**  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

**Is the assessment area on a coastal island?**  Yes  No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?**  Yes  No

**Does the assessment area experience overbank flooding during normal rainfall conditions?**  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Not severely altered  |
| <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Water storage capacity <u>and</u> duration are not altered.  |
| <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input type="checkbox"/> A            | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input checked="" type="checkbox"/> C | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                         | 5M                         | 2M                         |   |
|----------------------------|----------------------------|----------------------------|---|
| <input type="checkbox"/> A | <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B | <input type="checkbox"/> B | <input type="checkbox"/> B | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C | <input type="checkbox"/> C | <input type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D | <input type="checkbox"/> D | <input type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E | <input type="checkbox"/> E | <input type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F | <input type="checkbox"/> F | <input type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | <input type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                                    |                       |
|---------------------------------------|---------------------------------------|-----------------------|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input checked="" type="checkbox"/> I	<input checked="" type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input checked="" type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes
- No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

- |           |                                       |                                       |  |
|-----------|---------------------------------------|---------------------------------------|--|
|           | AA                                    | WT                                    |  |
| Canopy    | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Canopy closed, or nearly closed, with natural gaps associated with natural processes |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Canopy present, but opened more than natural gaps                                    |
|           | <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Canopy sparse or absent  |
| Mid-Story | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense mid-story/sapling layer  |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Moderate density mid-story/sapling layer   |
|           | <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Mid-story/sapling layer sparse or absent   |
| Shrub     | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense shrub layer  |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Moderate density shrub layer   |
|           | <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Shrub layer sparse or absent   |
| Herb      | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Dense herb layer   |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Moderate density herb layer  |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Herb layer sparse or absent  |

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersions between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/24/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B034
Wetland Type	Basin Wetland	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Cascade Creek
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.519147103, -79.669861591

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed?  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

Is the assessment area on a coastal island?  Yes  No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver?  Yes  No

Does the assessment area experience overbank flooding during normal rainfall conditions?  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Not severely altered  |
| <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input type="checkbox"/> A            | <input checked="" type="checkbox"/> A | Water storage capacity <u>and</u> duration are not altered.  |
| <input checked="" type="checkbox"/> B | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                         | 5M                         | 2M                         |   |
|----------------------------|----------------------------|----------------------------|---|
| <input type="checkbox"/> A | <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B | <input type="checkbox"/> B | <input type="checkbox"/> B | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C | <input type="checkbox"/> C | <input type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D | <input type="checkbox"/> D | <input type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E | <input type="checkbox"/> E | <input type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F | <input type="checkbox"/> F | <input type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | <input type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                                    |                       |
|---------------------------------------|---------------------------------------|-----------------------|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input checked="" type="checkbox"/> F | <input checked="" type="checkbox"/> F | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input checked="" type="checkbox"/> J	<input checked="" type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input checked="" type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes
- No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input type="checkbox"/> A	<input type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersions between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/23/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B051
Wetland Type	Headwater Forest	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.494690513N, 79.677658628W

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed?  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

Is the assessment area on a coastal island?  Yes  No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver?  Yes  No

Does the assessment area experience overbank flooding during normal rainfall conditions?  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Not severely altered  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                                    | 5M                                    | 2M                                    |   |
|---------------------------------------|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | <input type="checkbox"/> C            | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | <input type="checkbox"/> D            | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input checked="" type="checkbox"/> E | <input checked="" type="checkbox"/> E | <input checked="" type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | <input type="checkbox"/> F            | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | <input type="checkbox"/> G            | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                                    |                       |
|---------------------------------------|---------------------------------------|-----------------------|
| <input type="checkbox"/> A            | <input checked="" type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input checked="" type="checkbox"/> G | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input checked="" type="checkbox"/> G	<input checked="" type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input checked="" type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input checked="" type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes  No If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A ≥ 25% coverage of vegetation  
 B < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

- |           |                                       |                                       |  |
|-----------|---------------------------------------|---------------------------------------|--|
|           | AA                                    | WT                                    |  |
| Canopy    | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Canopy closed, or nearly closed, with natural gaps associated with natural processes |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Canopy present, but opened more than natural gaps                                    |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Canopy sparse or absent  |
| Mid-Story | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense mid-story/sapling layer  |
|           | <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Moderate density mid-story/sapling layer   |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Mid-story/sapling layer sparse or absent   |
| Shrub     | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Dense shrub layer  |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Moderate density shrub layer   |
|           | <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Shrub layer sparse or absent   |
| Herb      | <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Dense herb layer   |
|           | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Moderate density herb layer  |
|           | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Herb layer sparse or absent  |

**18. Snags – wetland type condition metric (skip for all marshes)**

- A Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A Overbank and overland flow are not severely altered in the assessment area.  
 B Overbank flow is severely altered in the assessment area.  
 C Overland flow is severely altered in the assessment area.  
 D Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/24/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B052a
Wetland Type	Basin Wetland	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.508010944N/79.665355594W

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed?  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

Is the assessment area on a coastal island?  Yes  No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver?  Yes  No

Does the assessment area experience overbank flooding during normal rainfall conditions?  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Not severely altered  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                         | 5M                         | 2M                         |   |
|----------------------------|----------------------------|----------------------------|---|
| <input type="checkbox"/> A | <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B | <input type="checkbox"/> B | <input type="checkbox"/> B | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C | <input type="checkbox"/> C | <input type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D | <input type="checkbox"/> D | <input type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E | <input type="checkbox"/> E | <input type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F | <input type="checkbox"/> F | <input type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | <input type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                                    |                       |
|---------------------------------------|---------------------------------------|-----------------------|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input checked="" type="checkbox"/> J	<input checked="" type="checkbox"/> J	<input checked="" type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input checked="" type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes  No If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A ≥ 25% coverage of vegetation  
 B < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input type="checkbox"/> C	<input type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C Majority of canopy trees are < 6 inches DBH or no trees.

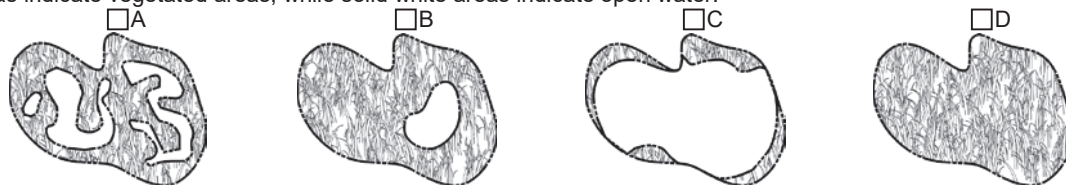
**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersions between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A Overbank and overland flow are not severely altered in the assessment area.  
 B Overbank flow is severely altered in the assessment area.  
 C Overland flow is severely altered in the assessment area.  
 D Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/24/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B052b
Wetland Type	Basin Wetland	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.508394N/-79.665329W

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed?  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

Is the assessment area on a coastal island?  Yes  No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver?  Yes  No

Does the assessment area experience overbank flooding during normal rainfall conditions?  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Not severely altered  |
| <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                         | 5M                         | 2M                         |   |
|----------------------------|----------------------------|----------------------------|---|
| <input type="checkbox"/> A | <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B | <input type="checkbox"/> B | <input type="checkbox"/> B | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C | <input type="checkbox"/> C | <input type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D | <input type="checkbox"/> D | <input type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E | <input type="checkbox"/> E | <input type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F | <input type="checkbox"/> F | <input type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | <input type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                                    |                       |
|---------------------------------------|---------------------------------------|-----------------------|
| <input type="checkbox"/> A            | <input checked="" type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input checked="" type="checkbox"/> E | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input checked="" type="checkbox"/> J	<input checked="" type="checkbox"/> J	<input checked="" type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input checked="" type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input type="checkbox"/> A	<input type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersions between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

WL in cleared gas ROW.

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southagate	Date of Evaluation	10/24/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B053
Wetland Type	Basin Wetland	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Cascade Creek
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.525511600/-79.648538989

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?**  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

**Is the assessment area on a coastal island?**  Yes  No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?**  Yes  No

**Does the assessment area experience overbank flooding during normal rainfall conditions?**  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input checked="" type="checkbox"/> A | <input type="checkbox"/> A            | Not severely altered  |
| <input type="checkbox"/> B            | <input checked="" type="checkbox"/> B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                         | 5M                         | 2M                         |   |
|----------------------------|----------------------------|----------------------------|---|
| <input type="checkbox"/> A | <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B | <input type="checkbox"/> B | <input type="checkbox"/> B | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C | <input type="checkbox"/> C | <input type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D | <input type="checkbox"/> D | <input type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E | <input type="checkbox"/> E | <input type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F | <input type="checkbox"/> F | <input type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | <input type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                                    |                       |
|---------------------------------------|---------------------------------------|-----------------------|
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input checked="" type="checkbox"/> E | <input checked="" type="checkbox"/> E | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input checked="" type="checkbox"/> J	<input checked="" type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input checked="" type="checkbox"/> F	<input checked="" type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes
- No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input type="checkbox"/> A	<input type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersions between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

Notes

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/23/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B055
Wetland Type	Non-Tidal Freshwater Marsh	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.493255956N/79.678782714W

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed?  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

Is the assessment area on a coastal island?  Yes  No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver?  Yes  No

Does the assessment area experience overbank flooding during normal rainfall conditions?  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                     |    |                                     |   |
|-------------------------------------|----|-------------------------------------|---|
|                                     | GS | VS                                  |   |
| <input type="checkbox"/>            | A  | <input type="checkbox"/>            | A Not severely altered  |
| <input checked="" type="checkbox"/> | B  | <input checked="" type="checkbox"/> | B Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                     |      |                                     |  |
|-------------------------------------|------|-------------------------------------|--|
|                                     | Surf | Sub                                 |  |
| <input type="checkbox"/>            | A    | <input type="checkbox"/>            | A Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/>            | B    | <input checked="" type="checkbox"/> | B Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input checked="" type="checkbox"/> | C    | <input type="checkbox"/>            | C Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                          |                          |   |
|-----|--------------------------|--------------------------|---|
|     | AA                       | WT                       |   |
| 3a. | <input type="checkbox"/> | <input type="checkbox"/> | A Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> | <input type="checkbox"/> | B Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> | <input type="checkbox"/> | C Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input type="checkbox"/> | <input type="checkbox"/> | D Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> |                          | A Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> |                          | B Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input type="checkbox"/> |                          | C Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input type="checkbox"/> A            | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input checked="" type="checkbox"/> B | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                                    | 5M                                    | 2M                                    |   |
|---------------------------------------|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | <input type="checkbox"/> C            | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D            | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input checked="" type="checkbox"/> E | <input checked="" type="checkbox"/> E | <input checked="" type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | <input type="checkbox"/> F            | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | <input type="checkbox"/> G            | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                         |                       |
|---------------------------------------|----------------------------|-----------------------|
| <input checked="" type="checkbox"/> A | <input type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input checked="" type="checkbox"/> G	<input checked="" type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input checked="" type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input checked="" type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes  No If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A ≥ 25% coverage of vegetation  
 B < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input type="checkbox"/> A	<input type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input type="checkbox"/> C	<input type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C Majority of canopy trees are < 6 inches DBH or no trees.

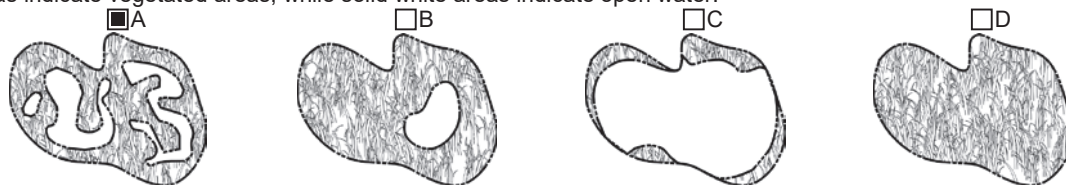
**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A Overbank and overland flow are not severely altered in the assessment area.  
 B Overbank flow is severely altered in the assessment area.  
 C Overland flow is severely altered in the assessment area.  
 D Both overbank and overland flow are severely altered in the assessment area.

Notes

Area is cleared with tire ruts and ditches, and functions as a road. Herbicide use and mowing present.

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/23/24
Applicant/Owner Name	EQT	Wetland Site Name	W-B056
Wetland Type	Non-Tidal Freshwater Marsh	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Dan River
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.493750053N/79.678614699W

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?**  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

**Is the assessment area on a coastal island?**  Yes  No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?**  Yes  No

**Does the assessment area experience overbank flooding during normal rainfall conditions?**  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Not severely altered  |
| <input checked="" type="checkbox"/> B | <input checked="" type="checkbox"/> B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input type="checkbox"/> A            | <input type="checkbox"/> A            | Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/> B            | <input checked="" type="checkbox"/> B | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input checked="" type="checkbox"/> C | <input type="checkbox"/> C            | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                            |                            |   |
|-----|----------------------------|----------------------------|---|
|     | AA                         | WT                         |   |
| 3a. | <input type="checkbox"/> A | <input type="checkbox"/> A | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B | <input type="checkbox"/> B | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C | <input type="checkbox"/> C | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input type="checkbox"/> D | <input type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A |                            | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B |                            | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input type="checkbox"/> C |                            | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                                    | 5M                                    | 2M                                    |   |
|---------------------------------------|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input type="checkbox"/> A            | <input type="checkbox"/> A            | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C            | <input checked="" type="checkbox"/> C | <input checked="" type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | <input type="checkbox"/> D            | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input checked="" type="checkbox"/> E | <input checked="" type="checkbox"/> E | <input checked="" type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | <input type="checkbox"/> F            | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | <input type="checkbox"/> G            | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                         |                       |
|---------------------------------------|----------------------------|-----------------------|
| <input type="checkbox"/> A            | <input type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C | From 50 to < 80 feet  |
| <input checked="" type="checkbox"/> D | <input type="checkbox"/> D | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input checked="" type="checkbox"/> G	<input checked="" type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input checked="" type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input checked="" type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes  No If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A ≥ 25% coverage of vegetation  
 B < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

- |           |                            |                            |  |
|-----------|----------------------------|----------------------------|--|
|           | AA                         | WT                         |  |
| Canopy    | <input type="checkbox"/> A | <input type="checkbox"/> A | Canopy closed, or nearly closed, with natural gaps associated with natural processes |
|           | <input type="checkbox"/> B | <input type="checkbox"/> B | Canopy present, but opened more than natural gaps                                    |
|           | <input type="checkbox"/> C | <input type="checkbox"/> C | Canopy sparse or absent  |
| Mid-Story | <input type="checkbox"/> A | <input type="checkbox"/> A | Dense mid-story/sapling layer  |
|           | <input type="checkbox"/> B | <input type="checkbox"/> B | Moderate density mid-story/sapling layer   |
|           | <input type="checkbox"/> C | <input type="checkbox"/> C | Mid-story/sapling layer sparse or absent   |
| Shrub     | <input type="checkbox"/> A | <input type="checkbox"/> A | Dense shrub layer  |
|           | <input type="checkbox"/> B | <input type="checkbox"/> B | Moderate density shrub layer   |
|           | <input type="checkbox"/> C | <input type="checkbox"/> C | Shrub layer sparse or absent   |
| Herb      | <input type="checkbox"/> A | <input type="checkbox"/> A | Dense herb layer   |
|           | <input type="checkbox"/> B | <input type="checkbox"/> B | Moderate density herb layer  |
|           | <input type="checkbox"/> C | <input type="checkbox"/> C | Herb layer sparse or absent  |

**18. Snags – wetland type condition metric (skip for all marshes)**

- A Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C Majority of canopy trees are < 6 inches DBH or no trees.

**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A Overbank and overland flow are not severely altered in the assessment area.  
 B Overbank flow is severely altered in the assessment area.  
 C Overland flow is severely altered in the assessment area.  
 D Both overbank and overland flow are severely altered in the assessment area.

Notes

Wetland is within a maintained margin of a crop field. Overland flow altered by tilling.

**NC WAM FIELD ASSESSMENT FORM**  
**Accompanies User Manual Version 5**

USACE AID #:		NCDWR #:	
Project Name	MVP Southgate	Date of Evaluation	10/24/24
Applicant/Owner Name	Mountain Valley Pipeline, LLC	Wetland Site Name	W-B056a
Wetland Type	Basin Wetland	Assessor Name/Organization	L. Cooper/BMcD
Level III Ecoregion	Piedmont	Nearest Named Water Body	Cascade Creek
River Basin	Roanoke	USGS 8-Digit Catalogue Unit	03010103
County	Rockingham	NCDWR Region	Winston-Salem
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Precipitation within 48 hours?	Latitude/Longitude (deci-degrees)	36.528623856/-79.645871784

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?**  Yes  No

**Regulatory Considerations** - Were regulatory considerations evaluated?  Yes  No If Yes, check all that apply to the assessment area.

- Anadromous fish
- Federally protected species or State endangered or threatened species
- NCDWR riparian buffer rule in effect
- Abuts a Primary Nursery Area (PNA)
- Publicly owned property
- N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
- Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
- Designated NCNHP reference community
- Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

- Blackwater
- Brownwater
- Tidal (if tidal, check one of the following boxes)  Lunar  Wind  Both

**Is the assessment area on a coastal island?**  Yes  No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?**  Yes  No

**Does the assessment area experience overbank flooding during normal rainfall conditions?**  Yes  No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**

**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| GS                                    | VS                                    |   |
| <input checked="" type="checkbox"/> A | <input type="checkbox"/> A            | Not severely altered  |
| <input type="checkbox"/> B            | <input checked="" type="checkbox"/> B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, reduced diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**

**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

- |                                       |                                       |  |
|---------------------------------------|---------------------------------------|--|
| Surf                                  | Sub                                   |  |
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Water storage capacity <u>and</u> duration are not altered.  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Water storage capacity <u>or</u> duration are altered, but not substantially (typically, not sufficient to change vegetation).   |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Water storage capacity <u>or</u> duration is substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**

**Check a box in each column for each group below.** Select for the assessment area (AA) and the wetland type (WT).

- |     |                                       |                                       |   |
|-----|---------------------------------------|---------------------------------------|---|
|     | AA                                    | WT                                    |   |
| 3a. | <input type="checkbox"/> A            | <input type="checkbox"/> A            | Majority of wetland with depressions able to pond water > 1 foot deep           |
|     | <input type="checkbox"/> B            | <input type="checkbox"/> B            | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
|     | <input type="checkbox"/> C            | <input type="checkbox"/> C            | Majority of wetland with depressions able to pond water 3 to 6 inches deep      |
|     | <input checked="" type="checkbox"/> D | <input checked="" type="checkbox"/> D | Depressions able to pond water < 3 inches deep                                  |
| 3b. | <input type="checkbox"/> A            |                                       | Evidence that maximum depth of inundation is greater than 2 feet                |
|     | <input type="checkbox"/> B            |                                       | Evidence that maximum depth of inundation is between 1 and 2 feet               |
|     | <input checked="" type="checkbox"/> C |                                       | Evidence that maximum depth of inundation is less than 1 foot                   |



**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent guidance for National Technical Committee for Hydric Soils regional indicators.

- 4a. A Sandy soil  
B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)  
C Loamy or clayey soils not exhibiting redoximorphic features  
D Loamy or clayey gleyed soil  
E Histosol or histic epipedon
- 4b. A Soil ribbon < 1 inch  
B Soil ribbon ≥ 1 inch
- 4c. A No peat or muck presence  
B A peat or muck presence

**5. Discharge into Wetland – assessment area opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

- | Surf                                  | Sub                                   |   |
|---------------------------------------|---------------------------------------|---|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | Little or no evidence of pollutants or discharges entering the assessment area  |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area  |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands, tidal marshes, and Estuarine Woody Wetland)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

- | WS                         | 5M                         | 2M                         |   |
|----------------------------|----------------------------|----------------------------|---|
| <input type="checkbox"/> A | <input type="checkbox"/> A | <input type="checkbox"/> A | ≥ 10% impervious surfaces   |
| <input type="checkbox"/> B | <input type="checkbox"/> B | <input type="checkbox"/> B | Confined animal operations (or other local, concentrated source of pollutants)  |
| <input type="checkbox"/> C | <input type="checkbox"/> C | <input type="checkbox"/> C | ≥ 20% coverage of pasture   |
| <input type="checkbox"/> D | <input type="checkbox"/> D | <input type="checkbox"/> D | ≥ 20% coverage of agricultural land (regularly plowed land)   |
| <input type="checkbox"/> E | <input type="checkbox"/> E | <input type="checkbox"/> E | ≥ 20% coverage of maintained grass/herb   |
| <input type="checkbox"/> F | <input type="checkbox"/> F | <input type="checkbox"/> F | ≥ 20% coverage of clear-cut land  |
| <input type="checkbox"/> G | <input type="checkbox"/> G | <input type="checkbox"/> G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed <u>or</u> hydrologic alterations that prevent drainage <u>and/or</u> overbank flow from affecting the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

- 7a. Is assessment area within 50 feet of a tributary or other open water?  
Yes No If Yes, continue to 7b. If No, skip to Metric 8
- 7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)  
A ≥ 50 feet  
B From 30 to < 50 feet  
C From 15 to < 30 feet  
D From 5 to < 15 feet  
E < 5 feet or buffer bypassed by ditches
- 7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.  
≤ 15-feet wide  > 15-feet wide  Other open water (no tributary present)
- 7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?  
Yes No
- 7e. Is the tributary or other open water sheltered or exposed?  
Sheltered – open water width < 2500 feet and no regular boat traffic.  
Exposed – open water width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

- | WT                                    | WC                                    |                       |
|---------------------------------------|---------------------------------------|-----------------------|
| <input checked="" type="checkbox"/> A | <input checked="" type="checkbox"/> A | ≥ 100 feet            |
| <input type="checkbox"/> B            | <input type="checkbox"/> B            | From 80 to < 100 feet |
| <input type="checkbox"/> C            | <input type="checkbox"/> C            | From 50 to < 80 feet  |
| <input type="checkbox"/> D            | <input type="checkbox"/> D            | From 40 to < 50 feet  |
| <input type="checkbox"/> E            | <input type="checkbox"/> E            | From 30 to < 40 feet  |
| <input type="checkbox"/> F            | <input type="checkbox"/> F            | From 15 to < 30 feet  |
| <input type="checkbox"/> G            | <input type="checkbox"/> G            | From 5 to < 15 feet   |
| <input type="checkbox"/> H            | <input type="checkbox"/> H            | < 5 feet              |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- A Evidence of short-duration inundation (< 7 consecutive days)
- B Evidence of saturation, without evidence of inundation
- C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- A Sediment deposition is not excessive, but at approximately natural levels.
- B Sediment deposition is excessive, but not overwhelming the wetland.
- C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)
<input type="checkbox"/> A	<input type="checkbox"/> A	<input type="checkbox"/> A ≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	<input type="checkbox"/> B From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	<input type="checkbox"/> C From 50 to < 100 acres
<input type="checkbox"/> D	<input type="checkbox"/> D	<input type="checkbox"/> D From 25 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	<input type="checkbox"/> E From 10 to < 25 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	<input type="checkbox"/> F From 5 to < 10 acres
<input type="checkbox"/> G	<input checked="" type="checkbox"/> G	<input type="checkbox"/> G From 1 to < 5 acres
<input type="checkbox"/> H	<input type="checkbox"/> H	<input type="checkbox"/> H From 0.5 to < 1 acre
<input type="checkbox"/> I	<input type="checkbox"/> I	<input type="checkbox"/> I From 0.1 to < 0.5 acre
<input checked="" type="checkbox"/> J	<input type="checkbox"/> J	<input type="checkbox"/> J From 0.01 to < 0.1 acre
<input type="checkbox"/> K	<input type="checkbox"/> K	<input type="checkbox"/> K < 0.01 acre <u>or</u> assessment area is clear-cut

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
<input type="checkbox"/> A	<input type="checkbox"/> A	≥ 500 acres
<input type="checkbox"/> B	<input type="checkbox"/> B	From 100 to < 500 acres
<input type="checkbox"/> C	<input type="checkbox"/> C	From 50 to < 100 acres
<input type="checkbox"/> D	<input checked="" type="checkbox"/> D	From 10 to < 50 acres
<input type="checkbox"/> E	<input type="checkbox"/> E	< 10 acres
<input type="checkbox"/> F	<input type="checkbox"/> F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only.**

- Yes  No Wetland type has a surface hydrology connection to open waters/tributary or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

- A 0
- B 1 to 4
- C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
- B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- C Vegetation is dominated by exotic species (> 50% cover of exotics).



**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

- Yes    No   If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

- A   ≥ 25% coverage of vegetation  
 B   < 25% coverage of vegetation

17c. **Check a box in each column for each stratum.** Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	<input type="checkbox"/> A	<input type="checkbox"/> A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	<input type="checkbox"/> B	<input type="checkbox"/> B	Canopy present, but opened more than natural gaps
	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> C	Canopy sparse or absent
Mid-Story	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense mid-story/sapling layer
	<input checked="" type="checkbox"/> B	<input checked="" type="checkbox"/> B	Moderate density mid-story/sapling layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Mid-story/sapling layer sparse or absent
Shrub	<input type="checkbox"/> A	<input type="checkbox"/> A	Dense shrub layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density shrub layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Shrub layer sparse or absent
Herb	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> A	Dense herb layer
	<input type="checkbox"/> B	<input type="checkbox"/> B	Moderate density herb layer
	<input type="checkbox"/> C	<input type="checkbox"/> C	Herb layer sparse or absent

**18. Snags – wetland type condition metric (skip for all marshes)**

- A   Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).  
 B   Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

- A   Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.  
 B   Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.  
 C   Majority of canopy trees are < 6 inches DBH or no trees.

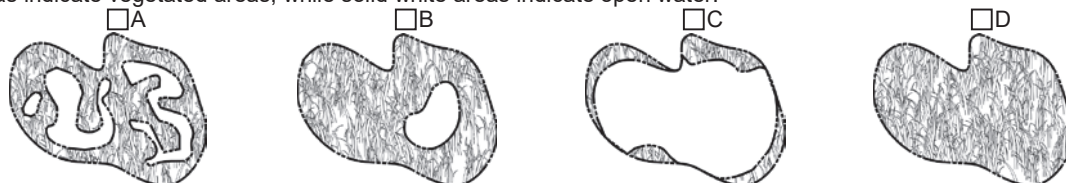
**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

- A   Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).  
 B   Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersions between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.



**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

- A   Overbank and overland flow are not severely altered in the assessment area.  
 B   Overbank flow is severely altered in the assessment area.  
 C   Overland flow is severely altered in the assessment area.  
 D   Both overbank and overland flow are severely altered in the assessment area.

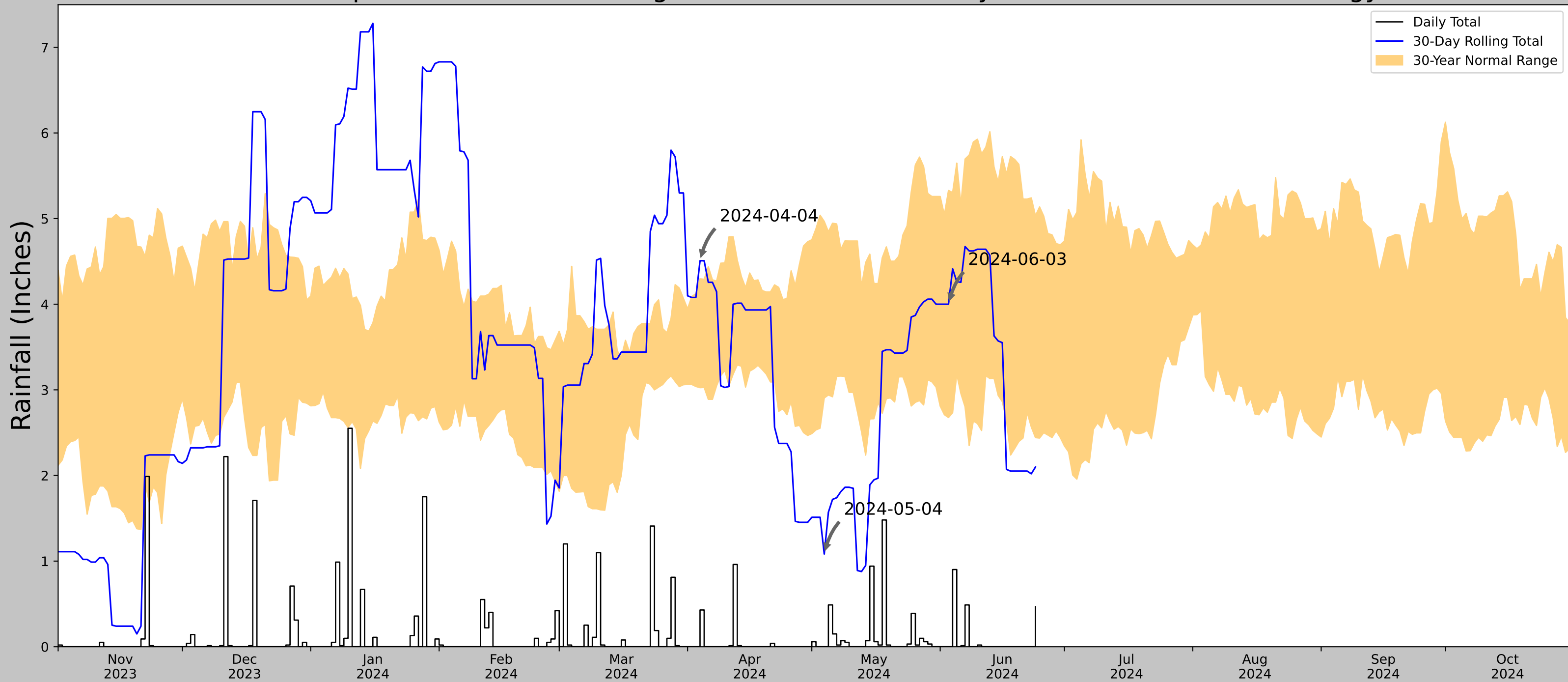
Notes

## **Appendix E – USACE Antecedent Precipitation Tool Results**

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# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network




Coordinates	36.6602981, -79.5133263
Observation Date	2024-06-03
Elevation (ft)	694.149
Drought Index (PDSI)	Normal (2024-05)
WebWIMP H <sub>2</sub> O Balance	Dry Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-06-03	2.676378	5.329134	4.0	Normal	2	3	6
2024-05-04	2.904725	4.967323	1.082677	Dry	1	2	2
2024-04-04	3.025197	4.296851	4.507874	Wet	3	1	3
Result							Normal Conditions - 11



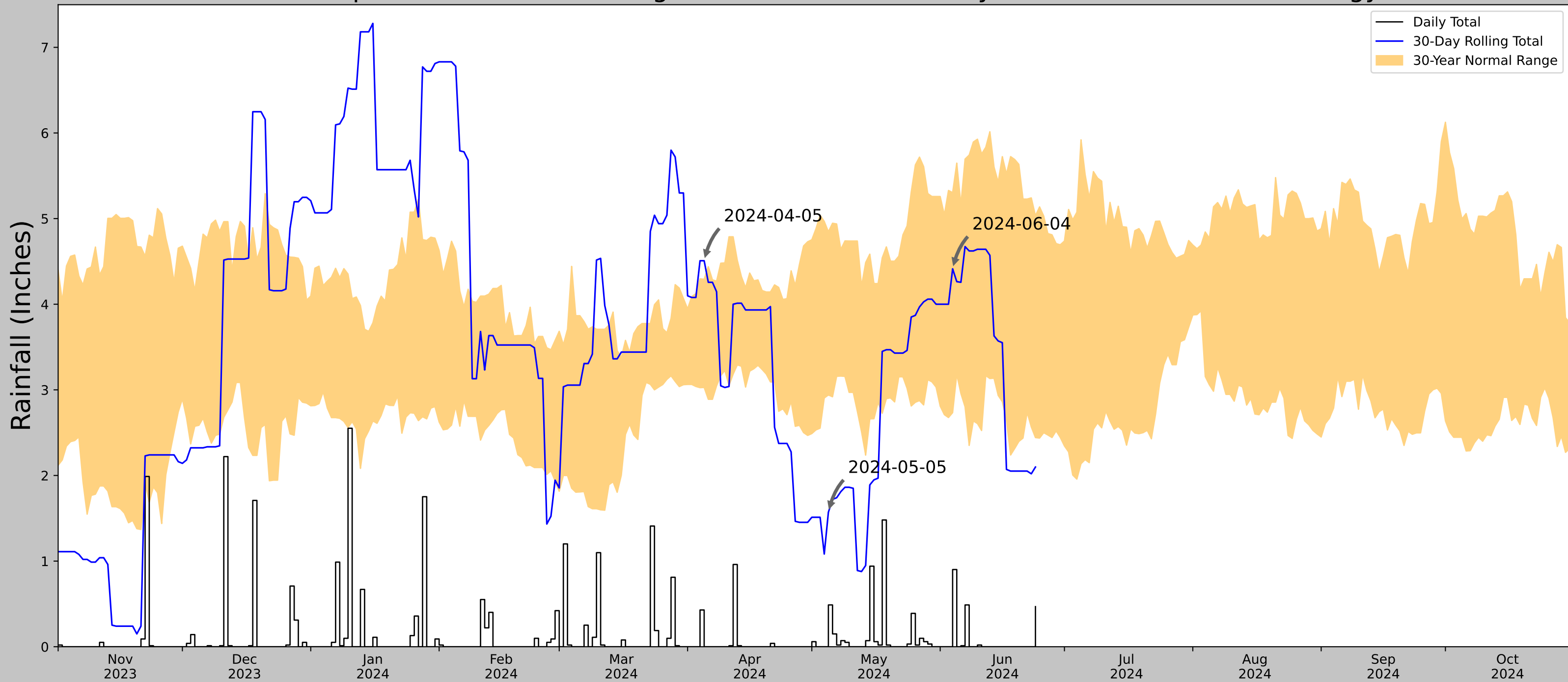
Figures and tables made by the  
Antecedent Precipitation Tool  
Version 2.0

Developed by:  
U.S. Army Corps of Engineers and  
U.S. Army Engineer Research and  
Development Center




Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.538	47.167	6.234	11342	88
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network




Coordinates	36.6602981, -79.5133263
Observation Date	2024-06-04
Elevation (ft)	694.149
Drought Index (PDSI)	Normal (2024-05)
WebWIMP H <sub>2</sub> O Balance	Dry Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-06-04	2.733465	5.303543	4.413386	Normal	2	3	6
2024-05-05	2.940158	4.846063	1.570866	Dry	1	2	2
2024-04-05	3.027953	4.290945	4.507874	Wet	3	1	3
Result							Normal Conditions - 11



Figures and tables made by the  
Antecedent Precipitation Tool  
Version 2.0

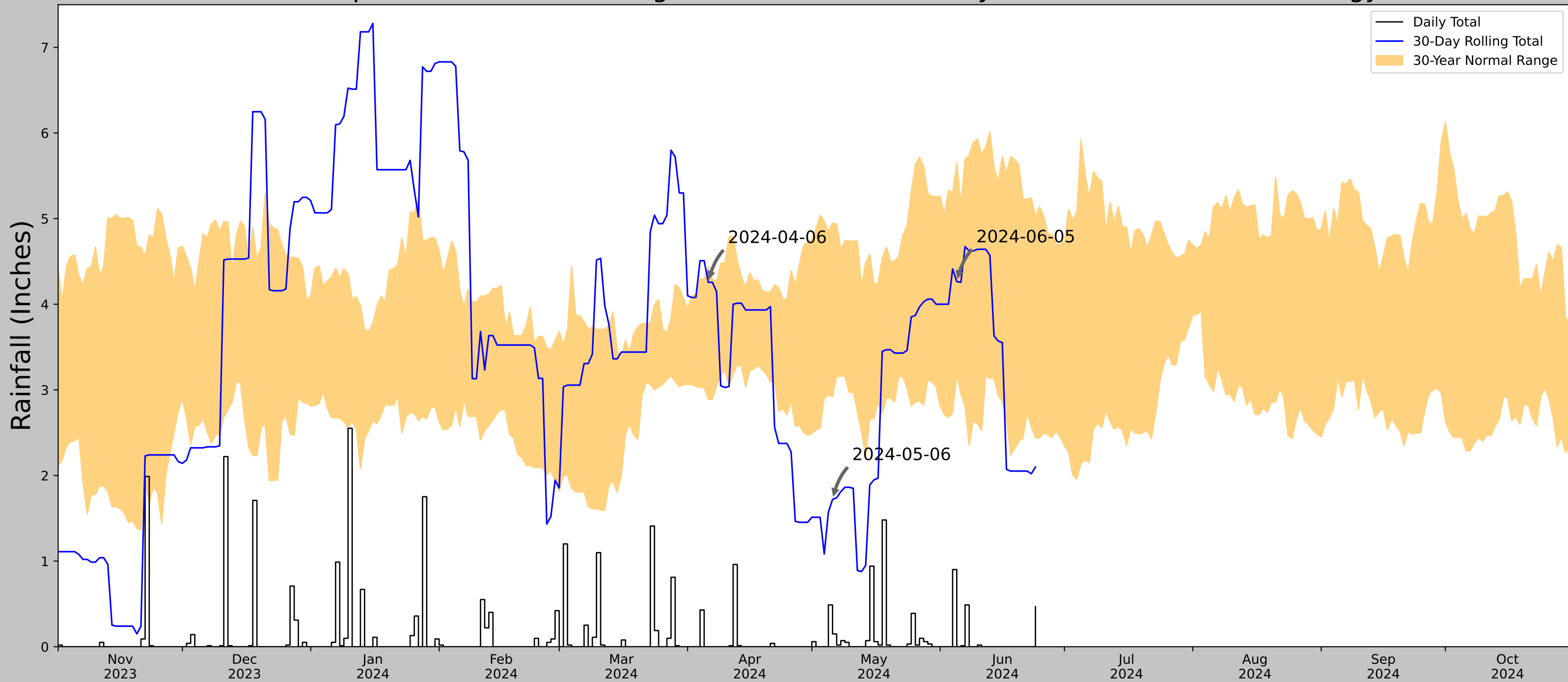
Developed by:  
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U.S. Army Engineer Research and  
Development Center



Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.538	47.167	6.234	11342	88
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0



# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.6602981, -79.5133263
Observation Date	2024-06-05
Elevation (ft)	694.149
Drought Index (PDSI)	Normal (2024-05)
WebWIMP H <sub>2</sub> O Balance	Dry Season

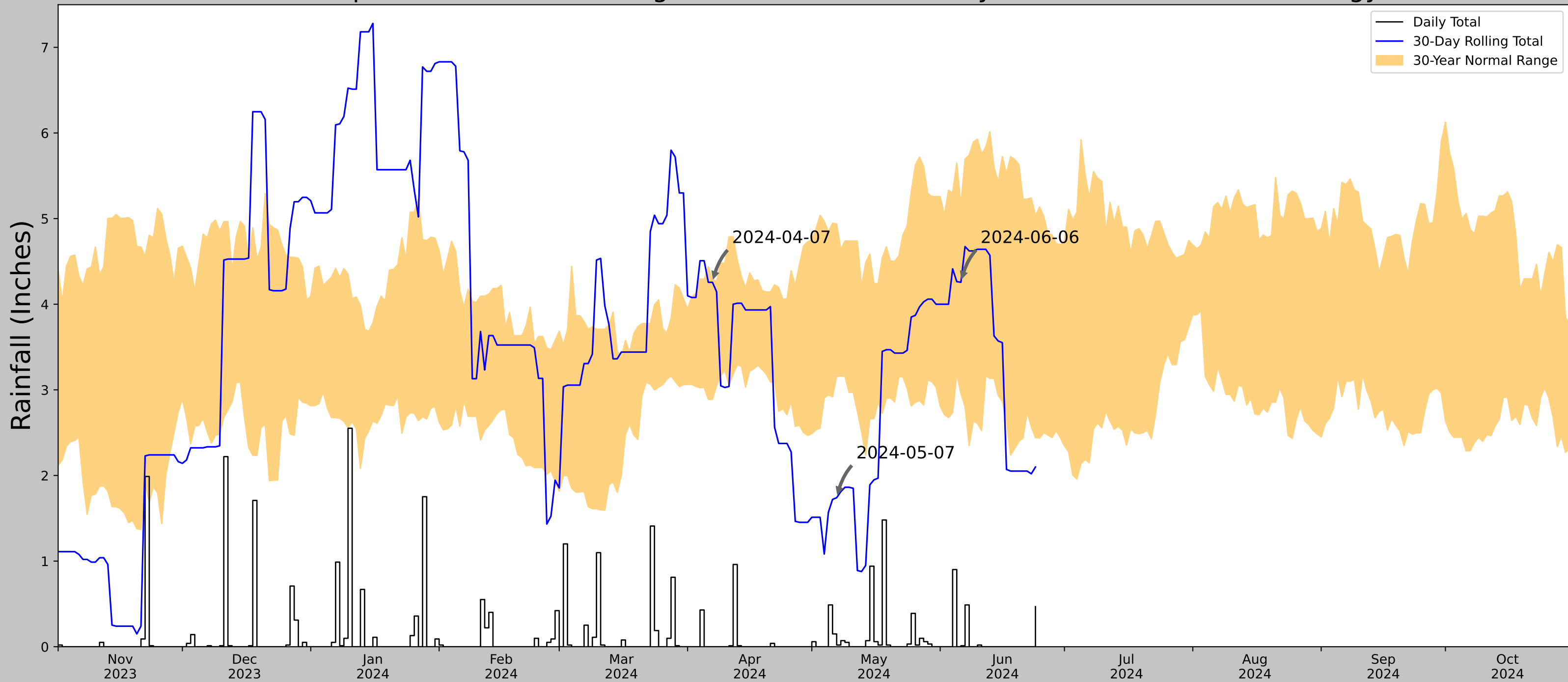
30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-06-05	3.182677	5.648425	4.26378	Normal	2	3	6
2024-05-06	2.918898	4.946063	1.720472	Dry	1	2	2
2024-04-06	2.88937	4.438583	4.255906	Normal	2	1	2
Result							Normal Conditions - 10

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by:  
U.S. Army Corps of Engineers and  
U.S. Army Engineer Research and Development Center


Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.538	47.167	6.234	11342	88
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network




Coordinates	36.6602981, -79.5133263
Observation Date	2024-06-06
Elevation (ft)	694.149
Drought Index (PDSI)	Normal (2024-05)
WebWIMP H <sub>2</sub> O Balance	Dry Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-06-06	2.956693	5.162992	4.255906	Normal	2	3	6
2024-05-07	3.158268	4.937795	1.740158	Dry	1	2	2
2024-04-07	2.88937	4.285433	4.255906	Normal	2	1	2
Result							Normal Conditions - 10



Figures and tables made by the Antecedent Precipitation Tool Version 2.0

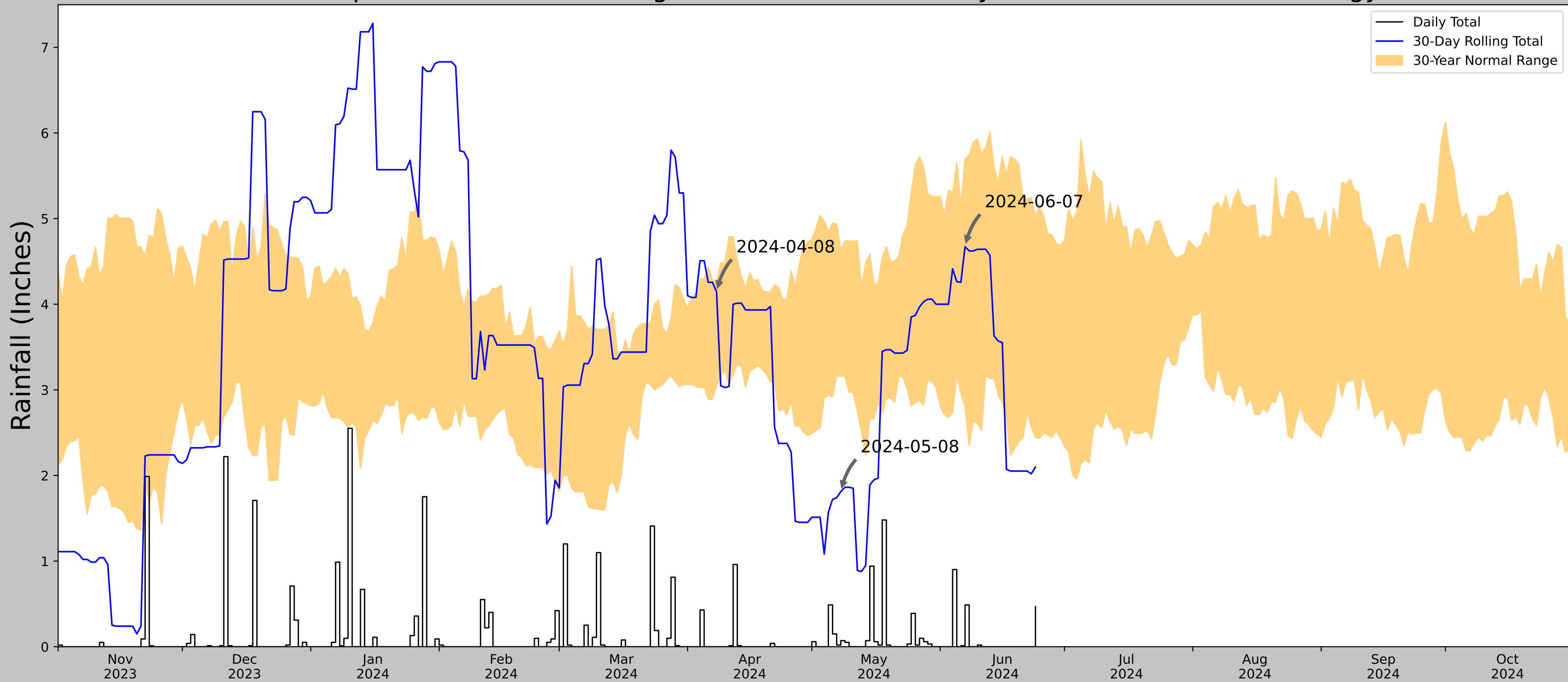
Developed by:  
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U.S. Army Engineer Research and Development Center



Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.538	47.167	6.234	11342	88
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0




# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network




Coordinates	36.6602981, -79.5133263
Observation Date	2024-06-07
Elevation (ft)	694.149
Drought Index (PDSI)	Normal (2024-05)
WebWIMP H <sub>2</sub> O Balance	Dry Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-06-07	2.802362	5.695276	4.673228	Normal	2	3	6
2024-05-08	3.16063	4.63937	1.811024	Dry	1	2	2
2024-04-08	3.04685	4.268898	4.145669	Normal	2	1	2
Result							Normal Conditions - 10



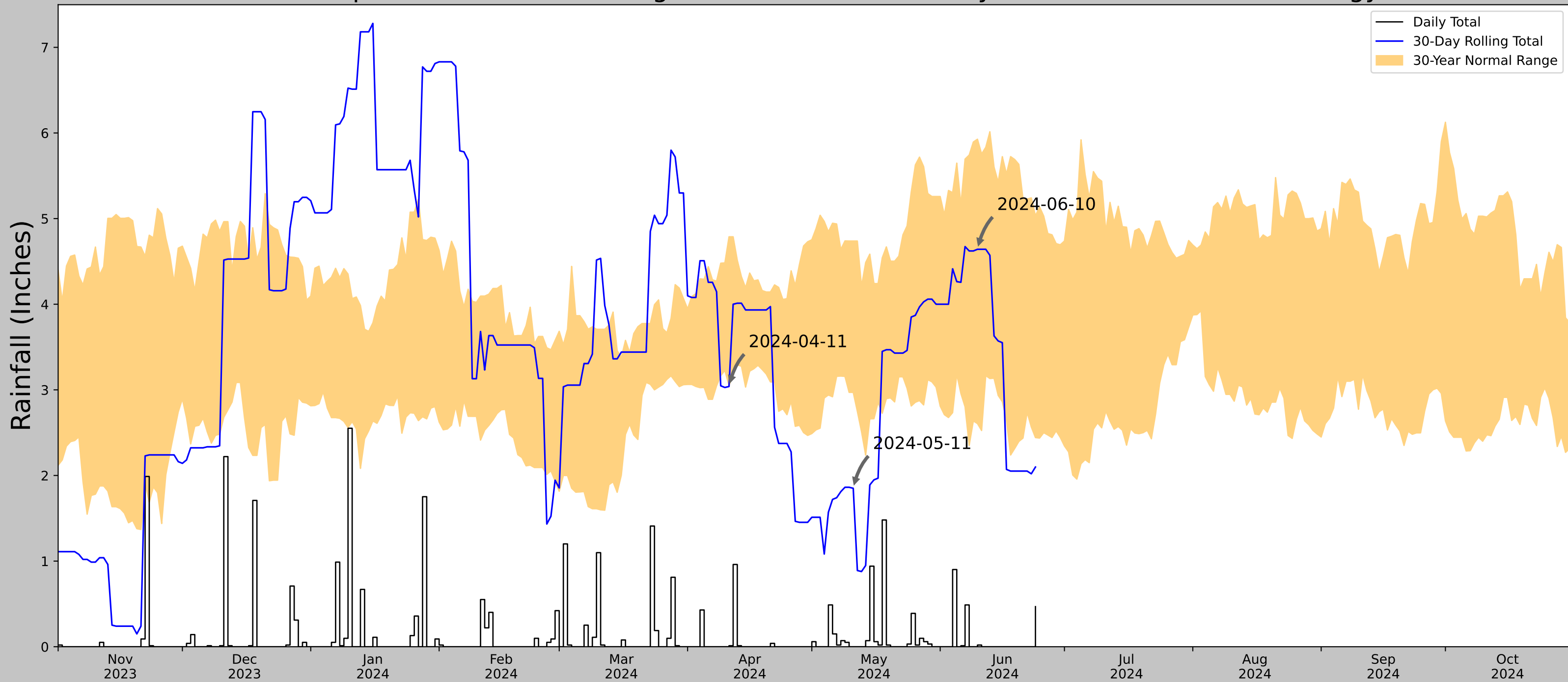
Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by:  
U.S. Army Corps of Engineers and  
U.S. Army Engineer Research and Development Center




Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.538	47.167	6.234	11342	88
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network




Coordinates	36.6602981, -79.5133263
Observation Date	2024-06-10
Elevation (ft)	694.149
Drought Index (PDSI)	Normal (2024-05)
WebWIMP H <sub>2</sub> O Balance	Dry Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-06-10	2.605906	5.927559	4.641732	Normal	2	3	6
2024-05-11	2.970473	4.738189	1.850394	Dry	1	2	2
2024-04-11	3.051181	4.787795	3.03937	Dry	1	1	1
Result							Drier than Normal - 9



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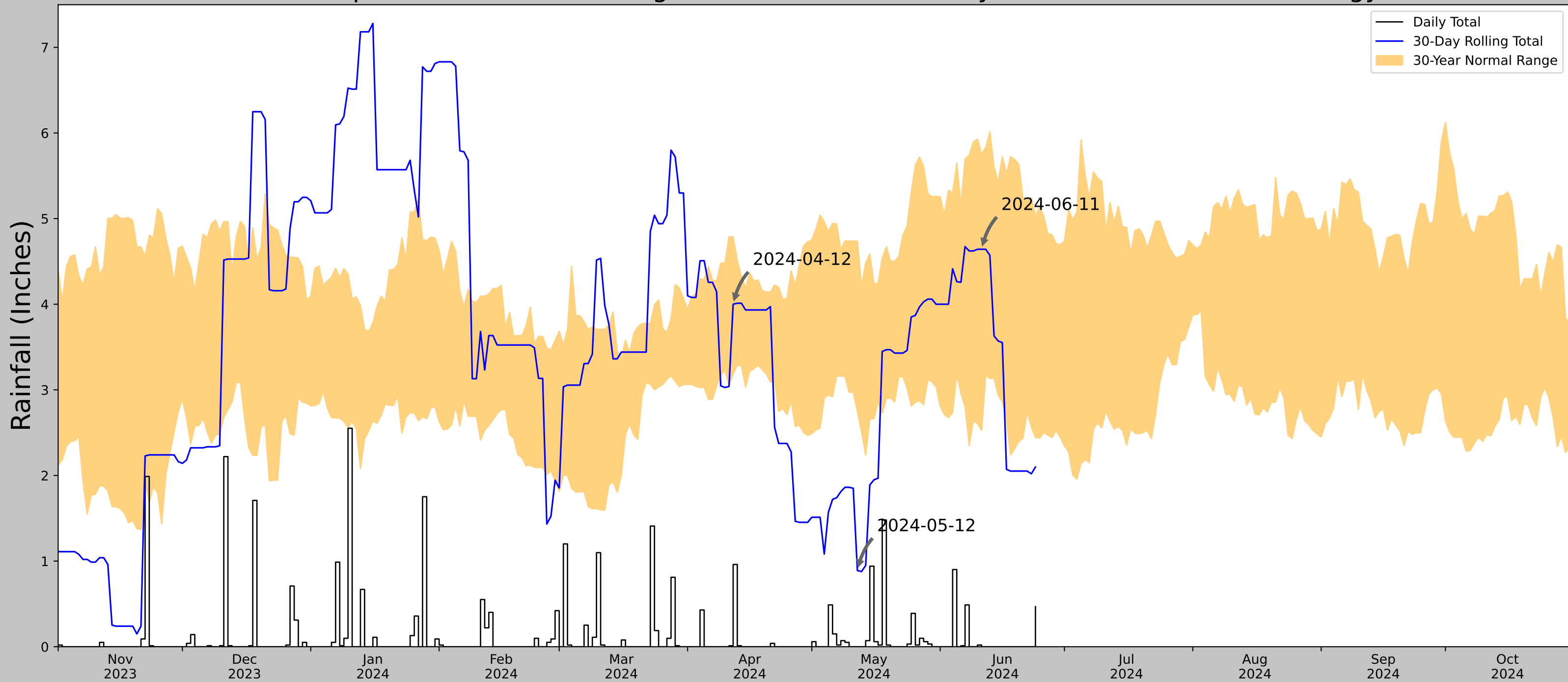
Developed by:  
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Development Center



Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.538	47.167	6.234	11342	88
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0




# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network




Coordinates	36.6602981, -79.5133263
Observation Date	2024-06-11
Elevation (ft)	694.149
Drought Index (PDSI)	Normal (2024-05)
WebWIMP H <sub>2</sub> O Balance	Dry Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-06-11	2.52441	5.755118	4.641732	Normal	2	3	6
2024-05-12	2.74685	4.738189	0.889764	Dry	1	2	2
2024-04-12	3.183465	4.787795	4.0	Normal	2	1	2
Result							Normal Conditions - 10



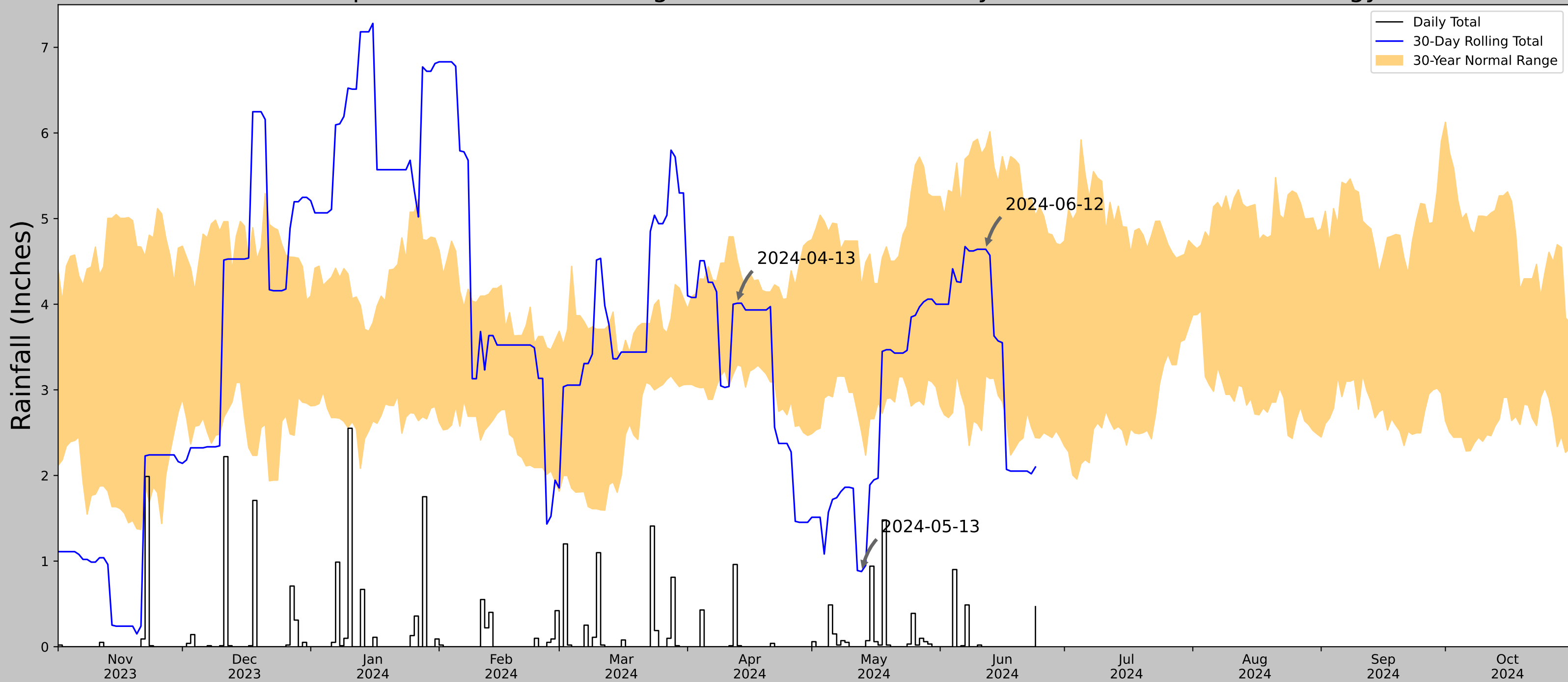
Figures and tables made by the  
Antecedent Precipitation Tool  
Version 2.0

Developed by:  
U.S. Army Corps of Engineers and  
U.S. Army Engineer Research and  
Development Center



Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.538	47.167	6.234	11342	88
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.6602981, -79.5133263
Observation Date	2024-06-12
Elevation (ft)	694.149
Drought Index (PDSI)	Normal (2024-05)
WebWIMP H <sub>2</sub> O Balance	Dry Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-06-12	3.166142	5.833071	4.641732	Normal	2	3	6
2024-05-13	2.511024	4.208662	0.877953	Dry	1	2	2
2024-04-13	3.291339	4.514567	4.011811	Normal	2	1	2
Result							Normal Conditions - 10

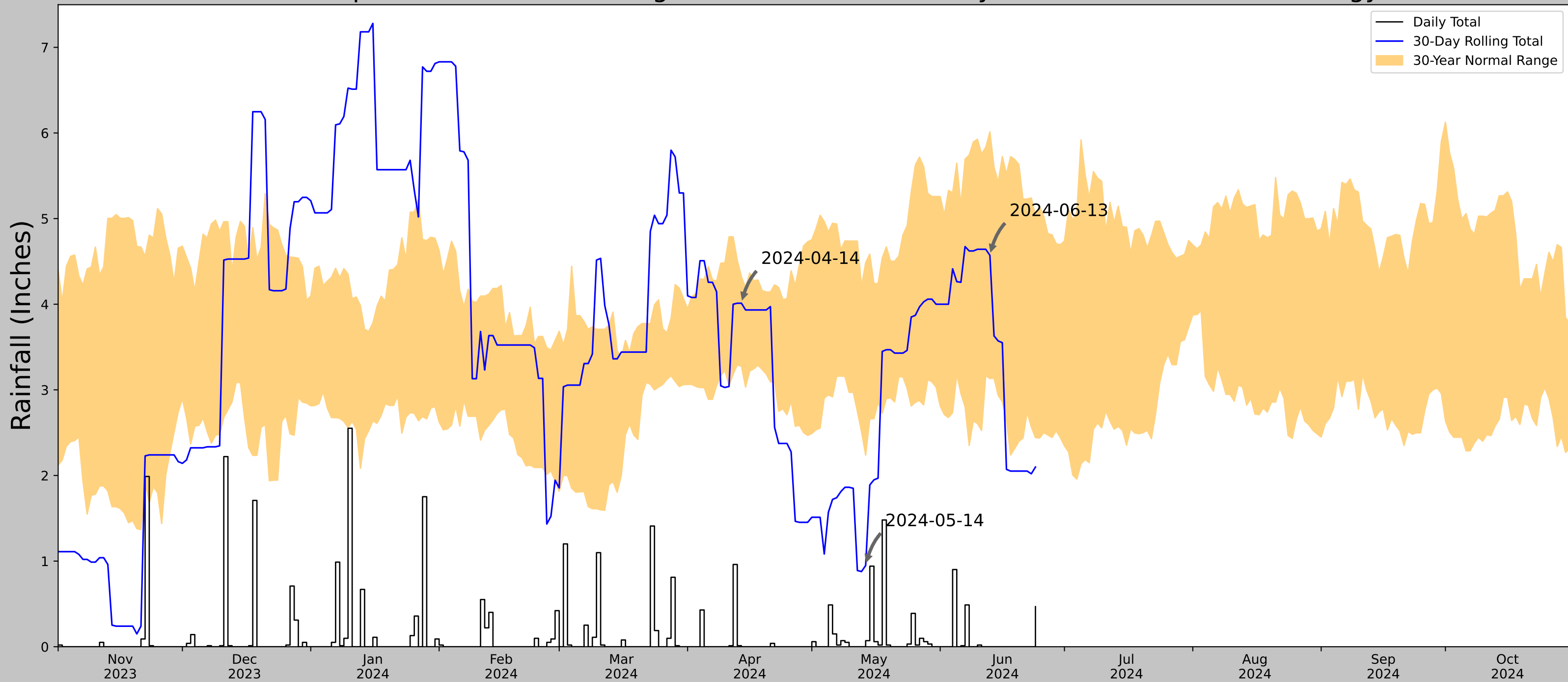
Figures and tables made by the Antecedent Precipitation Tool Version 2.0

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Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.538	47.167	6.234	11342	88
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0




# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network




Coordinates	36.6602981, -79.5133263
Observation Date	2024-06-13
Elevation (ft)	694.149
Drought Index (PDSI)	Normal (2024-05)
WebWIMP H <sub>2</sub> O Balance	Dry Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-06-13	3.13189	6.014567	4.570866	Normal	2	3	6
2024-05-14	2.237008	4.487008	0.948819	Dry	1	2	2
2024-04-14	3.275984	4.322047	4.011811	Normal	2	1	2
Result							Normal Conditions - 10



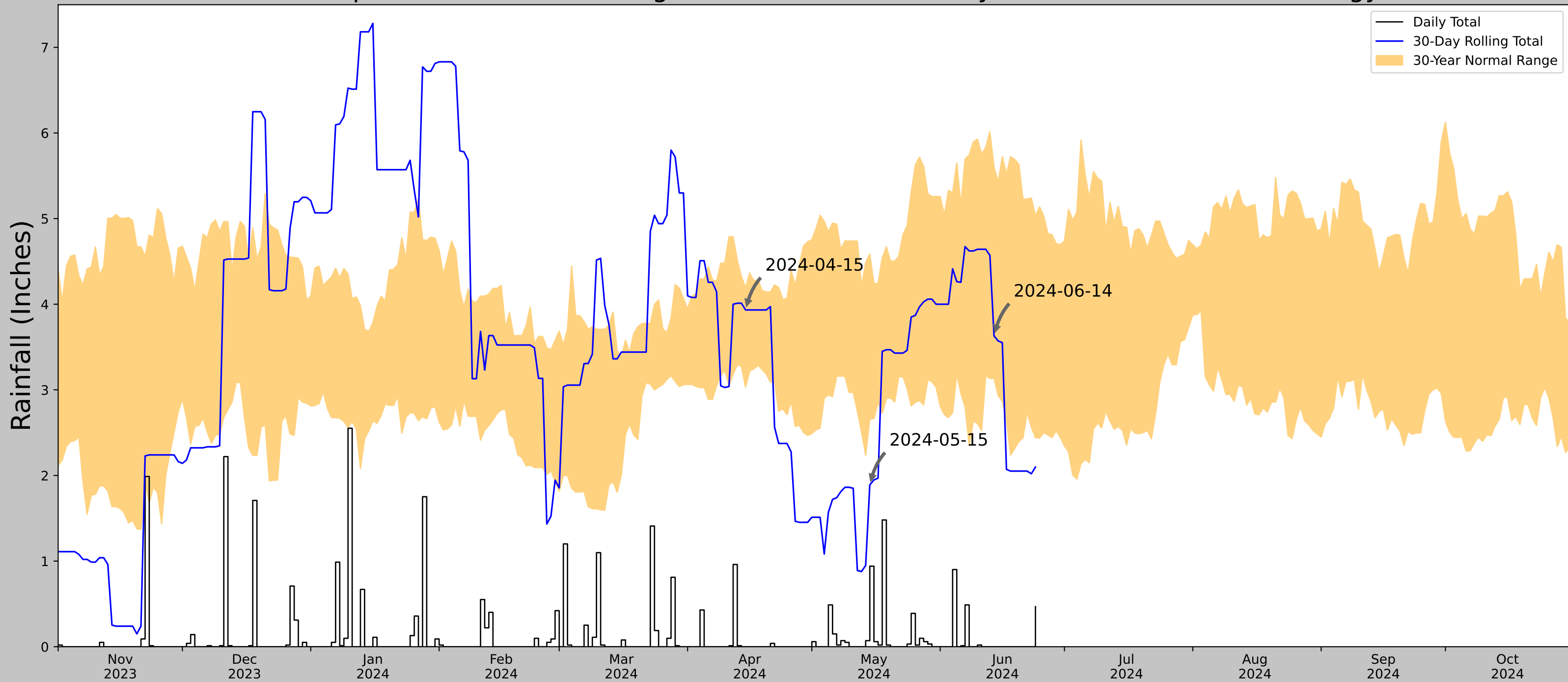
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Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.538	47.167	6.234	11342	88
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.6602981, -79.5133263
Observation Date	2024-06-14
Elevation (ft)	694.149
Drought Index (PDSI)	Normal (2024-05)
WebWIMP H <sub>2</sub> O Balance	Dry Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-06-14	3.135827	5.602362	3.629921	Normal	2	3	6
2024-05-15	2.661024	4.585433	1.889764	Dry	1	2	2
2024-04-15	3.03189	4.193701	3.933071	Normal	2	1	2
Result							Normal Conditions - 10

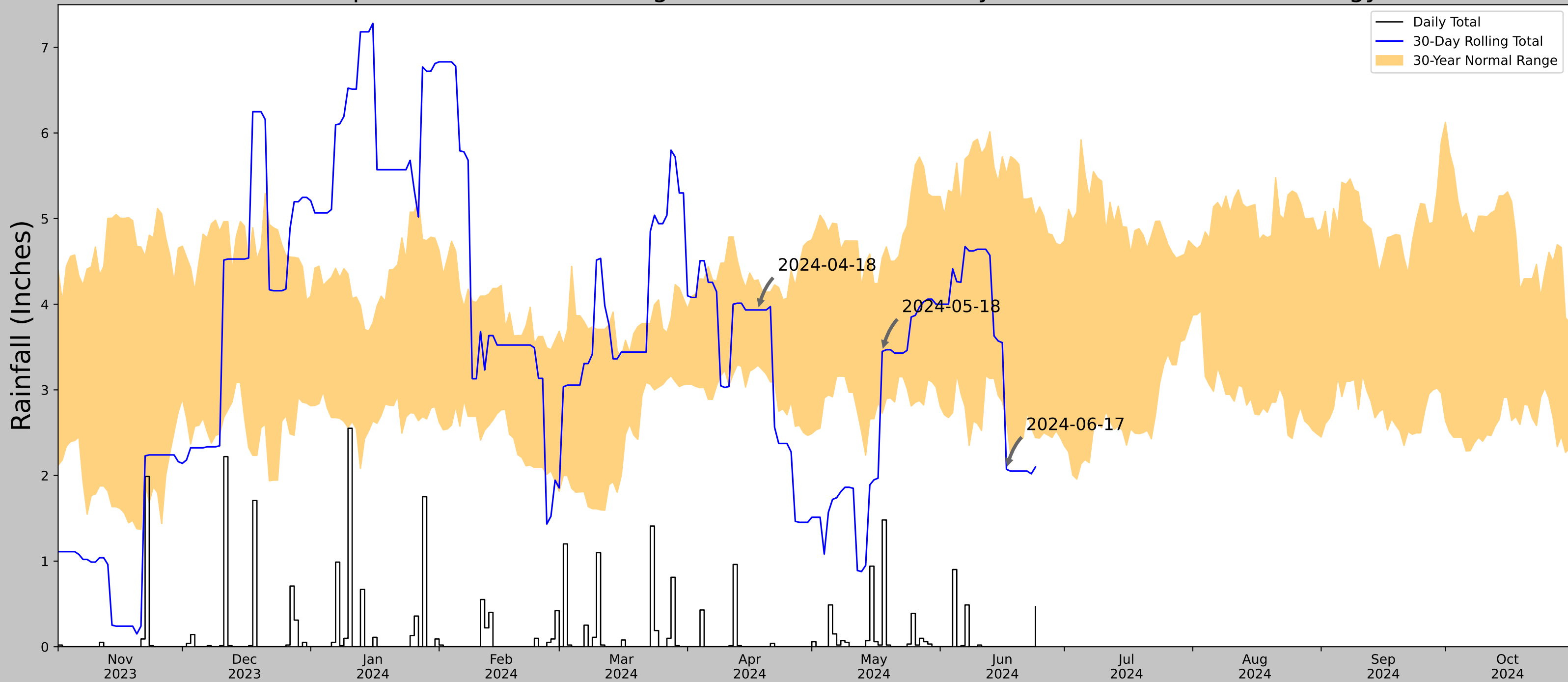
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Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.538	47.167	6.234	11342	88
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0



# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.6602981, -79.5133263
Observation Date	2024-06-17
Elevation (ft)	694.149
Drought Index (PDSI)	Normal (2024-05)
WebWIMP H <sub>2</sub> O Balance	Dry Season

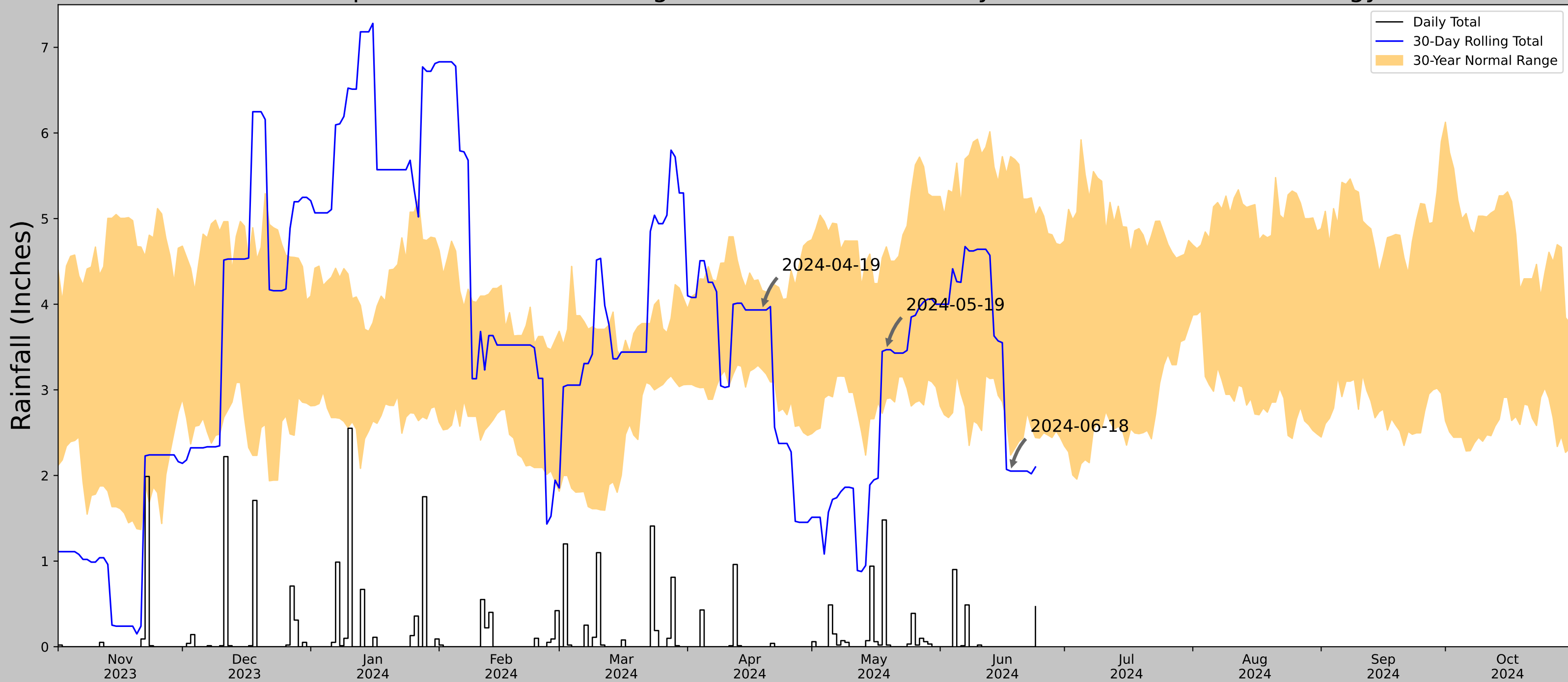
30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-06-17	2.647638	5.52126	2.070866	Dry	1	3	3
2024-05-18	2.725591	4.541732	3.448819	Normal	2	2	4
2024-04-18	3.286614	4.284252	3.933071	Normal	2	1	2
Result							Drier than Normal - 9

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Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.538	47.167	6.234	11342	88
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.6602981, -79.5133263
Observation Date	2024-06-18
Elevation (ft)	694.149
Drought Index (PDSI)	Normal (2024-05)
WebWIMP H <sub>2</sub> O Balance	Dry Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-06-18	2.238583	5.72441	2.051181	Dry	1	3	3
2024-05-19	2.89685	4.670079	3.468504	Normal	2	2	4
2024-04-19	3.237795	4.159843	3.933071	Normal	2	1	2
Result							Drier than Normal - 9

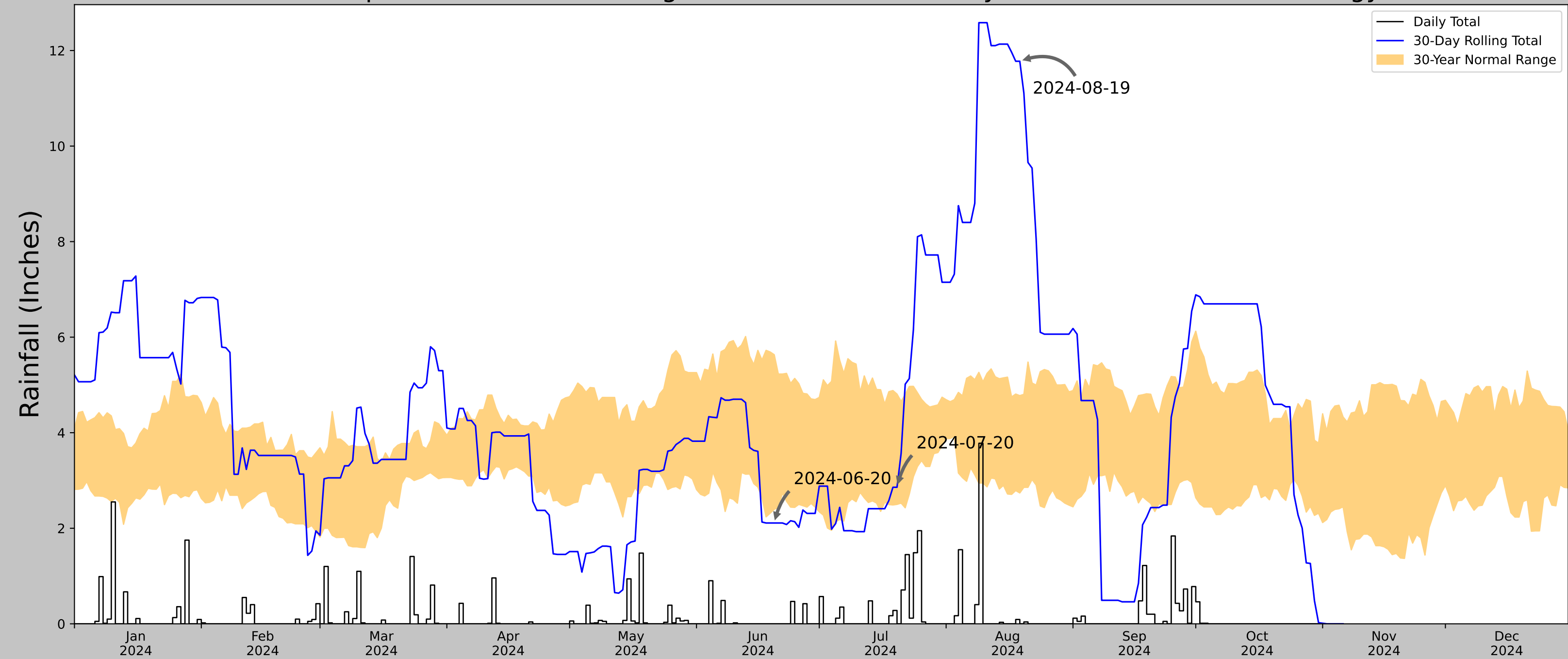
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Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.538	47.167	6.234	11342	88
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0




# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.666523, -79.507490
Observation Date	2024-08-19
Elevation (ft)	742.562
Drought Index (PDSI)	Mild drought
WebWIMP H <sub>2</sub> O Balance	Dry Season


30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-08-19	2.738976	4.776772	11.775591	Wet	3	3	9
2024-07-20	2.499606	4.808662	2.858268	Normal	2	2	4
2024-06-20	2.397244	5.633071	2.110236	Dry	1	1	1
Result							Normal Conditions - 14

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.009	95.58	6.552	11342	85
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
DANVILLE 5.5 N	36.6627, -79.4199	670.932	11.013	23.95	5.22	0	1
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
GRETNA 0.5 WNW	36.9545, -79.3724	910.105	9.398	263.123	6.702	0	2
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0

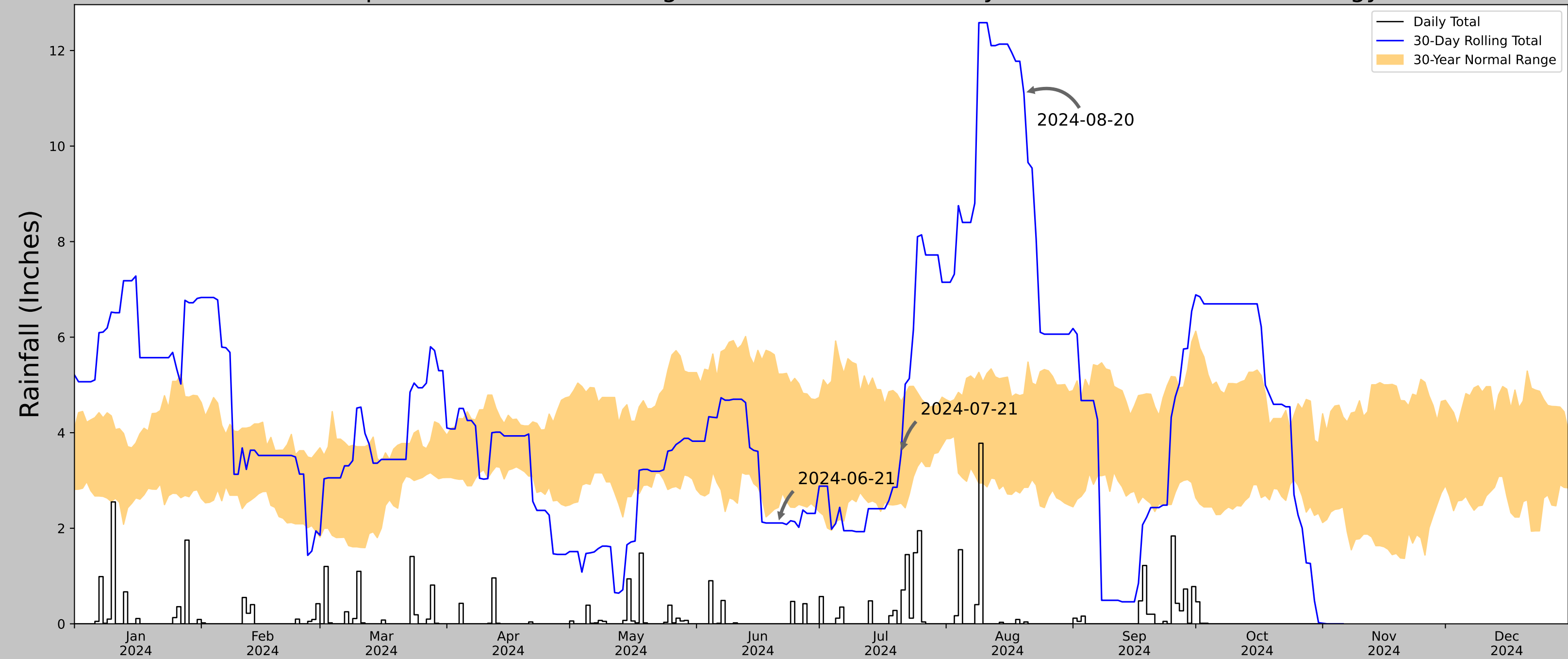


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# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.666523, -79.507490
Observation Date	2024-08-20
Elevation (ft)	742.562
Drought Index (PDSI)	Mild drought
WebWIMP H <sub>2</sub> O Balance	Dry Season


30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-08-20	2.856299	4.803543	11.1063	Wet	3	3	9
2024-07-21	2.527165	4.655906	3.566929	Normal	2	2	4
2024-06-21	2.436614	5.228347	2.110236	Dry	1	1	1
Result							Normal Conditions - 14

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.009	95.58	6.552	11342	85
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
DANVILLE 5.5 N	36.6627, -79.4199	670.932	11.013	23.95	5.22	0	1
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
GRETNA 0.5 WNW	36.9545, -79.3724	910.105	9.398	263.123	6.702	0	2
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0



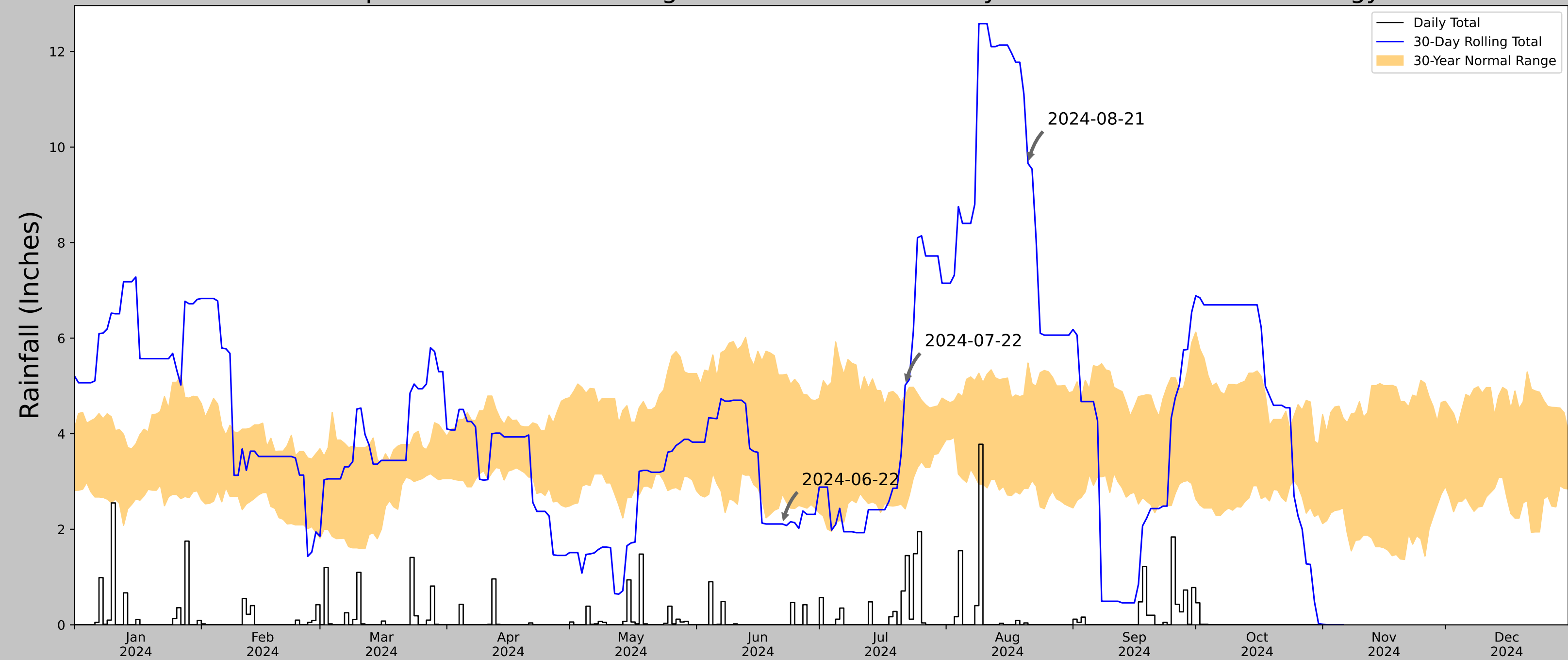
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# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.666523, -79.507490
Observation Date	2024-08-21
Elevation (ft)	742.562
Drought Index (PDSI)	Mild drought
WebWIMP H <sub>2</sub> O Balance	Dry Season


30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-08-21	2.856299	5.479134	9.657481	Wet	3	3	9
2024-07-22	2.427953	4.800394	5.015748	Wet	3	2	6
2024-06-22	2.737402	5.228347	2.110236	Dry	1	1	1
Result							Wetter than Normal - 16

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.009	95.58	6.552	11342	84
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
DANVILLE 5.5 N	36.6627, -79.4199	670.932	11.013	23.95	5.22	0	1
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
GRETNA 0.5 WNW	36.9545, -79.3724	910.105	9.398	263.123	6.702	0	3
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0

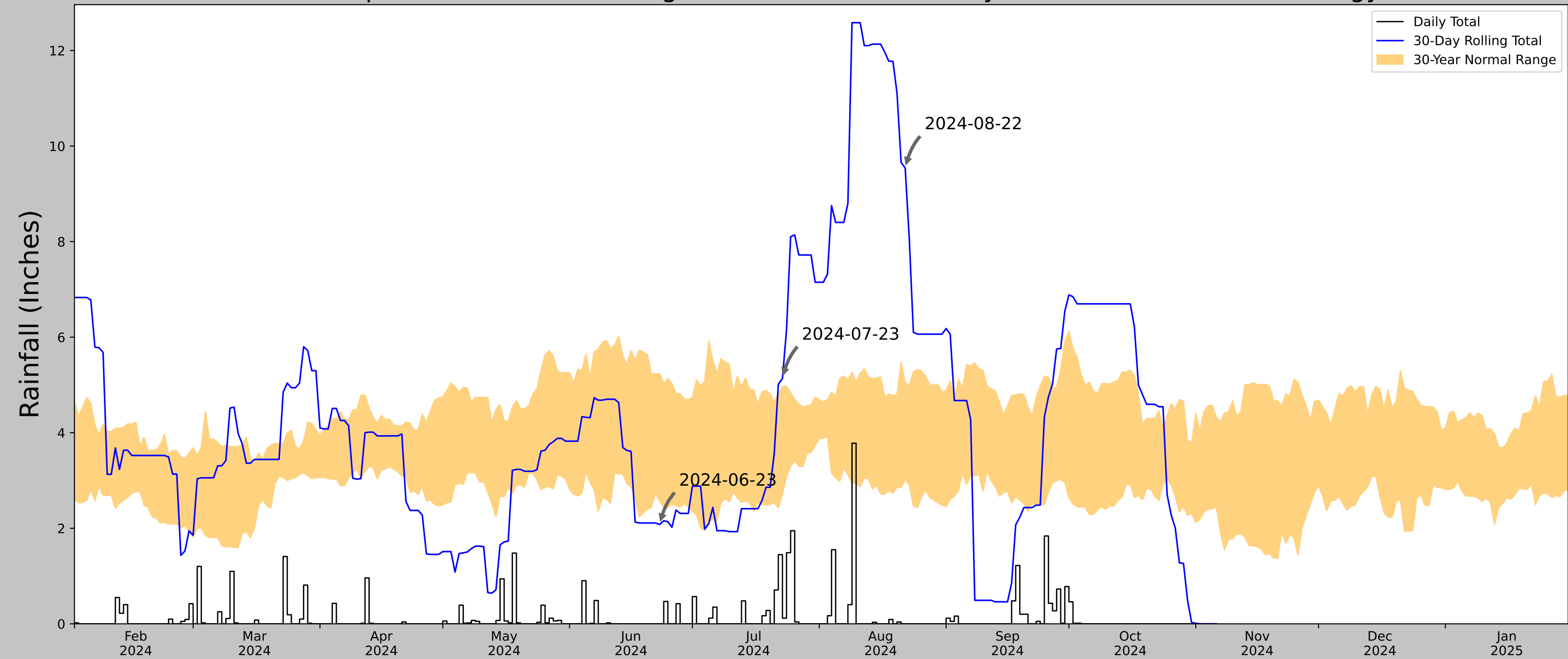


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# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.666523, -79.507490
Observation Date	2024-08-22
Elevation (ft)	742.562
Drought Index (PDSI)	Mild drought
WebWIMP H <sub>2</sub> O Balance	Dry Season


30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-08-22	3.02126	5.040158	9.53937	Wet	3	3	9
2024-07-23	2.713386	4.968504	5.133858	Wet	3	2	6
2024-06-23	2.566142	5.242126	2.07874	Dry	1	1	1
Result							Wetter than Normal - 16

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.009	95.58	6.552	11342	83
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
DANVILLE 5.5 N	36.6627, -79.4199	670.932	11.013	23.95	5.22	0	1
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
GRETNA 0.5 WNW	36.9545, -79.3724	910.105	9.398	263.123	6.702	0	4
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0



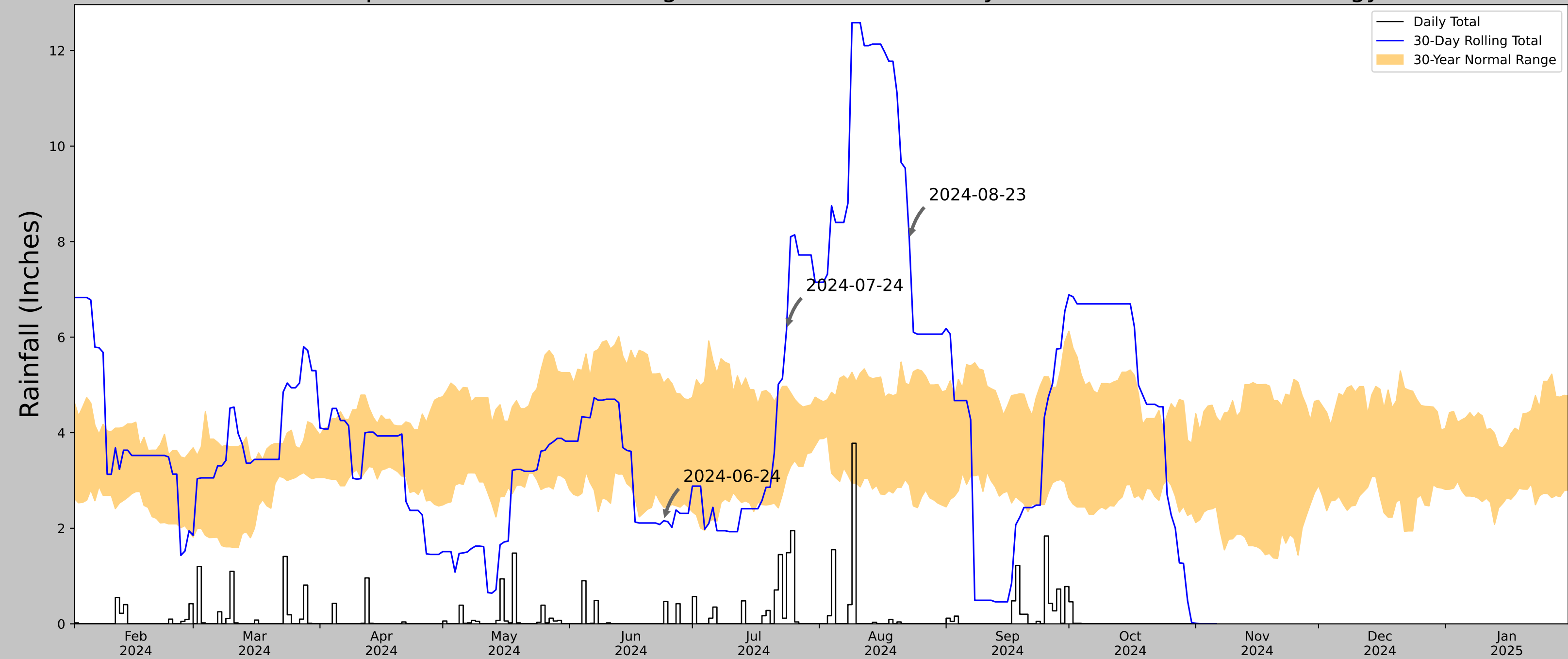
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# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.666523, -79.507490
Observation Date	2024-08-23
Elevation (ft)	742.562
Drought Index (PDSI)	Mild drought
WebWIMP H <sub>2</sub> O Balance	Dry Season


30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-08-23	2.903937	4.996063	8.051181	Wet	3	3	9
2024-07-24	3.078347	4.97126	6.153544	Wet	3	2	6
2024-06-24	2.442126	5.033071	2.15748	Dry	1	1	1
Result							Wetter than Normal - 16

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.009	95.58	6.552	11342	83
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
DANVILLE 5.5 N	36.6627, -79.4199	670.932	11.013	23.95	5.22	0	1
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
GRETNA 0.5 WNW	36.9545, -79.3724	910.105	9.398	263.123	6.702	0	4
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0

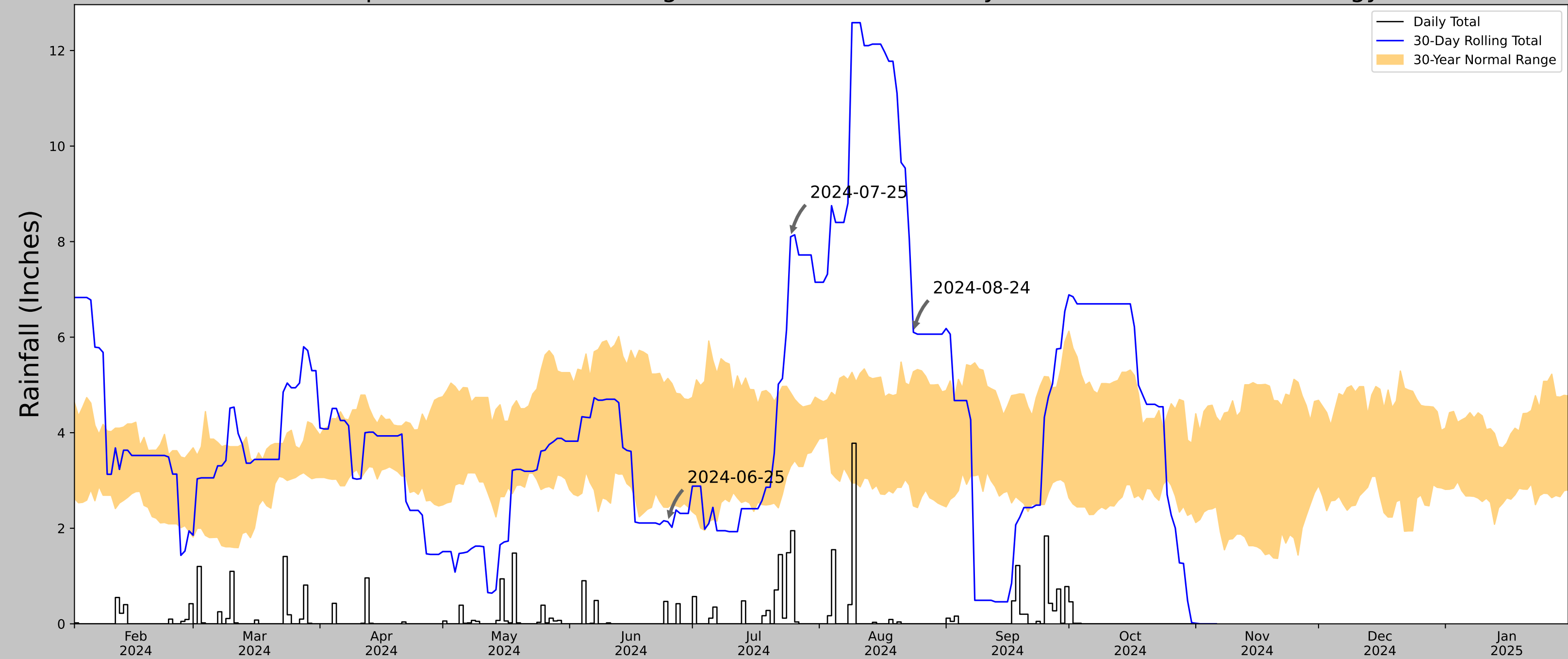


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# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.666523, -79.507490
Observation Date	2024-08-24
Elevation (ft)	742.562
Drought Index (PDSI)	Mild drought
WebWIMP H <sub>2</sub> O Balance	Dry Season


30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-08-24	2.466929	5.277166	6.102362	Wet	3	3	9
2024-07-25	3.293307	4.836221	8.102362	Wet	3	2	6
2024-06-25	2.436614	5.137008	2.137795	Dry	1	1	1
Result							Wetter than Normal - 16

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.009	95.58	6.552	11342	83
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
DANVILLE 5.5 N	36.6627, -79.4199	670.932	11.013	23.95	5.22	0	1
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
GRETNA 0.5 WNW	36.9545, -79.3724	910.105	9.398	263.123	6.702	0	4
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0



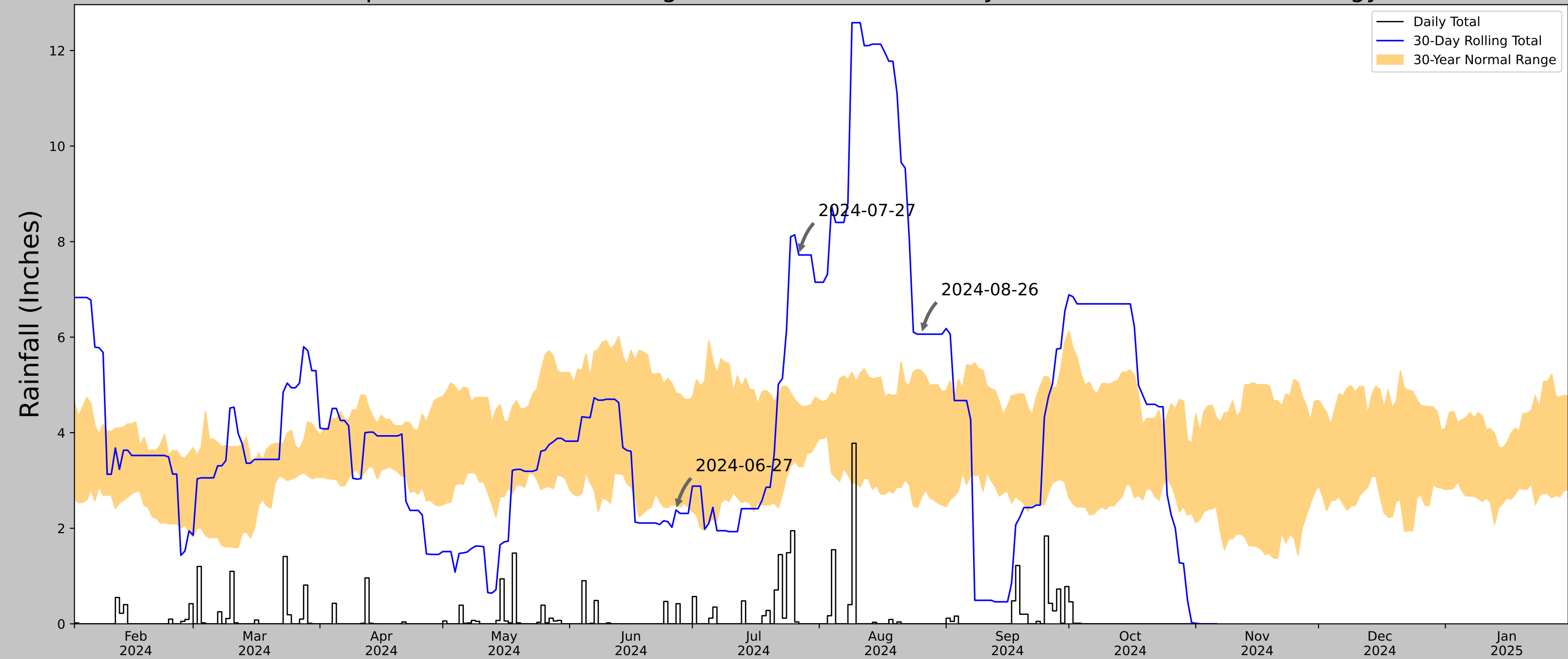
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# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.666523, -79.507490
Observation Date	2024-08-26
Elevation (ft)	742.562
Drought Index (PDSI)	Mild drought
WebWIMP H <sub>2</sub> O Balance	Dry Season


30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-08-26	2.655906	5.294882	6.062992	Wet	3	3	9
2024-07-27	3.293307	4.604331	7.720473	Wet	3	2	6
2024-06-27	2.472441	4.825197	2.38189	Dry	1	1	1
Result							Wetter than Normal - 16

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.009	95.58	6.552	11342	83
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
DANVILLE 5.5 N	36.6627, -79.4199	670.932	11.013	23.95	5.22	0	1
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
GRETNA 0.5 WNW	36.9545, -79.3724	910.105	9.398	263.123	6.702	0	4
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0



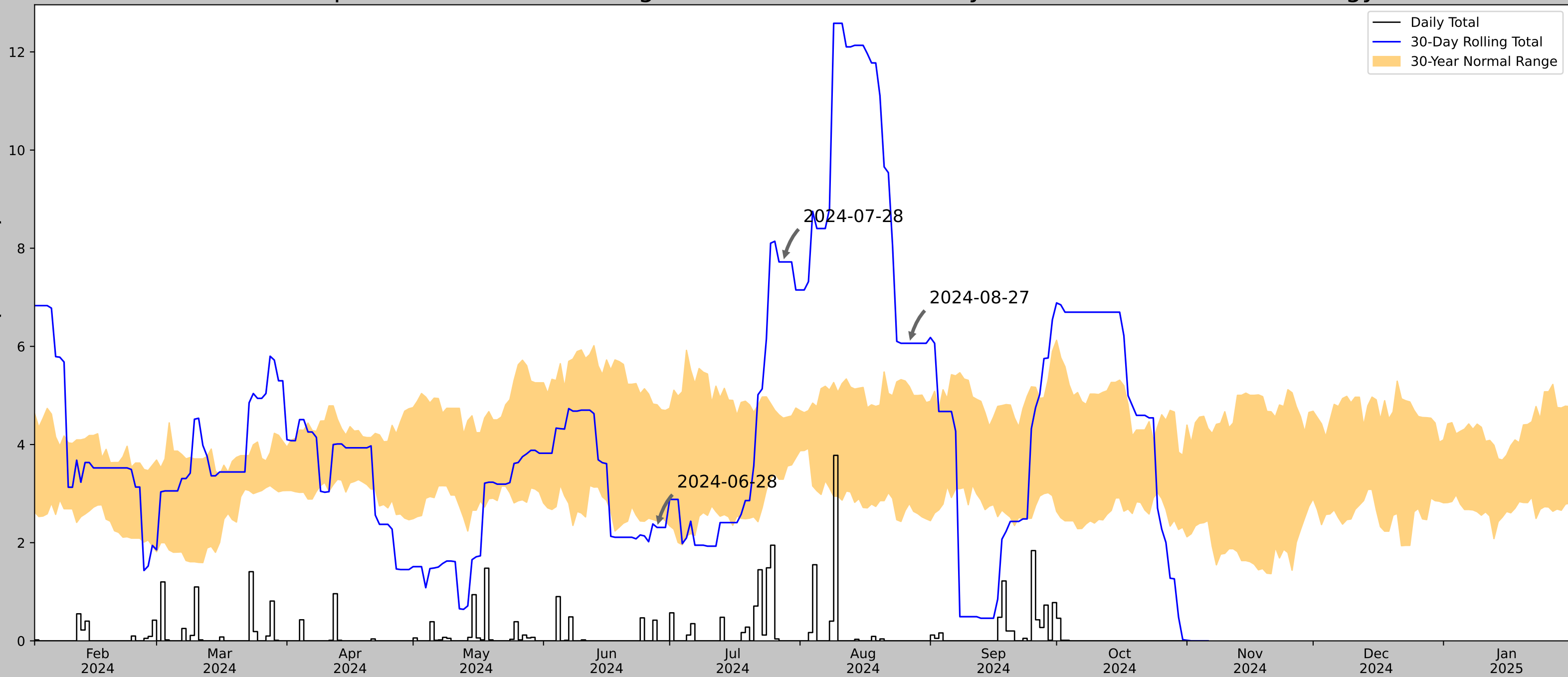
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# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network


Rainfall (Inches)



Coordinates	36.666523, -79.507490
Observation Date	2024-08-27
Elevation (ft)	742.562
Drought Index (PDSI)	Mild drought
WebWIMP H <sub>2</sub> O Balance	Dry Season


30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-08-27	2.800394	5.181103	6.062992	Wet	3	3	9
2024-07-28	3.293307	4.537402	7.720473	Wet	3	2	6
2024-06-28	2.442913	4.811024	2.311024	Dry	1	1	1
Result							Wetter than Normal - 16

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.009	95.58	6.552	11342	83
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
DANVILLE 5.5 N	36.6627, -79.4199	670.932	11.013	23.95	5.22	0	1
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
GRETNA 0.5 WNW	36.9545, -79.3724	910.105	9.398	263.123	6.702	0	4
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0



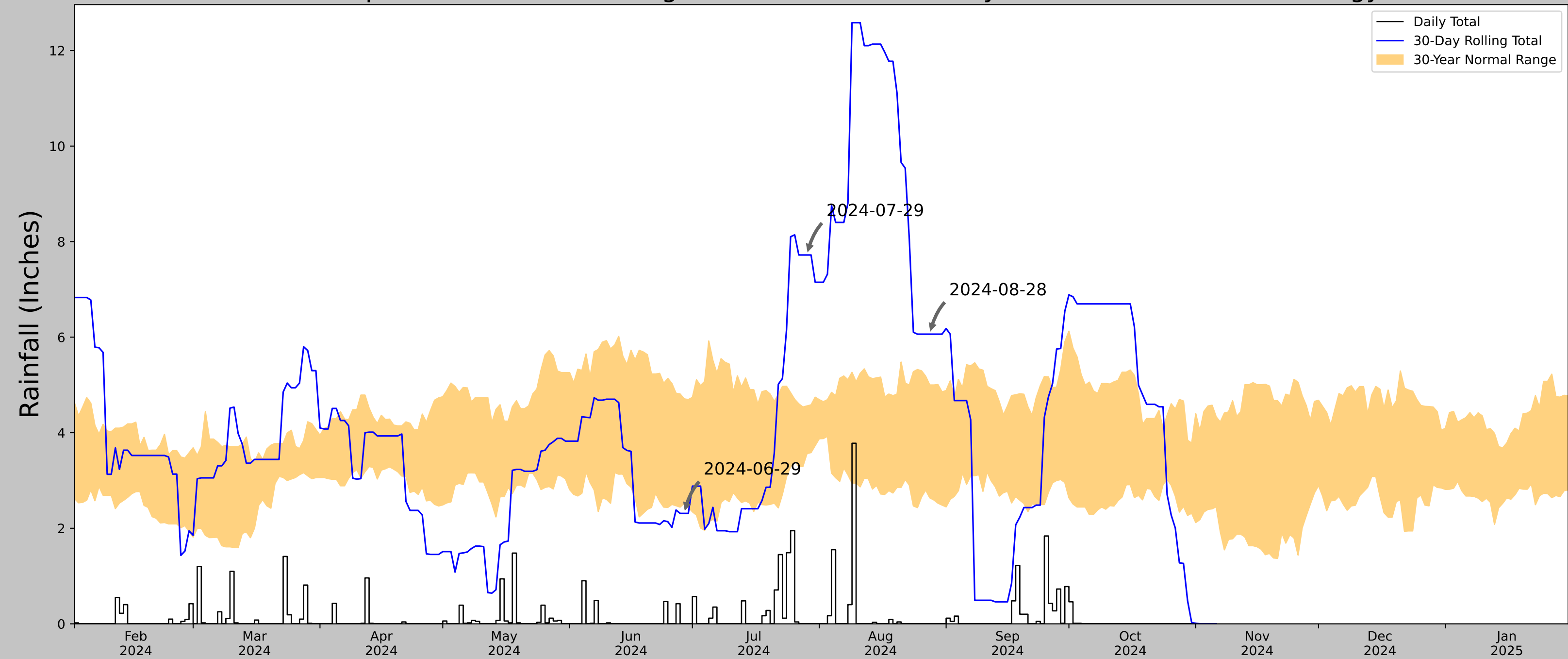
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# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.666523, -79.507490
Observation Date	2024-08-28
Elevation (ft)	742.562
Drought Index (PDSI)	Mild drought
WebWIMP H <sub>2</sub> O Balance	Dry Season


30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-08-28	2.637795	4.999213	6.062992	Wet	3	3	9
2024-07-29	3.562992	4.56063	7.720473	Wet	3	2	6
2024-06-29	2.520866	4.707874	2.311024	Dry	1	1	1
Result							Wetter than Normal - 16

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.009	95.58	6.552	11342	83
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
DANVILLE 5.5 N	36.6627, -79.4199	670.932	11.013	23.95	5.22	0	1
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
GRETNA 0.5 WNW	36.9545, -79.3724	910.105	9.398	263.123	6.702	0	4
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0

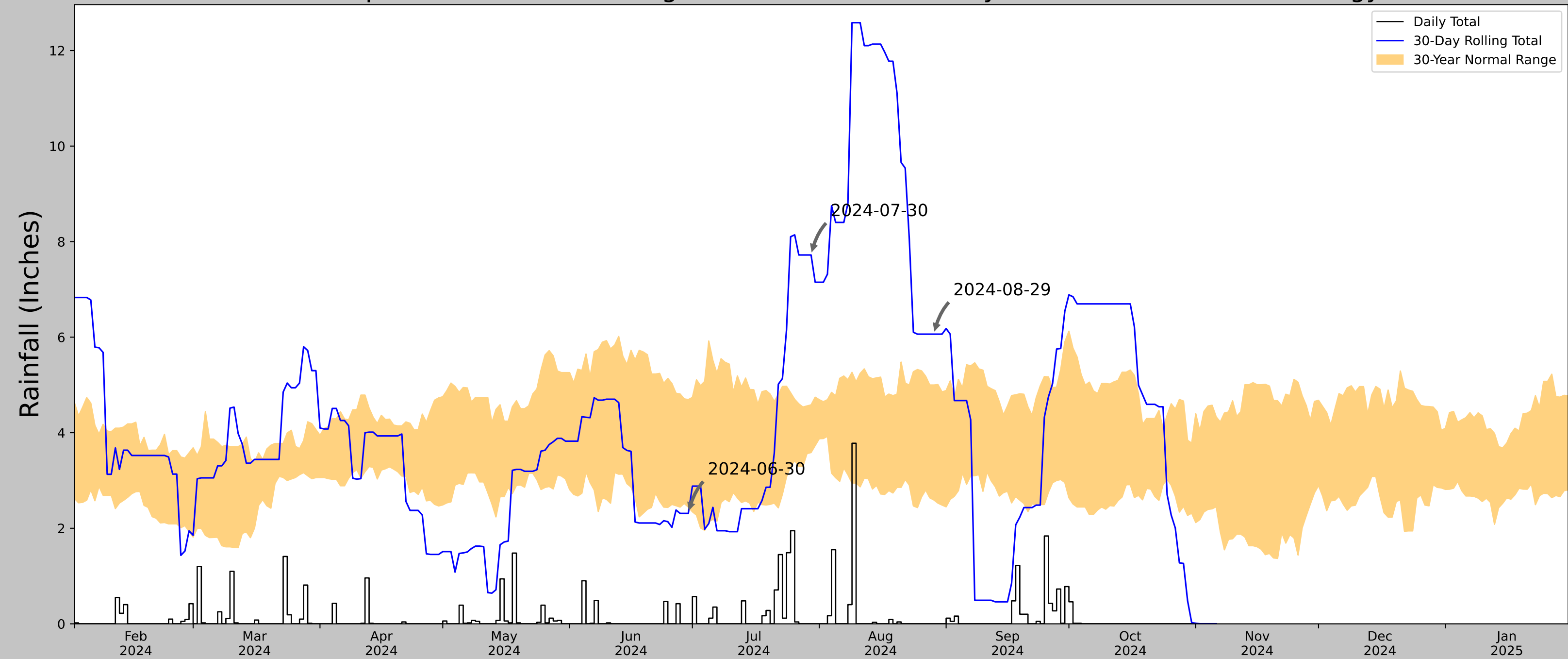


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# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.666523, -79.507490
Observation Date	2024-08-29
Elevation (ft)	742.562
Drought Index (PDSI)	Mild drought
WebWIMP H <sub>2</sub> O Balance	Dry Season


30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-08-29	2.59252	4.999213	6.062992	Wet	3	3	9
2024-07-30	3.585039	4.582284	7.720473	Wet	3	2	6
2024-06-30	2.443701	4.694095	2.311024	Dry	1	1	1
Result							Wetter than Normal - 16

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.009	95.58	6.552	11342	83
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
DANVILLE 5.5 N	36.6627, -79.4199	670.932	11.013	23.95	5.22	0	1
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
GRETNA 0.5 WNW	36.9545, -79.3724	910.105	9.398	263.123	6.702	0	4
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0



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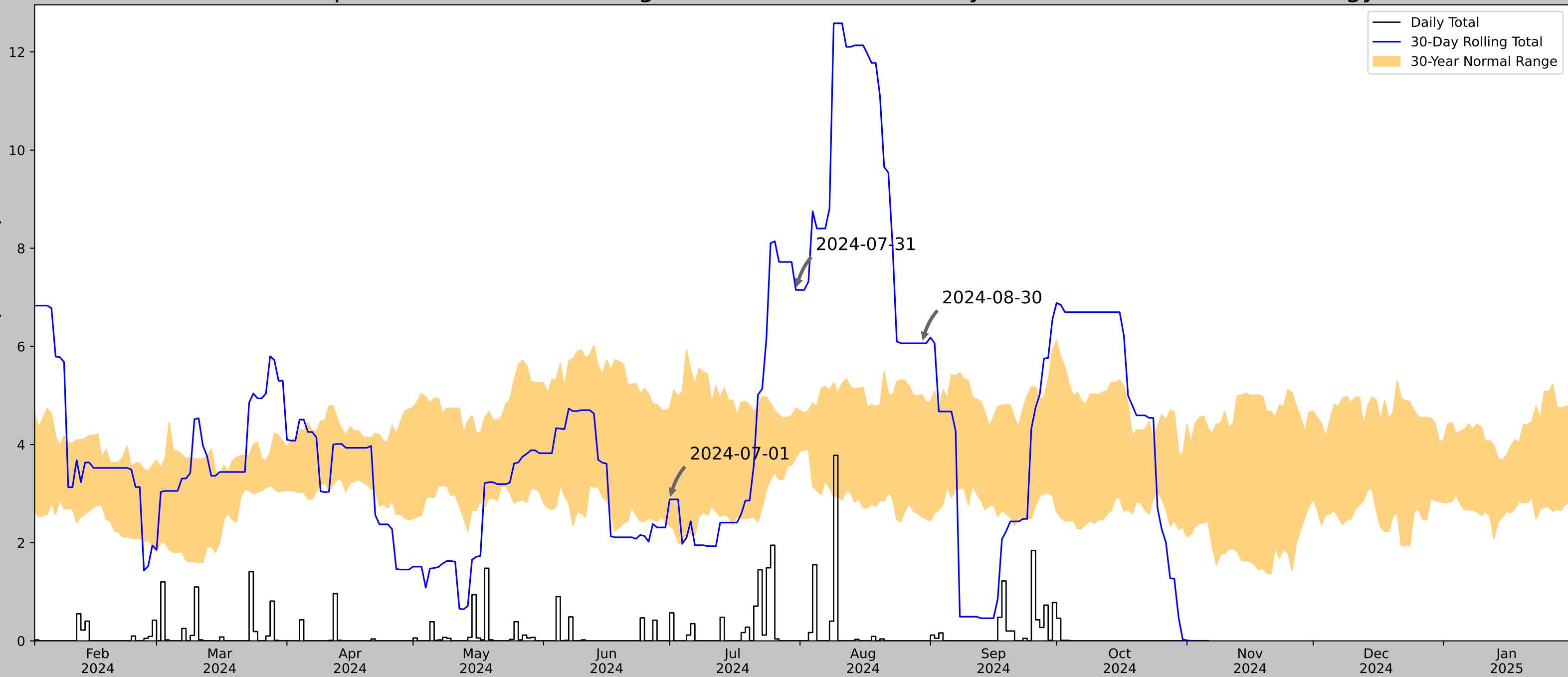
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# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network


Rainfall (Inches)



Coordinates	36.666523, -79.507490
Observation Date	2024-08-30
Elevation (ft)	742.562
Drought Index (PDSI)	Mild drought
WebWIMP H <sub>2</sub> O Balance	Dry Season


30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-08-30	2.526378	5.00748	6.062992	Wet	3	3	9
2024-07-31	3.731102	4.744095	7.149607	Wet	3	2	6
2024-07-01	2.344488	4.738583	2.88189	Normal	2	1	2
Result							Wetter than Normal - 17

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.009	95.58	6.552	11342	83
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
DANVILLE 5.5 N	36.6627, -79.4199	670.932	11.013	23.95	5.22	0	1
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
GRETNA 0.5 WNW	36.9545, -79.3724	910.105	9.398	263.123	6.702	0	4
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0

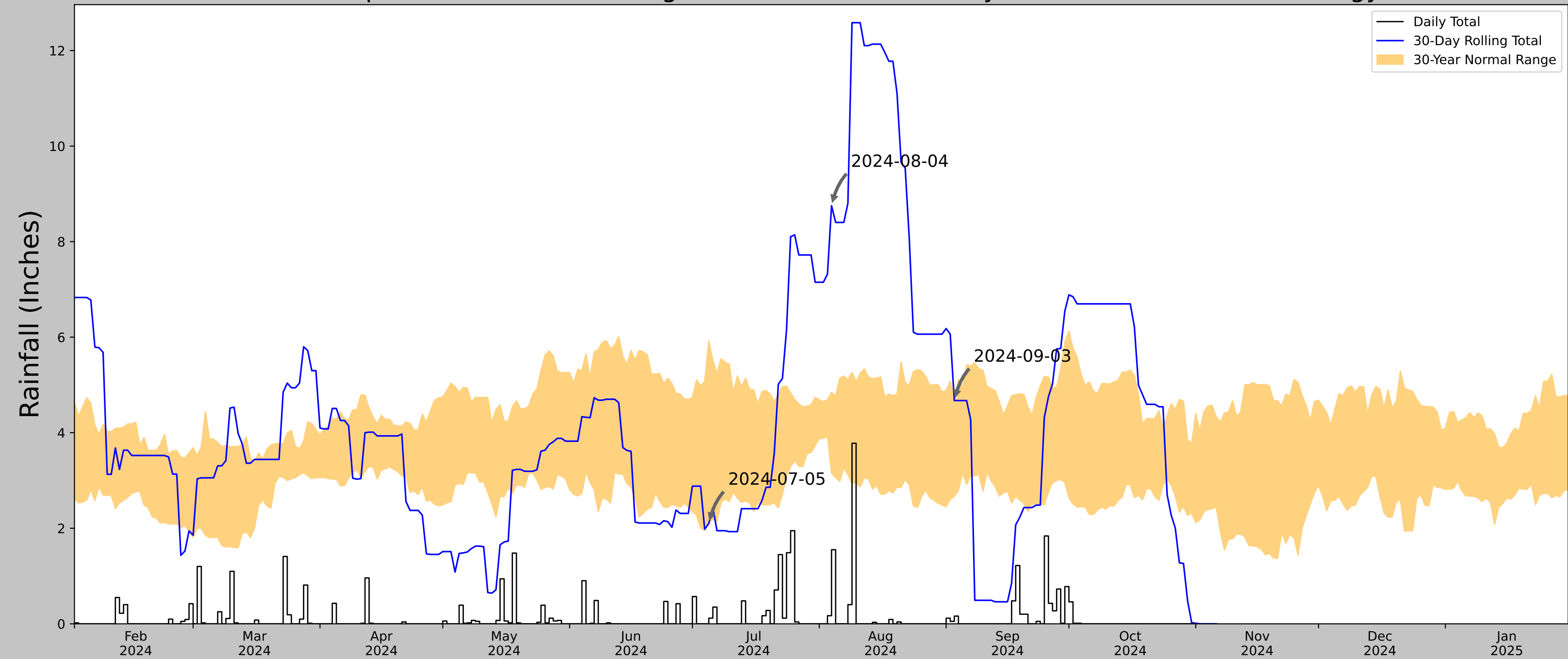


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# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.666523, -79.507490
Observation Date	2024-09-03
Elevation (ft)	742.562
Drought Index (PDSI)	Mild wetness
WebWIMP H <sub>2</sub> O Balance	Wet Season


30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-09-03	2.66811	4.703937	4.673228	Normal	2	3	6
2024-08-04	3.155906	4.844095	8.751969	Wet	3	2	6
2024-07-05	2.137008	5.920473	2.098425	Dry	1	1	1
Result							Normal Conditions - 13

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.009	95.58	6.552	11342	83
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
DANVILLE 5.5 N	36.6627, -79.4199	670.932	11.013	23.95	5.22	0	1
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
GRETNA 0.5 WNW	36.9545, -79.3724	910.105	9.398	263.123	6.702	0	4
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0



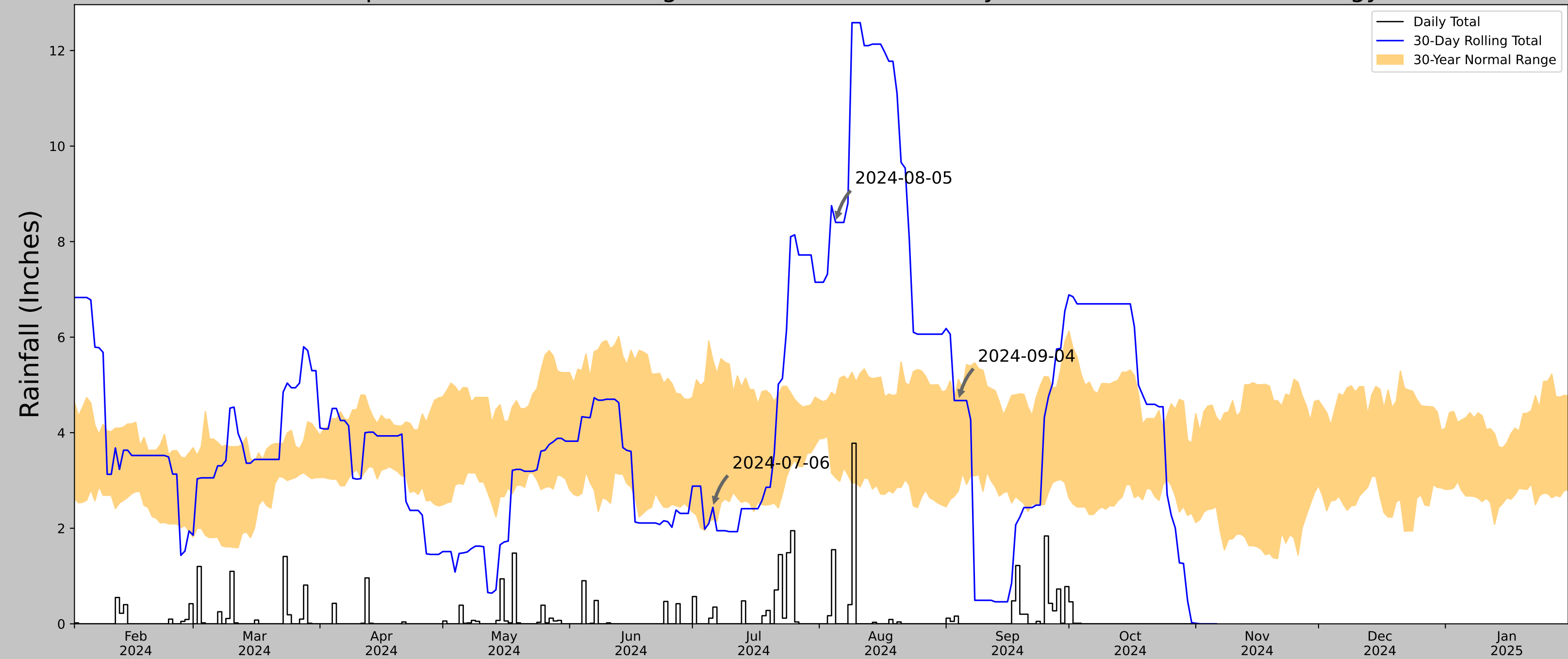
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# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.666523, -79.507490
Observation Date	2024-09-04
Elevation (ft)	742.562
Drought Index (PDSI)	Mild wetness
WebWIMP H <sub>2</sub> O Balance	Wet Season


30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-09-04	2.787008	5.116929	4.673228	Normal	2	3	6
2024-08-05	3.058662	4.771654	8.401575	Wet	3	2	6
2024-07-06	2.185039	5.515355	2.437008	Normal	2	1	2
Result							Normal Conditions - 14

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.009	95.58	6.552	11342	83
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
DANVILLE 5.5 N	36.6627, -79.4199	670.932	11.013	23.95	5.22	0	1
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
GRETNA 0.5 WNW	36.9545, -79.3724	910.105	9.398	263.123	6.702	0	4
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0

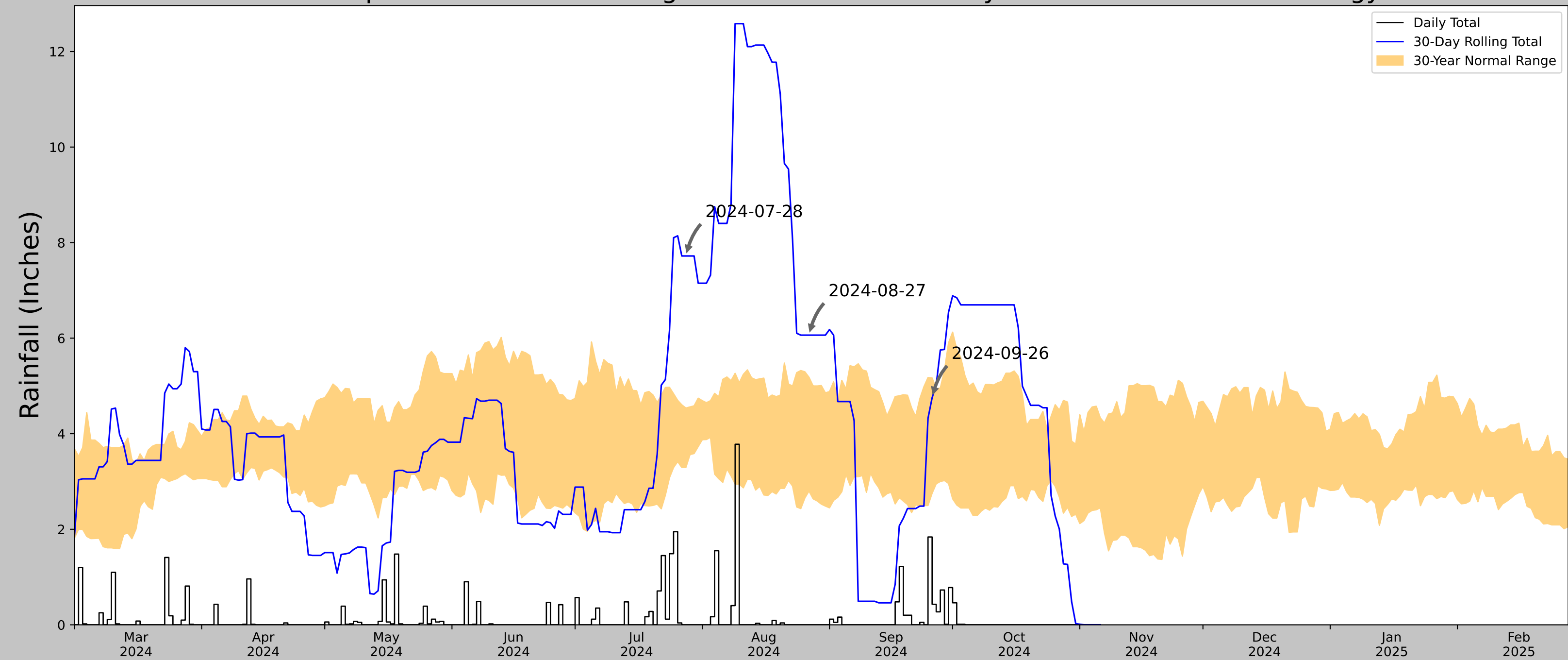


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# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	36.666523, -79.507490
Observation Date	2024-09-26
Elevation (ft)	742.562
Drought Index (PDSI)	Mild wetness
WebWIMP H <sub>2</sub> O Balance	Wet Season


30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-09-26	2.753543	5.166536	4.751969	Normal	2	3	6
2024-08-27	2.800394	5.181103	6.062992	Wet	3	2	6
2024-07-28	3.293307	4.537402	7.720473	Wet	3	1	3
Result							<b>Wetter than Normal - 15</b>

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.009	95.58	6.552	11342	83
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	0	2
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
DANVILLE 5.5 N	36.6627, -79.4199	670.932	11.013	23.95	5.22	0	1
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
GRETNA 0.5 WNW	36.9545, -79.3724	910.105	9.398	263.123	6.702	0	4
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0



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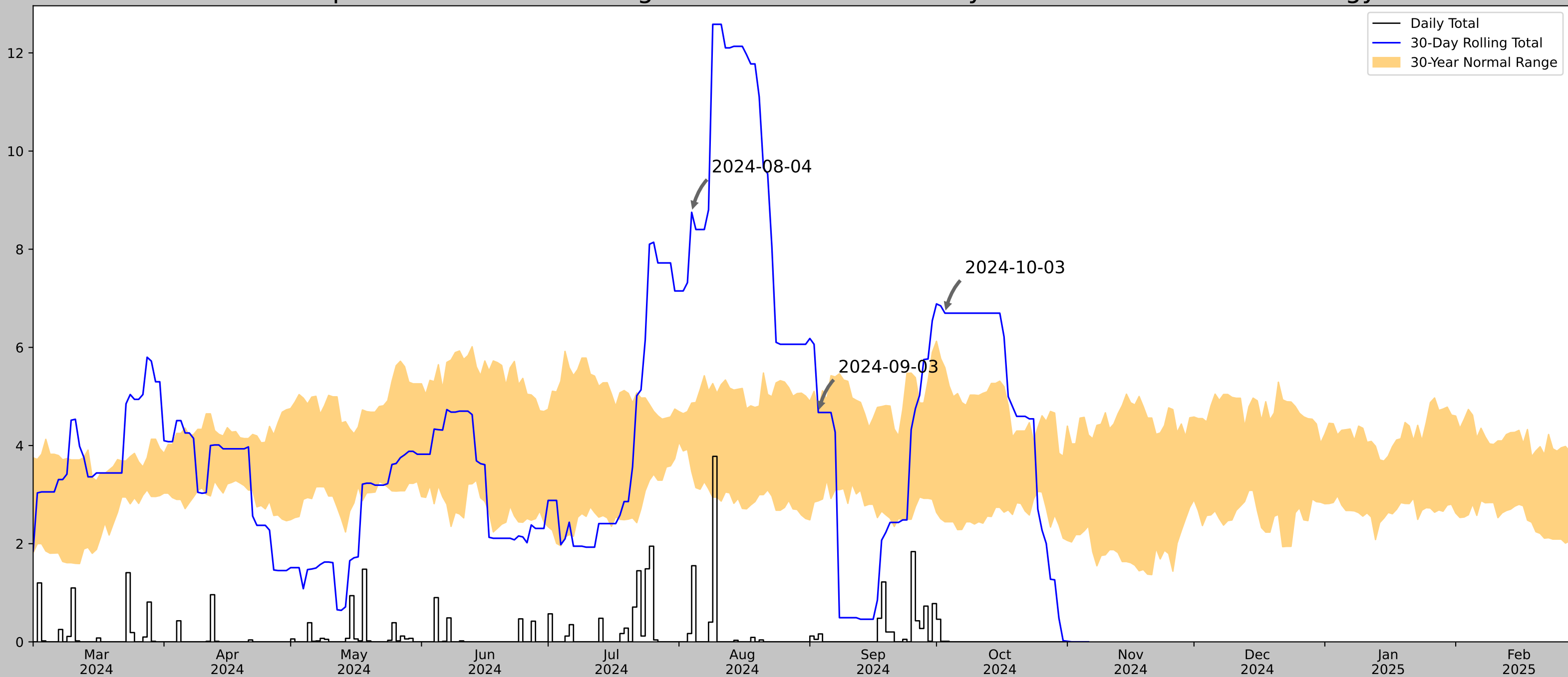
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# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network


Rainfall (Inches)



Coordinates	36.666523, -79.507490
Observation Date	2024-10-03
Elevation (ft)	742.562
Drought Index (PDSI)	Mild wetness (2024-09)
WebWIMP H <sub>2</sub> O Balance	Wet Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-10-03	2.445669	5.585433	6.696851	Wet	3	3	9
2024-09-03	2.872047	4.703937	4.673228	Normal	2	2	4
2024-08-04	3.472047	4.866142	8.751969	Wet	3	1	3
Result							<b>Wetter than Normal - 16</b>

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CHATHAM	36.8219, -79.4103	646.982	12.009	95.58	6.552	11336	86
CHATHAM 4.9 ENE	36.8576, -79.3237	692.913	5.387	45.931	2.672	2	1
CHATHAM 5.9 SW	36.7512, -79.4635	812.992	5.703	166.01	3.513	4	0
DANVILLE 5.5 N	36.6627, -79.4199	670.932	11.013	23.95	5.22	1	1
RINGGOLD 2.6 NNW	36.643, -79.312	676.837	13.506	29.855	6.481	1	0
GRETNA 0.5 WNW	36.9545, -79.3724	910.105	9.398	263.123	6.702	4	2
PITTSVILLE 4.5 NNW	37.0508, -79.4822	683.071	16.306	36.089	7.926	1	0
DANVILLE RGNL AP	36.5728, -79.335	551.837	17.709	95.145	9.654	1	0
DANVILLE 2 SE	36.5628, -79.3633	392.06	18.09	254.922	12.752	3	0



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